"SERRA CARUSO CAP"

1	PROGETTO REV 00	MR	11/21	
REV.	DESCRIZIONE E REVISIONE	Sigla	Data	Firma
		EMESSO		

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Powertis

Comune

COMUNE DI CRACO (MT)

COD. RIF	G/139/07/A/01/PD		
ELABORATO		FILE	
Categoria	N.°		
PD		Scala	- - - - - - -

Opera

PROGETTO PER LA REALIZZAZIONE DI UN IMPIANTO AGRIVOLTAICO DI POTENZA NOMINALE PARI A 19.994,88 kWp DENOMINATO "SERRA CARUSO CAP" - UBICATO NEL COMUNE DI CRACO (MT) - REGIONE BASILICATA

Oggetto

PROGETTO DEFINITIVO

RELAZIONE GEOLOGICA

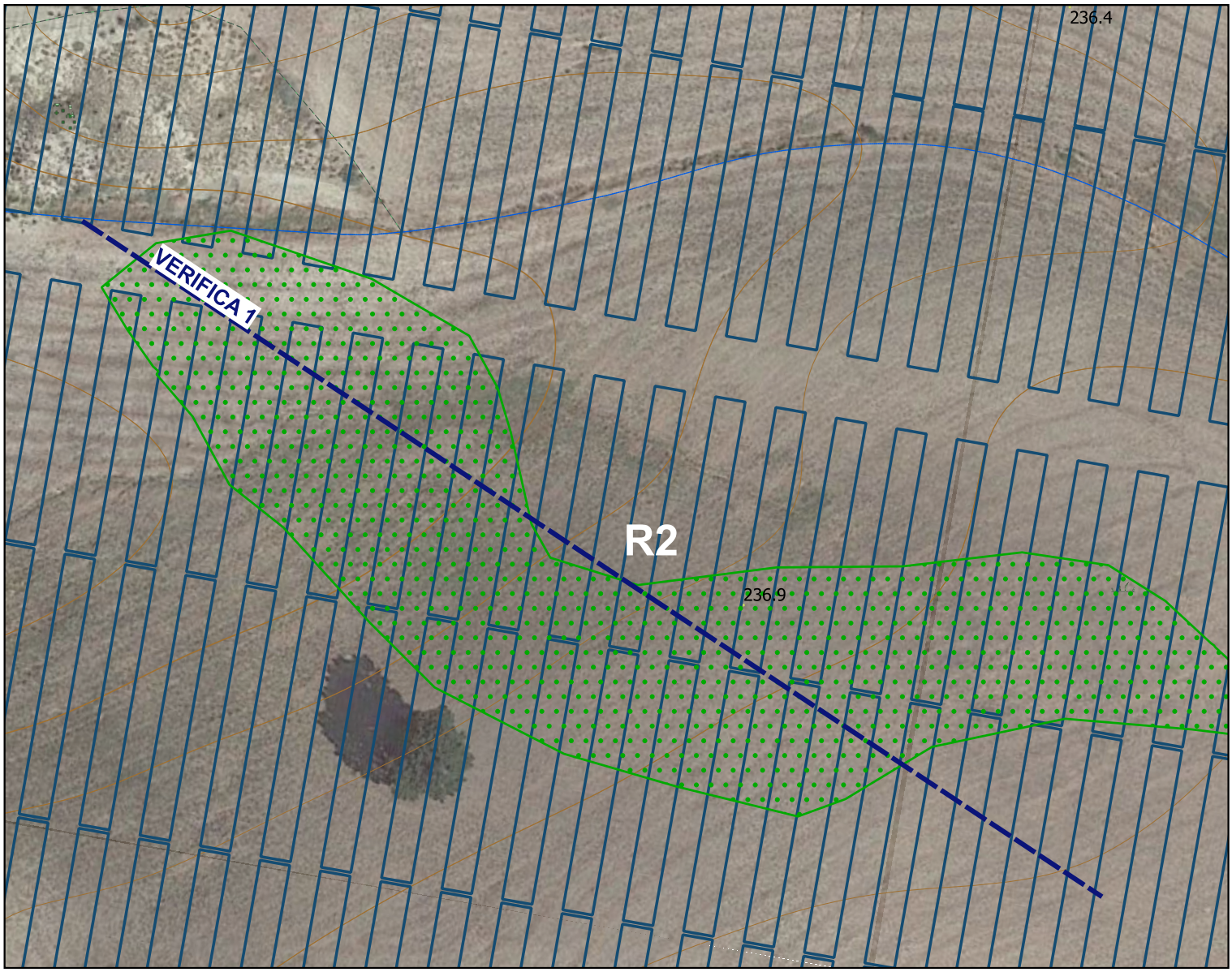
Analisi di stabilità dei pendii

A.2.7

VERIFICA DI STABILITA' SEZIONE 1

CONDIZIONE DRENATA

SEZIONE DI VERIFICA N. 1



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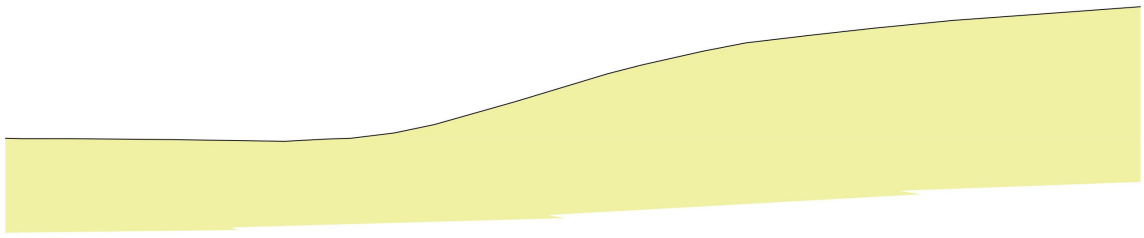

190

PICCHETTO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
DISTANZE PROGRESSIVE	0	3	7	11	28.5	48.5	55.5	60	67.5	74.5	88.5	104.5	110.5	121	128.5	139.5	150.5	164.5	184.5	197
DISTANZE PARZIALI		3	4	4	17.5	20	7	4.5	7.5	7	14	16	6	10.5	7.5	11	11	14	20	12.5
QUOTE	222.67	222.62	222.56	222.57	222.45	222.12	222.53	222.7	223.58	225.03	229.05	233.81	235.35	237.76	239.15	240.51	241.72	243.08	244.52	245.42

Report elaborazioni

SSAP 5.0.2 - Slope Stability Analysis Program (1991,2021)
WWW.SSAP.EU
Build No. 11893
BY
Dr. Geol. LORENZO BORSELLI *,**
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** Gia' Ricercatore CNR-IRPI fino a Luglio 2011

Ultima Revisione struttura tabelle del report: 21 Febbraio 2021

File report: C:\SSAP2010\CRACO SERRACARUSO CAP\VERIFICA 1\DRENATA\MORG\MORG.txt
Data: 18/11/2021
Localita' :
Descrizione:
Modello pendio: DRENATA.mod

---------- PARAMETRI DEL MODELLO DEL PENDIO ----------

__ PARAMETRI GEOMETRICI - Coordinate X Y (in m) __

SUP T.		SUP 2		SUP 3		SUP 4	
X	Y	X	Y	X	Y	X	Y
0.00	222.67	-	-	-	-	-	-
3.00	222.62	-	-	-	-	-	-
7.00	222.56	-	-	-	-	-	-
11.00	222.57	-	-	-	-	-	-
28.50	222.45	-	-	-	-	-	-
48.50	222.12	-	-	-	-	-	-
55.50	222.53	-	-	-	-	-	-
60.00	222.70	-	-	-	-	-	-
67.50	223.58	-	-	-	-	-	-
74.50	225.03	-	-	-	-	-	-
88.50	229.05	-	-	-	-	-	-
104.50	233.81	-	-	-	-	-	-
110.50	235.35	-	-	-	-	-	-
121.00	237.76	-	-	-	-	-	-
128.50	239.15	-	-	-	-	-	-
139.50	240.51	-	-	-	-	-	-
150.50	241.72	-	-	-	-	-	-
164.50	243.08	-	-	-	-	-	-
184.50	244.52	-	-	-	-	-	-
197.00	245.42	-	-	-	-	-	-

ASSENZA DI FALDA

------- PARAMETRI GEOMECCANICI -------

	fi`	C`	Cu	Gamm	Gamm_sat	STR_IDX	sgci	GSI	mi	D
STRATO 1	26.00	19.50	0.00	20.00	22.00	2.279	0.00	0.00	0.00	0.00

LEGENDA: fi`_____ Angolo di attrito interno efficace(in gradi)
C` _____ Coesione efficace (in Kpa)
Cu _____ Resistenza al taglio Non drenata (in Kpa)
Gamm _____ Peso di volume terreno fuori falda (in KN/m^3)
Gamm_sat __ Peso di volume terreno immerso (in KN/m^3)
STR_IDX ___ Indice di resistenza (usato in solo in 'SNIFF SEARCH) (adimensionale)
---- SOLO Per AMMASSI ROCCIOSI FRATTURATI - Parametri Criterio di Rottura di Hoek (2002)-
sigci _____ Resistenza Compressione Uniassiale Roccia Intatta (in MPa)
GSI _____ Geological Strenght Index ammasso(adimensionale)

mi _____ Indice litologico ammasso(adimensionale)
D _____ Fattore di disturbo ammasso(adimensionale)
Fattore di riduzione NTC2018: gammaPHI=1.25 e gammaC=1.25 - DISATTIVATO (solo per ROCCE)
Uso CRITERIO DI ROTTURA Hoek et al.(2002,2006) - non-lineare - Generalizzato, secondo Lei et al.(2016)

---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
MOTORE DI RICERCA: RANDOM SEARCH - Siegel (1981)
FILTRAGGIO SUPERFICI : ATTIVATO
COORDINATE X1,X2,Y OSTACOLO : 0.00 0.00 0.00
LUNGHEZZA MEDIA SEGMENTI (m)*: 7.9 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 3.94 181.24
LIVELLO MINIMO CONSIDERATO (Ymin): 201.15
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 23.64 193.06
TOTALE SUPERFICI GENERATE : 10000
*NOTA IMPORTANTE: La lunghezza media dei segmenti non viene cosiderata nel caso
di uso del motore di recerca NEW RANOM SEARCH

---------- INFORMAZIONI PARAMETRI DI CALCOLO ----------
METODO DI CALCOLO : MORGENSTERN - PRICE (Morgenstern & Price, 1965)
METODO DI ESPLORAZIONE CAMPO VALORI (lambda0,Fs0) ADOTTATO : A (rapido)
COEFFICIENTE SISMICO UTILIZZATO Kh : 0.0350
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0175
COEFFICIENTE c=Kv/Kh UTILIZZATO : 0.5000
FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00

N.B. Le forze orizzontali addizionali in testa e alla base sono poste uguali a 0
durante le tutte le verifiche globali.
I valori >0 impostati dall'utente sono utilizzati solo in caso di verifica singola

---------- RISULTATO FINALE ELABORAZIONI ----------
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* DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *

Fattore di sicurezza (FS) 2.3249 - Min. - X Y Lambda= 0.2968

65.15	223.30
70.76	220.09
73.31	218.71
74.94	217.96
76.23	217.50
77.57	217.20
78.71	217.06
80.00	217.04
81.43	217.13
83.29	217.36
84.93	217.59
86.45	217.82
87.91	218.06
89.36	218.33
90.78	218.61
92.23	218.92
93.71	219.26
95.27	219.65
96.76	220.03
98.22	220.42
99.65	220.83
101.10	221.26
102.54	221.70
103.99	222.16
105.48	222.66
107.03	223.19
108.51	223.72
109.96	224.26
111.39	224.81

112.85 225.38
114.29 225.98
115.77 226.61
117.30 227.29
118.95 228.04
120.41 228.75
121.81 229.51
123.15 230.30
124.57 231.22
126.08 232.29
127.83 233.62
130.39 235.69
132.04 237.06
132.04 239.59

Fattore di sicurezza (FS) 2.3353 - N.2 -- X Y Lambda= 0.2997
66.11 223.42
71.94 220.17
74.58 218.78
76.26 218.03
77.59 217.58
78.98 217.30
80.14 217.18
81.48 217.19
82.95 217.32
84.87 217.61
86.58 217.88
88.17 218.15
89.69 218.43
91.19 218.73
92.68 219.04
94.19 219.38
95.74 219.76
97.38 220.17
98.91 220.58
100.40 221.01
101.86 221.47
103.35 221.97
104.80 222.49
106.29 223.05
107.80 223.65
109.41 224.33
110.97 224.97
112.50 225.59
114.01 226.19
115.52 226.78
117.05 227.37
118.60 227.95
120.21 228.55
121.91 229.17
123.40 229.77
124.83 230.43
126.19 231.13
127.66 231.96
129.20 232.95
131.00 234.22
133.64 236.21
134.78 237.10
134.78 239.93

Fattore di sicurezza (FS) 2.3421 - N.3 -- X Y Lambda= 0.2923
63.78 223.14
68.73 220.47
71.06 219.28

72.61 218.58
73.89 218.09
75.15 217.72
76.30 217.47
77.55 217.29
78.92 217.18
80.61 217.11
82.04 217.10
83.36 217.13
84.60 217.22
85.89 217.36
87.10 217.55
88.37 217.80
89.69 218.11
91.17 218.50
92.59 218.88
93.96 219.26
95.31 219.64
96.64 220.02
97.97 220.41
99.32 220.81
100.68 221.22
102.07 221.64
103.41 222.07
104.73 222.51
106.04 222.96
107.37 223.43
108.68 223.91
110.00 224.41
111.34 224.94
112.72 225.50
114.08 226.05
115.42 226.60
116.77 227.16
118.10 227.72
119.45 228.29
120.82 228.87
122.23 229.47
123.69 230.10
125.01 230.72
126.28 231.37
127.51 232.06
128.81 232.85
130.19 233.77
131.80 234.93
134.13 236.70
134.72 237.16
134.72 239.92

Fattore di sicurezza (FS) 2.3421 - N.4 -- X Y Lambda= 0.2993
64.29 223.20
68.36 220.95
70.26 219.96
71.51 219.39
72.53 219.00
73.55 218.72
74.46 218.53
75.46 218.42
76.55 218.36
77.89 218.36
79.08 218.37
80.19 218.41
81.25 218.48
82.32 218.57
83.36 218.68

84.43 218.82
85.54 218.99
86.75 219.20
87.87 219.41
88.95 219.64
89.99 219.89
91.06 220.17
92.10 220.46
93.16 220.78
94.25 221.14
95.40 221.54
96.53 221.92
97.63 222.30
98.73 222.66
99.82 223.02
100.91 223.38
102.01 223.74
103.12 224.09
104.25 224.45
105.34 224.81
106.42 225.18
107.48 225.56
108.56 225.97
109.62 226.38
110.71 226.82
111.81 227.28
112.98 227.79
114.08 228.28
115.16 228.78
116.22 229.29
117.30 229.83
118.36 230.38
119.44 230.96
120.53 231.56
121.67 232.21
122.78 232.84
123.88 233.48
124.97 234.12
126.05 234.77
127.27 235.51
128.62 236.34
128.62 239.17

Fattore di sicurezza (FS) 2.3464 - N.5 -- X Y Lambda= 0.3047
66.25 223.43
70.56 220.79
72.53 219.64
73.82 218.99
74.84 218.57
75.89 218.27
76.80 218.09
77.83 218.00
78.97 217.98
80.44 218.04
81.69 218.11
82.84 218.22
83.91 218.36
85.02 218.54
86.07 218.75
87.16 219.00
88.29 219.30
89.55 219.66
90.73 220.02
91.88 220.37
93.01 220.74

94.13 221.11
95.25 221.49
96.37 221.89
97.51 222.30
98.68 222.73
99.83 223.16
100.97 223.58
102.11 223.99
103.24 224.40
104.38 224.80
105.52 225.20
106.66 225.61
107.82 226.01
108.96 226.39
110.09 226.77
111.21 227.14
112.35 227.50
113.48 227.86
114.63 228.22
115.81 228.57
117.03 228.94
118.16 229.30
119.26 229.68
120.33 230.09
121.44 230.54
122.51 231.02
123.61 231.53
124.75 232.10
125.98 232.75
127.16 233.37
128.30 234.00
129.43 234.63
130.55 235.27
131.81 236.00
133.21 236.85
133.78 237.19
133.78 239.80

Fattore di sicurezza (FS) 2.3473 - N.6 -- X Y Lambda= 0.3063
64.23 223.20
69.94 219.93
72.58 218.49
74.33 217.65
75.74 217.10
77.17 216.69
78.44 216.43
79.85 216.26
81.42 216.18
83.41 216.18
85.06 216.23
86.55 216.34
87.94 216.51
89.40 216.77
90.75 217.08
92.19 217.47
93.69 217.95
95.41 218.57
97.03 219.15
98.60 219.73
100.13 220.31
101.65 220.89
103.17 221.48
104.70 222.08
106.25 222.71
107.84 223.36

109.37 224.01
110.87 224.67
112.36 225.34
113.86 226.05
115.35 226.78
116.87 227.54
118.41 228.35
120.03 229.21
121.58 230.06
123.09 230.92
124.58 231.79
126.09 232.70
127.75 233.75
129.63 234.96
132.30 236.73
132.87 237.11
132.87 239.69

Fattore di sicurezza (FS) 2.3486 - N.7 -- X Y Lambda= 0.2974
63.11 223.07
69.16 219.67
71.93 218.19
73.73 217.36
75.18 216.83
76.66 216.46
77.94 216.26
79.37 216.17
80.93 216.18
82.92 216.31
84.69 216.45
86.34 216.60
87.92 216.77
89.49 216.97
91.04 217.19
92.63 217.44
94.28 217.73
96.03 218.06
97.64 218.40
99.20 218.77
100.72 219.17
102.28 219.62
103.79 220.10
105.36 220.64
106.98 221.23
108.74 221.92
110.37 222.58
111.96 223.26
113.51 223.96
115.08 224.70
116.62 225.46
118.20 226.27
119.83 227.13
121.56 228.09
123.18 229.01
124.76 229.95
126.30 230.91
127.88 231.92
129.60 233.08
131.56 234.46
134.35 236.48
135.54 237.35
135.54 240.02

Fattore di sicurezza (FS) 2.3495 - N.8 -- X Y Lambda= 0.3007

66.98 223.52
72.49 221.15
75.04 220.13
76.71 219.57
78.06 219.22
79.43 219.02
80.64 218.93
81.97 218.95
83.42 219.06
85.22 219.29
86.83 219.52
88.34 219.76
89.78 220.01
91.23 220.29
92.65 220.59
94.10 220.93
95.58 221.29
97.16 221.70
98.65 222.11
100.11 222.52
101.55 222.95
103.00 223.41
104.44 223.88
105.91 224.38
107.42 224.91
109.01 225.49
110.48 226.06
111.92 226.66
113.32 227.27
114.76 227.94
116.16 228.63
117.59 229.36
119.05 230.15
120.60 231.03
122.11 231.88
123.60 232.70
125.08 233.52
126.54 234.33
128.19 235.23
130.02 236.22
131.13 236.81
131.13 239.47

Fattore di sicurezza (FS) 2.3500 - N.9 -- X Y Lambda= 0.3023
65.73 223.37
70.36 221.24
72.54 220.29
74.01 219.73
75.23 219.34
76.42 219.06
77.51 218.88
78.70 218.75
79.97 218.68
81.52 218.67
82.86 218.68
84.11 218.74
85.30 218.82
86.53 218.95
87.70 219.12
88.92 219.32
90.19 219.58
91.59 219.89
92.89 220.20
94.15 220.52
95.39 220.85

96.63 221.20
97.86 221.57
99.11 221.96
100.38 222.38
101.73 222.84
103.00 223.30
104.25 223.76
105.48 224.24
106.73 224.74
107.95 225.25
109.19 225.79
110.44 226.36
111.74 226.96
113.02 227.56
114.30 228.15
115.57 228.74
116.83 229.33
118.10 229.92
119.38 230.52
120.67 231.12
121.98 231.74
123.23 232.34
124.46 232.97
125.67 233.61
126.91 234.29
128.28 235.08
129.82 236.01
130.93 236.69
130.93 239.45

Fattore di sicurezza (FS) 2.3523 - N.10 -- X Y Lambda= 0.3024
66.33 223.44
71.89 220.87
74.48 219.75
76.18 219.12
77.57 218.71
78.97 218.44
80.20 218.29
81.57 218.23
83.04 218.27
84.87 218.40
86.49 218.54
88.01 218.70
89.47 218.89
90.93 219.10
92.36 219.35
93.84 219.62
95.36 219.94
97.00 220.31
98.52 220.68
99.98 221.07
101.40 221.48
102.87 221.95
104.29 222.43
105.76 222.97
107.27 223.55
108.92 224.22
110.44 224.87
111.91 225.54
113.34 226.22
114.80 226.96
116.22 227.71
117.68 228.51
119.16 229.37
120.72 230.31

122.26	231.22
123.77	232.12
125.27	233.00
126.75	233.87
128.43	234.84
130.29	235.92
131.96	236.89
131.96	239.58

---------- ANALISI DEFICIT DI RESISTENZA ----------
DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *
Analisi Deficit in riferimento a FS(progetto) = 1.100

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	2.325	7314.6	3146.1	3853.8	Surplus
2	2.335	7451.6	3190.8	3941.7	Surplus
3	2.342	7655.7	3268.8	4060.0	Surplus
4	2.342	6030.2	2574.7	3198.0	Surplus
5	2.346	6436.1	2743.0	3418.9	Surplus
6	2.347	7791.7	3319.5	4140.3	Surplus
7	2.349	8627.9	3673.7	4586.8	Surplus
8	2.349	6041.8	2571.5	3213.1	Surplus
9	2.350	6225.2	2649.0	3311.3	Surplus
10	2.352	6741.8	2866.0	3589.2	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 3198.0

Note: FTR --> Forza totale Resistente lungo la superficie
di scivolamento
FTA --> Forza totale Agente lungo la superficie
di scivolamento

IMPORTANTE! : Il Deficit o il Surplus di resistenza viene espresso in kN
per metro di LARGHEZZA rispetto al fronte della scarpata

TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (°)	W (kN/m)	ru (-)	U (kPa)	phi' (°)	(c',Cu) (kPa)
65.149	0.552	-29.81	2.14	0.00	0.00	26.00	19.50
65.701	0.552	-29.81	6.41	0.00	0.00	26.00	19.50
66.253	0.552	-29.81	10.69	0.00	0.00	26.00	19.50
66.804	0.552	-29.81	14.96	0.00	0.00	26.00	19.50
67.356	0.144	-29.81	4.61	0.00	0.00	26.00	19.50
67.500	0.552	-29.81	20.63	0.00	0.00	26.00	19.50
68.052	0.552	-29.81	25.46	0.00	0.00	26.00	19.50
68.603	0.552	-29.81	30.29	0.00	0.00	26.00	19.50
69.155	0.552	-29.81	35.12	0.00	0.00	26.00	19.50
69.707	0.552	-29.81	39.95	0.00	0.00	26.00	19.50
70.258	0.505	-29.81	40.78	0.00	0.00	26.00	19.50
70.763	0.552	-28.38	49.10	0.00	0.00	26.00	19.50
71.315	0.552	-28.38	53.73	0.00	0.00	26.00	19.50
71.866	0.552	-28.38	58.36	0.00	0.00	26.00	19.50
72.418	0.552	-28.38	62.99	0.00	0.00	26.00	19.50
72.969	0.339	-28.38	41.00	0.00	0.00	26.00	19.50
73.308	0.552	-24.81	70.22	0.00	0.00	26.00	19.50
73.860	0.552	-24.81	74.36	0.00	0.00	26.00	19.50
74.412	0.088	-24.81	12.28	0.00	0.00	26.00	19.50
74.500	0.443	-24.81	63.45	0.00	0.00	26.00	19.50
74.943	0.552	-19.63	82.82	0.00	0.00	26.00	19.50
75.495	0.552	-19.63	86.81	0.00	0.00	26.00	19.50

76.047	0.184	-19.63	29.83	0.00	0.00	26.00	19.50
76.231	0.552	-12.68	91.72	0.00	0.00	26.00	19.50
76.782	0.552	-12.68	94.89	0.00	0.00	26.00	19.50
77.334	0.237	-12.68	41.80	0.00	0.00	26.00	19.50
77.571	0.552	-6.93	99.10	0.00	0.00	26.00	19.50
78.123	0.552	-6.93	101.63	0.00	0.00	26.00	19.50
78.674	0.032	-6.93	5.99	0.00	0.00	26.00	19.50
78.707	0.552	-0.89	103.98	0.00	0.00	26.00	19.50
79.258	0.552	-0.89	105.86	0.00	0.00	26.00	19.50
79.810	0.188	-0.89	36.47	0.00	0.00	26.00	19.50
79.998	0.552	3.85	108.11	0.00	0.00	26.00	19.50
80.549	0.552	3.85	109.48	0.00	0.00	26.00	19.50
81.101	0.330	3.85	66.05	0.00	0.00	26.00	19.50
81.430	0.552	7.01	111.48	0.00	0.00	26.00	19.50
81.982	0.552	7.01	112.50	0.00	0.00	26.00	19.50
82.534	0.552	7.01	113.51	0.00	0.00	26.00	19.50
83.085	0.201	7.01	41.69	0.00	0.00	26.00	19.50
83.287	0.552	7.73	114.86	0.00	0.00	26.00	19.50
83.838	0.552	7.73	115.80	0.00	0.00	26.00	19.50
84.390	0.540	7.73	114.28	0.00	0.00	26.00	19.50
84.930	0.552	8.58	117.61	0.00	0.00	26.00	19.50
85.482	0.552	8.58	118.45	0.00	0.00	26.00	19.50
86.033	0.420	8.58	90.82	0.00	0.00	26.00	19.50
86.454	0.552	9.48	119.89	0.00	0.00	26.00	19.50
87.005	0.552	9.48	120.63	0.00	0.00	26.00	19.50
87.557	0.354	9.48	77.73	0.00	0.00	26.00	19.50
87.911	0.552	10.43	121.80	0.00	0.00	26.00	19.50
88.462	0.038	10.43	8.36	0.00	0.00	26.00	19.50
88.500	0.552	10.43	122.51	0.00	0.00	26.00	19.50
89.052	0.306	10.43	68.29	0.00	0.00	26.00	19.50
89.358	0.552	11.31	123.56	0.00	0.00	26.00	19.50
89.909	0.552	11.31	124.16	0.00	0.00	26.00	19.50
90.461	0.317	11.31	71.71	0.00	0.00	26.00	19.50
90.778	0.552	12.19	125.06	0.00	0.00	26.00	19.50
91.330	0.552	12.19	125.57	0.00	0.00	26.00	19.50
91.882	0.344	12.19	78.57	0.00	0.00	26.00	19.50
92.226	0.552	13.02	126.34	0.00	0.00	26.00	19.50
92.777	0.552	13.02	126.75	0.00	0.00	26.00	19.50
93.329	0.377	13.02	86.77	0.00	0.00	26.00	19.50
93.706	0.552	13.79	127.39	0.00	0.00	26.00	19.50
94.257	0.552	13.79	127.72	0.00	0.00	26.00	19.50
94.809	0.458	13.79	106.21	0.00	0.00	26.00	19.50
95.267	0.552	14.40	128.27	0.00	0.00	26.00	19.50
95.818	0.552	14.40	128.52	0.00	0.00	26.00	19.50
96.370	0.387	14.40	90.34	0.00	0.00	26.00	19.50
96.757	0.552	15.06	128.92	0.00	0.00	26.00	19.50
97.309	0.552	15.06	129.09	0.00	0.00	26.00	19.50
97.860	0.355	15.06	83.25	0.00	0.00	26.00	19.50
98.216	0.552	15.74	129.34	0.00	0.00	26.00	19.50
98.767	0.552	15.74	129.44	0.00	0.00	26.00	19.50
99.319	0.333	15.74	78.10	0.00	0.00	26.00	19.50
99.652	0.552	16.42	129.55	0.00	0.00	26.00	19.50
100.203	0.552	16.42	129.57	0.00	0.00	26.00	19.50
100.755	0.348	16.42	81.72	0.00	0.00	26.00	19.50
101.103	0.552	17.09	129.56	0.00	0.00	26.00	19.50
101.654	0.552	17.09	129.50	0.00	0.00	26.00	19.50
102.206	0.332	17.09	77.80	0.00	0.00	26.00	19.50
102.538	0.552	17.75	129.36	0.00	0.00	26.00	19.50
103.089	0.552	17.75	129.22	0.00	0.00	26.00	19.50
103.641	0.352	17.75	82.47	0.00	0.00	26.00	19.50
103.993	0.507	18.39	118.49	0.00	0.00	26.00	19.50
104.500	0.552	18.39	128.63	0.00	0.00	26.00	19.50
105.052	0.426	18.39	99.01	0.00	0.00	26.00	19.50
105.478	0.552	18.98	127.76	0.00	0.00	26.00	19.50
106.029	0.552	18.98	127.22	0.00	0.00	26.00	19.50
106.581	0.446	18.98	102.43	0.00	0.00	26.00	19.50

107.027	0.552	19.63	126.20	0.00	0.00	26.00	19.50
107.578	0.552	19.63	125.58	0.00	0.00	26.00	19.50
108.130	0.379	19.63	85.84	0.00	0.00	26.00	19.50
108.509	0.552	20.32	124.50	0.00	0.00	26.00	19.50
109.060	0.552	20.32	123.79	0.00	0.00	26.00	19.50
109.612	0.350	20.32	78.27	0.00	0.00	26.00	19.50
109.962	0.538	21.03	119.50	0.00	0.00	26.00	19.50
110.500	0.552	21.03	121.74	0.00	0.00	26.00	19.50
111.052	0.343	21.03	75.16	0.00	0.00	26.00	19.50
111.394	0.552	21.73	120.14	0.00	0.00	26.00	19.50
111.946	0.552	21.73	119.10	0.00	0.00	26.00	19.50
112.498	0.347	21.73	74.46	0.00	0.00	26.00	19.50
112.845	0.552	22.45	117.34	0.00	0.00	26.00	19.50
113.397	0.552	22.45	116.21	0.00	0.00	26.00	19.50
113.948	0.342	22.45	71.38	0.00	0.00	26.00	19.50
114.290	0.552	23.14	114.32	0.00	0.00	26.00	19.50
114.842	0.552	23.14	113.10	0.00	0.00	26.00	19.50
115.393	0.376	23.14	76.30	0.00	0.00	26.00	19.50
115.769	0.552	23.80	111.00	0.00	0.00	26.00	19.50
116.320	0.552	23.80	109.69	0.00	0.00	26.00	19.50
116.872	0.432	23.80	85.01	0.00	0.00	26.00	19.50
117.304	0.552	24.39	107.31	0.00	0.00	26.00	19.50
117.856	0.552	24.39	105.93	0.00	0.00	26.00	19.50
118.407	0.541	24.39	102.52	0.00	0.00	26.00	19.50
118.948	0.552	26.24	103.06	0.00	0.00	26.00	19.50
119.500	0.552	26.24	101.43	0.00	0.00	26.00	19.50
120.052	0.354	26.24	64.20	0.00	0.00	26.00	19.50
120.405	0.552	28.36	98.61	0.00	0.00	26.00	19.50
120.957	0.043	28.36	7.58	0.00	0.00	26.00	19.50
121.000	0.552	28.36	96.40	0.00	0.00	26.00	19.50
121.552	0.255	28.36	43.85	0.00	0.00	26.00	19.50
121.807	0.552	30.60	93.03	0.00	0.00	26.00	19.50
122.358	0.552	30.60	90.51	0.00	0.00	26.00	19.50
122.910	0.236	30.60	37.95	0.00	0.00	26.00	19.50
123.146	0.552	32.72	86.76	0.00	0.00	26.00	19.50
123.698	0.552	32.72	83.93	0.00	0.00	26.00	19.50
124.249	0.320	32.72	47.41	0.00	0.00	26.00	19.50
124.569	0.552	35.32	79.25	0.00	0.00	26.00	19.50
125.121	0.552	35.32	76.01	0.00	0.00	26.00	19.50
125.673	0.404	35.32	53.68	0.00	0.00	26.00	19.50
126.077	0.552	37.31	70.23	0.00	0.00	26.00	19.50
126.629	0.552	37.31	66.66	0.00	0.00	26.00	19.50
127.181	0.552	37.31	63.09	0.00	0.00	26.00	19.50
127.732	0.099	37.31	10.97	0.00	0.00	26.00	19.50
127.831	0.552	38.96	58.73	0.00	0.00	26.00	19.50
128.383	0.117	38.96	11.96	0.00	0.00	26.00	19.50
128.500	0.552	38.96	53.86	0.00	0.00	26.00	19.50
129.052	0.552	38.96	49.62	0.00	0.00	26.00	19.50
129.603	0.552	38.96	45.38	0.00	0.00	26.00	19.50
130.155	0.231	38.96	17.77	0.00	0.00	26.00	19.50
130.386	0.552	39.75	39.29	0.00	0.00	26.00	19.50
130.938	0.552	39.75	34.90	0.00	0.00	26.00	19.50
131.490	0.552	39.75	30.52	0.00	0.00	26.00	19.50

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
alpha(°) : Angolo pendenza base concio
W(kN/m) : Forza peso concio
ru(-) : Coefficiente locale pressione interstiziale
U(kPa) : Pressione totale dei pori base concio
phi'(°) : Angolo di attrito efficace base concio
c'/Cu (kPa) : Coesione efficace o Resistenza al taglio in condizioni non drenate

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TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	ht (m)	yt (m)	yt' (--)	E(x) (kN/m)	T(x) (kN/m)	E' (kN)	rho(x) (--)	FS_qFEM (--)	FS_srmFEM (--)		
65.149	0.000	223.304	-0.398	0.0000000000E+000	0.0000000000E+000	7.0027569974E-001	0.077	50.000	50.000		
65.701	0.096	223.084	-0.398	1.4063077966E+000	2.5917466847E-003	4.3983784226E+000	0.077	50.000	50.000		
66.253	0.193	222.865	-0.424	4.8526326513E+000	5.4335050626E-002	1.0107746052E+001	0.077	32.785	35.083		
66.804	0.260	222.616	-0.383	1.2557958203E+001	3.2084767298E-001	1.3558591065E+001	0.077	16.456	17.426		
67.356	0.403	222.443	-0.310	1.9811523266E+001	8.1848357776E-001	1.3888010092E+001	0.077	12.767	13.116		
67.500	0.443	222.400	-0.307	2.1840969503E+001	1.0379036779E+000	1.4616535857E+001	0.077	12.299	12.424		
68.052	0.588	222.229	-0.311	3.1034616013E+001	2.4211044603E+000	2.1731427070E+001	0.102	11.276	10.300		
68.603	0.731	222.057	-0.307	4.5816767496E+001	4.9353751069E+000	3.4336967160E+001	0.162	10.992	8.727		
69.155	0.881	221.890	-0.308	6.8917824773E+001	8.8883521722E+000	4.5451368538E+001	0.229	11.045	7.509		
69.707	1.024	221.717	-0.312	9.5962246994E+001	1.3516102303E+001	5.3519527525E+001	0.281	10.931	6.660		
70.258	1.169	221.546	-0.314	1.2796472383E+002	1.9076378686E+001	6.9269904394E+001	0.326	10.790	6.010		
70.763	1.297	221.385	-0.315	1.6812327845E+002	2.6165721975E+001	8.5784233740E+001	0.373	10.550	5.490		
71.315	1.424	221.214	-0.291	2.1919283356E+002	3.5344819597E+001	9.4920006609E+001	0.419	10.133	5.034		
71.866	1.572	221.064	-0.258	2.7284640117E+002	4.5231663185E+001	1.0197818360E+002	0.456	9.593	4.696		
72.418	1.736	220.930	-0.230	3.3170308528E+002	5.6517857964E+001	1.0752686790E+002	0.492	8.832	4.420		
72.969	1.915	220.811	-0.207	3.9147839232E+002	6.8352117802E+001	1.0774102524E+002	0.522	8.002	4.201		
73.308	2.032	220.745	-0.180	4.2787332112E+002	7.5758209278E+001	1.0929509113E+002	0.539	7.507	4.091		
73.860	2.193	220.650	-0.157	4.8990094460E+002	8.9019003017E+001	1.0991735287E+002	0.568	6.672	3.928		
74.412	2.369	220.572	-0.138	5.4914268092E+002	1.0223726583E+002	9.7655657093E+001	0.593	5.966	3.796		
74.500	2.400	220.562	-0.112	5.5762554898E+002	1.0419382937E+002	9.8507053356E+001	0.597	5.866	3.779		
74.943	2.556	220.513	-0.097	6.0665699106E+002	1.1601094634E+002	1.0853597519E+002	0.618	5.315	3.683		
75.495	2.705	220.466	-0.071	6.6510802981E+002	1.3077418400E+002	1.0398155547E+002	0.645	4.752	3.577		
76.047	2.870	220.434	-0.051	7.2137751821E+002	1.4573181561E+002	9.8226646841E+001	0.669	4.294	3.482		
76.231	2.930	220.428	-0.022	7.3921334813E+002	1.5068667366E+002	9.6455668417E+001	0.678	4.157	3.451		
76.782	3.044	220.418	-0.006	7.9157598900E+002	1.6568031925E+002	9.1902102805E+001	0.703	3.809	3.364		
77.334	3.171	220.421	0.015	8.4060688501E+002	1.8035919306E+002	8.3894678976E+001	0.726	3.533	3.285		
77.571	3.233	220.429	0.044	8.6000982707E+002	1.8647941216E+002	8.0128570366E+001	0.736	3.431	3.252		
78.123	3.326	220.456	0.059	9.0213465055E+002	2.0017366315E+002	7.2691865066E+001	0.758	3.231	3.180		
78.674	3.432	220.494	0.070	9.4020913781E+002	2.1313509766E+002	5.5123404082E+001	0.778	3.071	3.113		
78.707	3.439	220.497	0.097	9.4195237156E+002	2.1376344750E+002	5.4261644581E+001	0.778	3.064	3.110		
79.258	3.501	220.551	0.111	9.7138079030E+002	2.2468512375E+002	5.1675970021E+001	0.796	2.950	3.052		
79.810	3.579	220.620	0.129	9.9896531481E+002	2.3551964001E+002	4.7688457845E+001	0.814	2.849	2.993		
79.998	3.608	220.646	0.147	1.0077742715E+003	2.3911579144E+002	4.5359592004E+001	0.820	2.817	2.973		
80.549	3.653	220.729	0.157	1.0303009815E+003	2.4872081544E+002	3.8092628129E+001	0.836	2.740	2.920		
81.101	3.707	220.819	0.169	1.0498010171E+003	2.5753536747E+002	3.4075902541E+001	0.851	2.675	2.870		
81.430	3.743	220.878	0.182	1.0607800772E+003	2.6267109116E+002	3.1286505164E+001	0.860	2.639	2.841		
81.982	3.777	220.980	0.195	1.0761656623E+003	2.7031650112E+002	2.7086478424E+001	0.874	2.588	2.795		
82.534	3.823	221.094	0.207	1.0906639837E+003	2.7784090788E+002	2.4547542010E+001	0.887	2.542	2.750		
83.085	3.870	221.208	0.208	1.1032484169E+003	2.8462198710E+002	2.0974559593E+001	0.899	2.502	2.708		
83.287	3.887	221.250	0.213	1.1073368991E+003	2.8688101930E+002	2.0004363014E+001	0.903	2.489	2.693		
83.838	3.931	221.368	0.218	1.1179199827E+003	2.9284790785E+002	1.8316004671E+001	0.913	2.457	2.655		
84.390	3.978	221.490	0.233	1.1275445379E+003	2.9837972082E+002	1.7314405635E+001	0.923	2.429	2.619		
84.930	4.037	221.623	0.250	1.1368255668E+003	3.0381404297E+002	1.6694725610E+001	0.932	2.401	2.582		
85.482	4.094	221.764	0.247	1.1457591299E+003	3.0912423898E+002	1.4972590672E+001	0.941	2.375	2.546		
86.033	4.143	221.895	0.234	1.1533444916E+003	3.1367328312E+002	1.2821974132E+001	0.948	2.353	2.515		
86.454	4.175	221.991	0.235	1.1584361278E+003	3.1676492548E+002	1.1775165931E+001	0.953	2.338	2.494		
87.005	4.215	222.123	0.232	1.1646861093E+003	3.2066306248E+002	1.0349028754E+001	0.960	2.318	2.467		
87.557	4.247	222.247	0.220	1.1698539800E+003	3.2399152586E+002	8.3337357924E+000	0.965	2.301	2.444		
87.911	4.263	222.322	0.214	1.1725666474E+003	3.2581084974E+002	7.2073811120E+000	0.968	2.291	2.431		
88.462	4.280	222.441	0.215	1.1761439743E+003	3.2838590297E+002	6.1462033721E+000	0.972	2.276	2.412		
88.500	4.281	222.449	0.215	1.1763752880E+003	3.2855690211E+002	6.0542789704E+000	0.972	2.276	2.411		
89.052	4.298	222.567	0.214	1.1791614419E+003	3.3078960330E+002	4.3807947484E+000	0.975	2.262	2.393		
89.358	4.307	222.632	0.227	1.1803887577E+003	3.3189310003E+002	3.7881961430E+000	0.977	2.254	2.384		
89.909	4.325	222.761	0.239	1.1822589594E+003	3.3387613768E+002	2.8782584817E+000	0.980	2.240	2.365		
90.461	4.349	222.896	0.241	1.1835642760E+003	3.3569184698E+002	1.7014613826E+000	0.984	2.226	2.346		
90.778	4.361	222.971	0.251	1.1839829135E+003	3.3659413557E+002	9.7036174320E-001	0.985	2.218	2.336		
91.330	4.385	223.114	0.265	1.1841839914E+003	3.3807870532E+002	-1.8390019889E-001	0.988	2.203	2.316		
91.882	4.415	223.264	0.270	1.1837800205E+003	3.3940001178E+002	-1.3268720100E+000	0.991	2.189	2.296		
92.226	4.433	223.355	0.276	1.1831959308E+003	3.4007453860E+002	-2.2050706541E+000	0.993	2.180	2.283		
92.777	4.461	223.511	0.279	1.1815307607E+003	3.4094520462E+002	-3.6386172421E+000	0.996	2.165	2.262		
93.329	4.485	223.663	0.269	1.1791815256E+003	3.4147577916E+002	-4.7216087976E+000	0.998	2.152	2.241		

93.706	4.496	223.761	0.272	1.1772841799E+003	3.4165055956E+002	-5.6008991174E+000	0.999	2.143	2.228
94.257	4.515	223.915	0.284	1.1737394543E+003	3.4166384112E+002	-6.9932616220E+000	1.000	2.131	2.207
94.809	4.538	224.074	0.280	1.1695686706E+003	3.4142204974E+002	-7.8594007501E+000	1.002	2.118	2.187
95.267	4.551	224.198	0.283	1.1658582439E+003	3.4101667657E+002	-8.8334006988E+000	1.002	2.109	2.171
95.818	4.570	224.359	0.287	1.1605025502E+003	3.4022640648E+002	-1.0100913834E+001	1.002	2.097	2.152
96.370	4.584	224.515	0.279	1.1547141313E+003	3.3921180329E+002	-1.0606939024E+001	1.003	2.086	2.133
96.757	4.590	224.621	0.277	1.1505773740E+003	3.3838796077E+002	-1.1340390068E+001	1.002	2.079	2.121
97.309	4.597	224.776	0.280	1.1438077633E+003	3.3691532784E+002	-1.2591910150E+001	1.002	2.068	2.104
97.860	4.603	224.930	0.280	1.1366850008E+003	3.3525331129E+002	-1.2938114487E+001	1.001	2.059	2.089
98.216	4.607	225.030	0.285	1.1320814091E+003	3.3411704314E+002	-1.3643158089E+001	1.000	2.052	2.079
98.767	4.610	225.189	0.288	1.1239659576E+003	3.3202323365E+002	-1.5069482848E+001	0.999	2.043	2.064
99.319	4.614	225.348	0.288	1.1154555853E+003	3.2974315287E+002	-1.5411629591E+001	0.997	2.033	2.050
99.652	4.616	225.444	0.293	1.1103323250E+003	3.2832682890E+002	-1.6130591855E+001	0.996	2.028	2.042
100.203	4.617	225.607	0.296	1.1007676128E+003	3.2561045474E+002	-1.7828252180E+001	0.994	2.019	2.029
100.755	4.617	225.770	0.296	1.0906628127E+003	3.2266472692E+002	-1.8248715748E+001	0.991	2.010	2.016
101.103	4.618	225.873	0.300	1.0843299772E+003	3.2077530413E+002	-1.8798664606E+001	0.989	2.005	2.009
101.654	4.615	226.040	0.303	1.0734407117E+003	3.1746018309E+002	-2.0164185626E+001	0.986	1.997	1.997
102.206	4.613	226.208	0.298	1.0620832816E+003	3.1392713213E+002	-2.0212130723E+001	0.982	1.989	1.986
102.538	4.607	226.303	0.295	1.0554572166E+003	3.1182552436E+002	-2.0698756509E+001	0.980	1.985	1.980
103.089	4.595	226.468	0.300	1.0433846889E+003	3.0791411190E+002	-2.2366180470E+001	0.976	1.978	1.970
103.641	4.585	226.635	0.294	1.0307811094E+003	3.0374134785E+002	-2.2347168802E+001	0.971	1.972	1.960
103.993	4.572	226.734	0.293	1.0230190964E+003	3.0111999685E+002	-2.2942914399E+001	0.968	1.968	1.955
104.500	4.556	226.887	0.304	1.0107232807E+003	2.9688178097E+002	-2.4859345657E+001	0.963	1.963	1.948
105.052	4.542	227.056	0.301	9.9664977708E+002	2.9193590638E+002	-2.5239361623E+001	0.957	1.958	1.940
105.478	4.525	227.181	0.304	9.8598787517E+002	2.8812083166E+002	-2.6060200552E+001	0.952	1.955	1.935
106.029	4.508	227.353	0.315	9.7087519580E+002	2.8263324708E+002	-2.7932538198E+001	0.945	1.951	1.928
106.581	4.493	227.528	0.309	9.5517052980E+002	2.7686642989E+002	-2.7853341615E+001	0.938	1.948	1.922
107.027	4.472	227.661	0.308	9.4297429881E+002	2.7234585336E+002	-2.8435340275E+001	0.932	1.945	1.919
107.578	4.451	227.836	0.315	9.2655133936E+002	2.6623698398E+002	-2.9886057442E+001	0.923	1.942	1.915
108.130	4.427	228.009	0.305	9.1000167931E+002	2.6007054533E+002	-2.9158021690E+001	0.914	1.940	1.912
108.509	4.403	228.120	0.303	8.9918051973E+002	2.5603952606E+002	-2.9429921927E+001	0.908	1.939	1.910
109.060	4.369	228.291	0.307	8.8226234457E+002	2.4975610693E+002	-3.0685495921E+001	0.899	1.938	1.909
109.612	4.333	228.459	0.298	8.6532589761E+002	2.4348682380E+002	-2.9938632181E+001	0.889	1.937	1.909
109.962	4.304	228.560	0.300	8.5500557846E+002	2.3968175544E+002	-3.0482210353E+001	0.884	1.937	1.910
110.500	4.263	228.726	0.308	8.3776741774E+002	2.3334940198E+002	-3.2217887843E+001	0.874	1.937	1.912
111.052	4.221	228.895	0.302	8.1990566853E+002	2.2681423420E+002	-3.1675968336E+001	0.864	1.938	1.915
111.394	4.189	228.996	0.305	8.0919809044E+002	2.2291383623E+002	-3.2202461026E+001	0.858	1.939	1.917
111.946	4.142	229.169	0.314	7.9057848874E+002	2.1616181101E+002	-3.4000055716E+001	0.847	1.940	1.921
112.498	4.096	229.342	0.308	7.7168658855E+002	2.0934331104E+002	-3.3292426706E+001	0.836	1.943	1.926
112.845	4.061	229.446	0.309	7.6033044608E+002	2.0526592010E+002	-3.3548138376E+001	0.829	1.944	1.929
113.397	4.008	229.620	0.319	7.4107347770E+002	1.9838229982E+002	-3.5220515157E+001	0.817	1.947	1.933
113.948	3.957	229.797	0.313	7.2147243856E+002	1.9139325324E+002	-3.4235947365E+001	0.805	1.951	1.938
114.290	3.919	229.900	0.310	7.1005386444E+002	1.8733380335E+002	-3.4061231036E+001	0.798	1.953	1.940
114.842	3.857	230.074	0.320	6.9070487760E+002	1.8044905755E+002	-3.5569893167E+001	0.785	1.957	1.944
115.393	3.800	230.253	0.322	6.7081039596E+002	1.7334853838E+002	-3.5736705912E+001	0.771	1.960	1.946
115.769	3.759	230.373	0.323	6.5747169071E+002	1.6857607449E+002	-3.5829259147E+001	0.762	1.962	1.947
116.320	3.696	230.553	0.337	6.3745116666E+002	1.6140621702E+002	-3.7520382819E+001	0.747	1.964	1.948
116.872	3.645	230.745	0.361	6.1607629057E+002	1.5374295169E+002	-4.0566718369E+001	0.730	1.966	1.948
117.304	3.618	230.908	0.383	5.9792931850E+002	1.4729907477E+002	-4.2479787503E+001	0.715	1.965	1.947
117.856	3.581	231.122	0.388	5.7415202468E+002	1.3894952905E+002	-4.3350685672E+001	0.694	1.964	1.947
118.407	3.546	231.337	0.378	5.5010147548E+002	1.3065076708E+002	-4.2322172425E+001	0.673	1.961	1.948
118.948	3.499	231.535	0.372	5.2788583714E+002	1.2317393326E+002	-4.1875240846E+001	0.654	1.957	1.950
119.500	3.435	231.743	0.364	5.0433326738E+002	1.1553930701E+002	-4.1238730067E+001	0.634	1.953	1.955
120.052	3.356	231.936	0.349	4.8238806755E+002	1.0867895243E+002	-3.9701270655E+001	0.616	1.949	1.961
120.405	3.305	232.059	0.347	4.6835846334E+002	1.0441637476E+002	-3.9708833118E+001	0.605	1.947	1.966
120.957	3.199	232.251	0.346	4.4640258798E+002	9.7958686479E+001	-3.7382180814E+001	0.588	1.944	1.975
121.000	3.189	232.265	0.338	4.4480759944E+002	9.7496187644E+001	-3.7318007056E+001	0.587	1.943	1.976
121.552	3.078	232.451	0.343	4.2334251538E+002	9.1402874977E+001	-3.9954673609E+001	0.571	1.941	1.987
121.807	3.031	232.541	0.362	4.1302458551E+002	8.8522714340E+001	-4.0869065146E+001	0.564	1.940	1.992
122.358	2.907	232.743	0.374	3.8996457580E+002	8.2166944480E+001	-4.2435090884E+001	0.546	1.939	2.005
122.910	2.790	232.954	0.383	3.6620689776E+002	7.5693728200E+001	-4.3371290398E+001	0.527	1.939	2.018
123.146	2.742	233.045	0.404	3.5594283165E+002	7.2910928907E+001	-4.4088593054E+001	0.519	1.939	2.023
123.698	2.615	233.272	0.446	3.3086434945E+002	6.6151927814E+001	-4.8619973871E+001	0.497	1.940	2.036
124.249	2.525	233.537	0.498	3.0230150067E+002	5.8542937785E+001	-5.4003674340E+001	0.468	1.941	2.049
124.569	2.489	233.706	0.535	2.8459851407E+002	5.3905540034E+001	-5.5296435290E+001	0.449	1.942	2.056
125.121	2.395	234.003	0.523	2.5409376139E+002	4.6027875019E+001	-5.2724679630E+001	0.414	1.944	2.067

125.673	2.283	234.283	0.494	2.2642855294E+002	3.9071523906E+001	-4.7605011609E+001	0.379	1.947	2.075
126.077	2.190	234.475	0.499	2.0792759090E+002	3.4549732693E+001	-4.6334334848E+001	0.355	1.949	2.079
126.629	2.053	234.759	0.512	1.8191927394E+002	2.8454747660E+001	-4.5921656411E+001	0.319	1.952	2.083
127.181	1.913	235.040	0.489	1.5726325330E+002	2.2916281197E+001	-4.1710888600E+001	0.281	1.954	2.084
127.732	1.752	235.299	0.468	1.3590058239E+002	1.8430509457E+001	-3.7170976580E+001	0.248	1.956	2.084
127.831	1.722	235.344	0.459	1.3223984742E+002	1.7685126997E+001	-3.7007419307E+001	0.242	1.957	2.084
128.383	1.529	235.597	0.456	1.1146897505E+002	1.3413803142E+001	-3.5454396841E+001	0.204	1.960	2.084
128.500	1.486	235.649	0.468	1.0737593735E+002	1.2613440315E+001	-3.5141284186E+001	0.196	1.961	2.083
129.052	1.301	235.911	0.491	8.7592279472E+001	8.9496390882E+000	-3.5446785746E+001	0.157	1.964	2.079
129.603	1.136	236.191	0.561	6.8268290543E+001	5.7478517313E+000	-3.6826275640E+001	0.115	1.964	2.066
130.155	1.028	236.530	0.585	4.6962672279E+001	2.5132493499E+000	-3.2200685445E+001	0.077	1.947	2.030
130.386	0.961	236.650	0.517	4.0136611404E+001	1.6111930828E+000	-2.8087397442E+001	0.077	1.930	2.008
130.938	0.787	236.934	0.628	2.6510877015E+001	5.0257759812E-001	-2.6833670178E+001	0.077	1.839	1.900
131.490	0.736	237.342	0.628	1.0531622577E+001	5.5460794190E-002	-2.4029197717E+001	0.077	1.905	1.954

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
ht(m) : Altezza linea di thrust da nodo sinistro base concio
yt(m) : coordinata Y linea di trust
yt'(-) : gradiente pendenza locale linea di trust
E(x)(kN/m) : Forza Normale interconcio
T(x)(kN/m) : Forza Tangenziale interconcio
E' (kN) : derivata Forza normale interconcio
Rho(x) (-) : fattore mobilizzazione resistenza al taglio verticale interconcio ZhU et al.(2003)
FS_qFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by qFEM
FS_srmFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by SRM Procedure

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TABELLA SFORZI DI TAGLIO DISTRIBUITI LUNGO SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	dl (m)	alpha (°)	TauStress (kPa)	TauF (kN/m)	TauStrength (kPa)	TauS (kN/m)
65.149	0.552	0.636	-29.809	-1.569	-0.998	20.958	13.324
65.701	0.552	0.636	-29.809	-4.707	-2.993	23.982	15.247
66.253	0.552	0.636	-29.809	-7.845	-4.988	27.418	17.431
66.804	0.552	0.636	-29.809	-10.983	-6.983	30.894	19.641
67.356	0.144	0.166	-29.809	-12.962	-2.153	33.574	5.577
67.500	0.552	0.636	-29.809	-15.145	-9.629	36.943	23.487
68.052	0.552	0.636	-29.809	-18.692	-11.883	43.032	27.358
68.603	0.552	0.636	-29.809	-22.238	-14.138	49.885	31.715
69.155	0.552	0.636	-29.809	-25.784	-16.393	54.841	34.866
69.707	0.552	0.636	-29.809	-29.331	-18.647	60.437	38.423
70.258	0.505	0.582	-29.809	-32.726	-19.036	69.012	40.142
70.763	0.552	0.627	-28.381	-34.812	-21.827	76.200	47.777
71.315	0.552	0.627	-28.381	-38.094	-23.885	81.159	50.887
71.866	0.552	0.627	-28.381	-41.375	-25.942	87.811	55.057
72.418	0.552	0.627	-28.381	-44.657	-28.000	92.379	57.922
72.969	0.339	0.385	-28.381	-47.306	-18.227	95.517	36.803
73.308	0.552	0.608	-24.808	-44.809	-27.231	102.427	62.247
73.860	0.552	0.608	-24.808	-47.454	-28.839	105.396	64.051
74.412	0.088	0.097	-24.808	-48.989	-4.764	104.862	10.198
74.500	0.443	0.488	-24.808	-50.390	-24.609	112.272	54.829
74.943	0.552	0.586	-19.626	-42.835	-25.087	116.541	68.253
75.495	0.552	0.586	-19.626	-44.897	-26.294	120.118	70.349
76.047	0.184	0.195	-19.626	-46.272	-9.036	122.022	23.829
76.231	0.552	0.565	-12.679	-30.063	-16.999	123.441	69.797
76.782	0.552	0.565	-12.679	-31.103	-17.586	125.582	71.007
77.334	0.237	0.243	-12.679	-31.846	-7.748	126.713	30.827
77.571	0.552	0.556	-6.931	-15.324	-8.516	125.058	69.495
78.123	0.552	0.556	-6.931	-15.715	-8.733	126.264	70.165
78.674	0.032	0.032	-6.931	-15.922	-0.515	124.461	4.024
78.707	0.552	0.552	-0.893	3.659	2.019	121.836	67.218
79.258	0.552	0.552	-0.893	3.725	2.055	123.412	68.087
79.810	0.188	0.188	-0.893	3.769	0.708	124.264	23.343

79.998	0.552	0.553	3.846	19.944	11.027	120.181	66.446
80.549	0.552	0.553	3.846	20.195	11.166	120.904	66.846
81.101	0.330	0.330	3.846	20.396	6.737	121.729	40.207
81.430	0.552	0.556	7.010	31.447	17.478	118.935	66.103
81.982	0.552	0.556	7.010	31.734	17.638	119.773	66.569
82.534	0.552	0.556	7.010	32.021	17.797	120.387	66.910
83.085	0.201	0.203	7.010	32.217	6.536	120.775	24.503
83.287	0.552	0.557	7.726	34.895	19.426	120.576	67.124
83.838	0.552	0.557	7.726	35.180	19.584	121.253	67.501
84.390	0.540	0.545	7.726	35.462	19.328	122.061	66.527
84.930	0.552	0.558	8.578	38.742	21.613	121.923	68.019
85.482	0.552	0.558	8.578	39.020	21.768	122.464	68.320
86.033	0.420	0.425	8.578	39.265	16.689	122.984	52.274
86.454	0.552	0.559	9.485	42.724	23.895	122.702	68.625
87.005	0.552	0.559	9.485	42.989	24.043	123.238	68.925
87.557	0.354	0.359	9.485	43.207	15.492	123.674	44.343
87.911	0.552	0.561	10.435	46.802	26.252	123.255	69.136
88.462	0.038	0.038	10.435	46.933	1.803	123.537	4.745
88.500	0.552	0.561	10.435	47.076	26.406	123.826	69.456
89.052	0.306	0.311	10.435	47.286	14.720	124.264	38.682
89.358	0.552	0.563	11.314	50.627	28.481	123.880	69.691
89.909	0.552	0.563	11.314	50.874	28.620	124.383	69.974
90.461	0.317	0.324	11.314	51.069	16.530	124.774	40.388
90.778	0.552	0.564	12.188	54.365	30.681	124.308	70.155
91.330	0.552	0.564	12.188	54.584	30.805	124.736	70.396
91.882	0.344	0.352	12.188	54.762	19.275	125.085	44.028
92.226	0.552	0.566	13.020	57.879	32.771	124.599	70.547
92.777	0.552	0.566	13.020	58.067	32.877	124.970	70.757
93.329	0.377	0.387	13.020	58.225	22.508	125.281	48.430
93.706	0.552	0.568	13.785	61.068	34.687	124.827	70.902
94.257	0.552	0.568	13.785	61.223	34.774	125.130	71.074
94.809	0.458	0.471	13.785	61.364	28.918	125.409	59.098
95.267	0.552	0.570	14.405	63.664	36.259	125.085	71.241
95.818	0.552	0.570	14.405	63.789	36.330	125.333	71.383
96.370	0.387	0.400	14.405	63.895	25.536	125.539	50.172
96.757	0.552	0.571	15.064	66.275	37.861	125.124	71.480
97.309	0.552	0.571	15.064	66.366	37.913	125.312	71.587
97.860	0.355	0.368	15.064	66.440	24.450	125.453	46.167
98.216	0.552	0.573	15.741	68.825	39.446	124.984	71.632
98.767	0.552	0.573	15.741	68.876	39.475	125.115	71.707
99.319	0.333	0.346	15.741	68.918	23.818	125.197	43.267
99.652	0.552	0.575	16.418	71.234	40.966	124.701	71.714
100.203	0.552	0.575	16.418	71.243	40.971	124.791	71.765
100.755	0.348	0.363	16.418	71.251	25.839	124.819	45.265
101.103	0.552	0.577	17.087	73.474	42.403	124.281	71.724
101.654	0.552	0.577	17.087	73.439	42.383	124.313	71.743
102.206	0.332	0.347	17.087	73.411	25.462	124.261	43.099
102.538	0.552	0.579	17.750	75.533	43.749	123.732	71.667
103.089	0.552	0.579	17.750	75.451	43.702	123.731	71.666
103.641	0.352	0.370	17.750	75.384	27.891	123.611	45.735
103.993	0.507	0.534	18.387	77.344	41.310	123.130	65.765
104.500	0.552	0.581	18.387	77.144	44.845	123.022	71.514
105.052	0.426	0.449	18.387	76.895	34.518	122.692	55.077
105.478	0.552	0.583	18.980	78.481	45.782	122.070	71.210
106.029	0.552	0.583	18.980	78.149	45.589	121.789	71.046
106.581	0.446	0.471	18.980	77.849	36.704	121.319	57.199
107.027	0.552	0.586	19.633	79.504	46.565	120.607	70.638
107.578	0.552	0.586	19.633	79.114	46.336	120.158	70.375
108.130	0.379	0.402	19.633	78.785	31.672	119.592	48.077
108.509	0.552	0.588	20.324	80.452	47.327	118.781	69.874
109.060	0.552	0.588	20.324	79.997	47.059	118.232	69.551
109.612	0.350	0.374	20.324	79.625	29.752	117.624	43.951
109.962	0.538	0.576	21.031	81.229	46.792	116.839	67.305
110.500	0.552	0.591	21.031	80.655	47.668	116.205	68.678
111.052	0.343	0.367	21.031	80.140	29.430	115.449	42.396
111.394	0.552	0.594	21.734	81.493	48.395	114.517	68.006

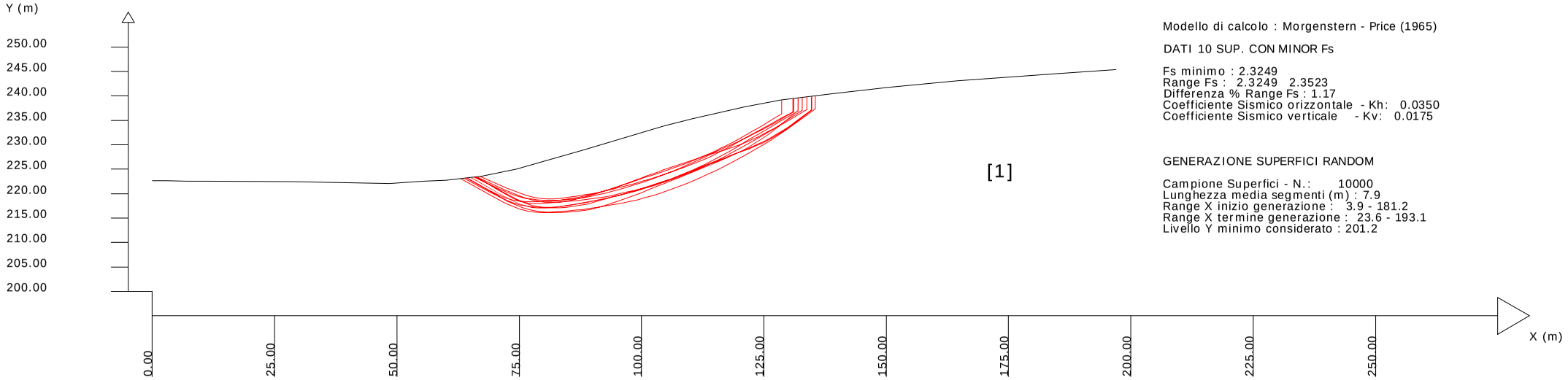
111.946	0.552	0.594	21.734	80.783	47.973	113.774	67.566
112.498	0.347	0.374	21.734	80.204	29.993	112.897	42.219
112.845	0.552	0.597	22.447	81.428	48.601	111.881	66.777
113.397	0.552	0.597	22.447	80.639	48.130	111.112	66.318
113.948	0.342	0.370	22.447	80.000	29.563	110.110	40.689
114.290	0.552	0.600	23.139	81.020	48.604	109.028	65.406
114.842	0.552	0.600	23.139	80.151	48.083	108.294	64.965
115.393	0.376	0.408	23.139	79.422	32.440	107.465	43.894
115.769	0.552	0.603	23.796	80.179	48.339	106.241	64.052
116.320	0.552	0.603	23.796	79.233	47.769	105.689	63.719
116.872	0.432	0.472	23.796	78.390	37.024	105.296	49.733
117.304	0.552	0.606	24.386	78.803	47.729	104.066	63.030
117.856	0.552	0.606	24.386	77.785	47.112	103.022	62.398
118.407	0.541	0.594	24.386	76.777	45.598	101.458	60.256
118.948	0.552	0.615	26.240	79.349	48.801	98.872	60.808
119.500	0.552	0.615	26.240	78.093	48.028	96.989	59.650
120.052	0.354	0.394	26.240	77.062	30.400	95.847	37.811
120.405	0.552	0.627	28.362	79.566	49.879	92.688	58.105
120.957	0.043	0.049	28.362	78.730	3.837	91.445	4.456
121.000	0.552	0.627	28.362	77.784	48.762	90.812	56.929
121.552	0.255	0.290	28.362	76.489	22.179	89.877	26.061
121.807	0.552	0.641	30.604	78.267	50.162	86.744	55.596
122.358	0.552	0.641	30.604	76.151	48.806	85.271	54.651
122.910	0.236	0.274	30.604	74.640	20.461	84.159	23.071
123.146	0.552	0.656	32.718	75.420	49.451	81.303	53.308
123.698	0.552	0.656	32.718	72.960	47.837	80.668	52.891
124.249	0.320	0.381	32.718	71.015	27.023	79.792	30.363
124.569	0.552	0.676	35.324	71.123	48.088	76.014	51.394
125.121	0.552	0.676	35.324	68.215	46.121	72.864	49.265
125.673	0.404	0.496	35.324	65.694	32.569	70.147	34.777
126.077	0.552	0.694	37.311	64.195	44.524	66.707	46.266
126.629	0.552	0.694	37.311	60.930	42.259	63.943	44.349
127.181	0.552	0.694	37.311	57.665	39.995	60.449	41.926
127.732	0.099	0.125	37.311	55.739	6.954	58.798	7.336
127.831	0.552	0.709	38.956	54.304	38.522	56.528	40.100
128.383	0.117	0.150	38.956	52.141	7.844	54.554	8.207
128.500	0.552	0.709	38.956	49.802	35.329	53.072	37.648
129.052	0.552	0.709	38.956	45.880	32.547	50.163	35.585
129.603	0.552	0.709	38.956	41.959	29.765	48.010	34.058
130.155	0.231	0.297	38.956	39.176	11.654	44.793	13.325
130.386	0.552	0.717	39.745	36.485	26.176	41.155	29.526
130.938	0.552	0.717	39.745	32.414	23.255	37.906	27.195
131.490	0.552	0.717	39.745	28.343	20.334	35.074	25.164

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
dl(m) : lunghezza base concio
alpha(°) : Angolo pendenza base concio
TauStress(kPa) : Sforzo di taglio su base concio
TauF (kN/m) : Forza di taglio su base concio
TauStrength(kPa) : Resistenza al taglio su base concio
TauS (kN/m) : Forza resistente al taglio su base concio

SSAP 5.0.2 (2021) - Slope Stability Analysis Program
Software by Dr.Geol. L.Borselli - www.lorenzo-borselli.eu
SSAP/DXF generator rel. 2.0 (2020)

Data : 18/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Morgenstern - Price (1965)

DATI 10 SUP. CON MINOR Fs

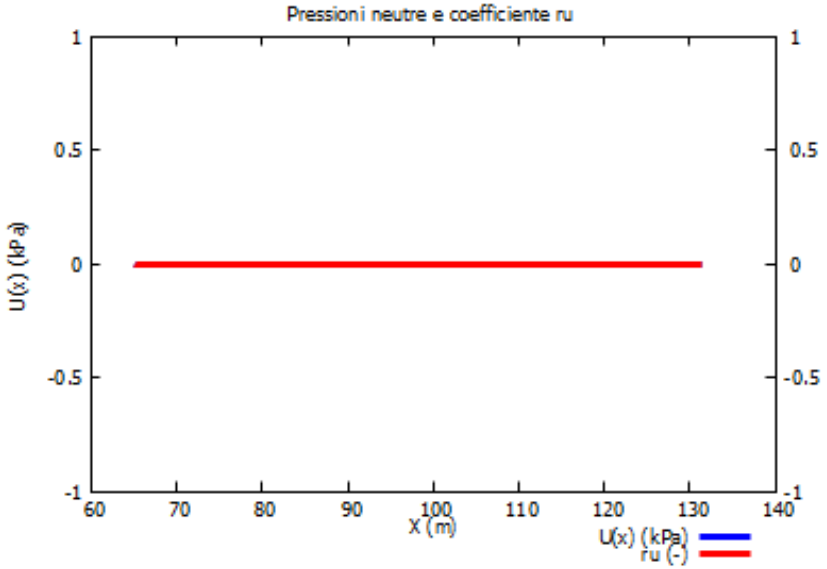
Fs minimo : 2.3249
Range Fs : 2.3249 2.3523
Differenza % Range Fs : 1.17
Coefficiente Sismico orizzontale - Kh: 0.0350
Coefficiente Sismico verticale - Kv: 0.0175

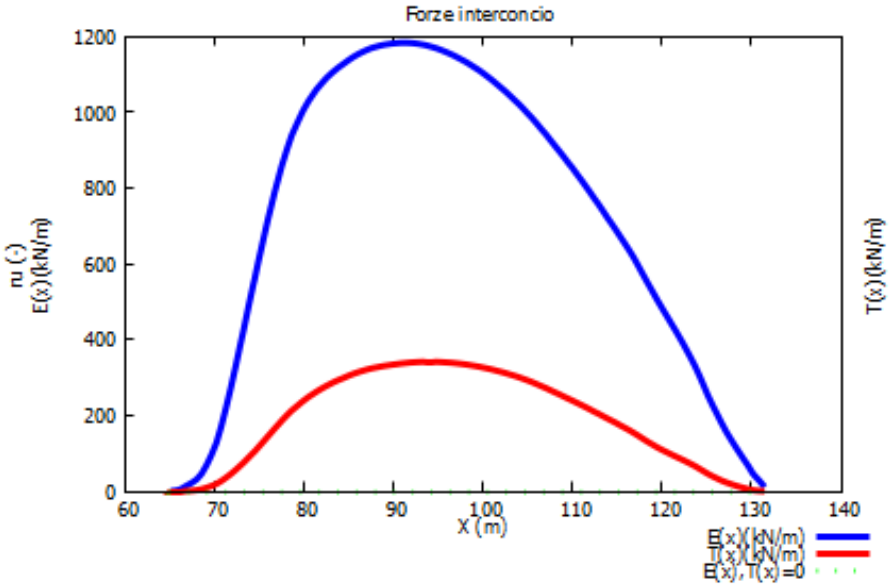
GENERAZIONE SUPERFICI RANDOM

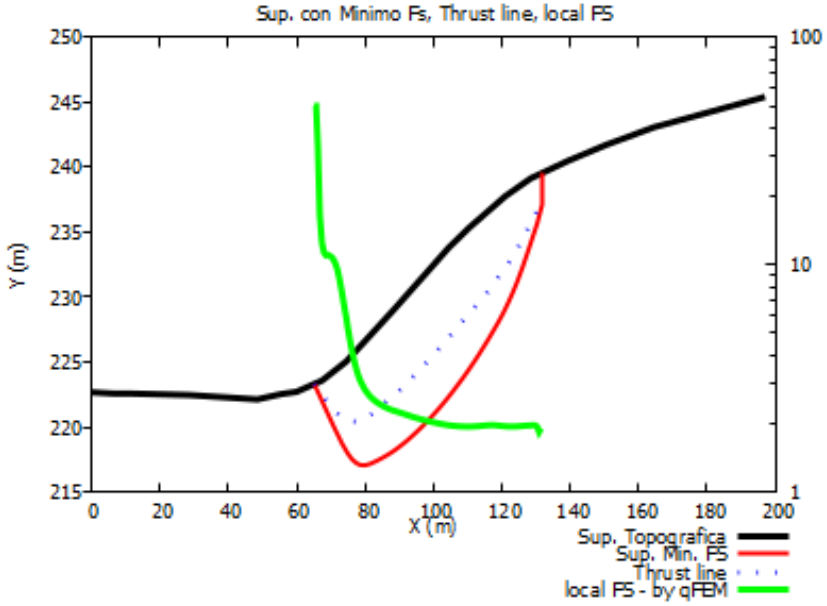
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 7.9
Range X inizio generazione : 3.9 - 181.2
Range X termine generazione : 23.6 - 193.1
Livello Y minimo considerato : 201.2

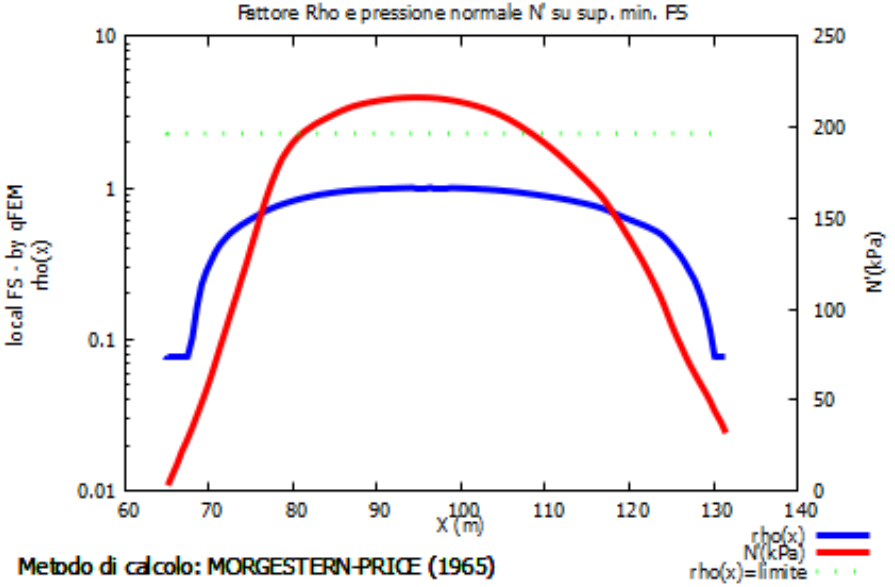
Parametri Geotecnici degli strati

N.	phi`	C`	Cu	Gamm	GammSat	sgci	GSI	mi	D
..	deg	kPa	kPa	kN/m3	kN/m3	MPa	..	..	..
1	26.00	19.50	0	20.00	22.00	0	0	0	0





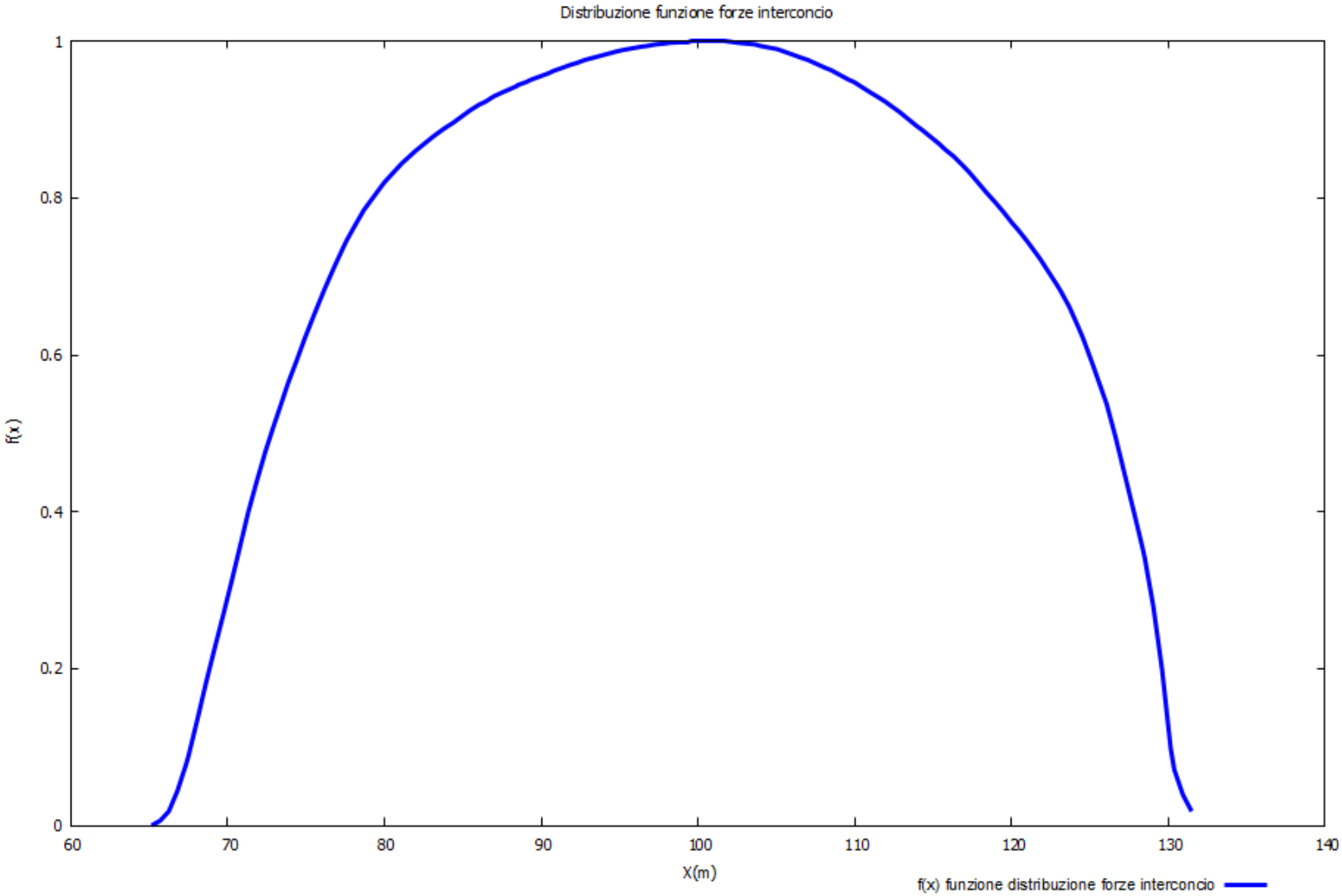


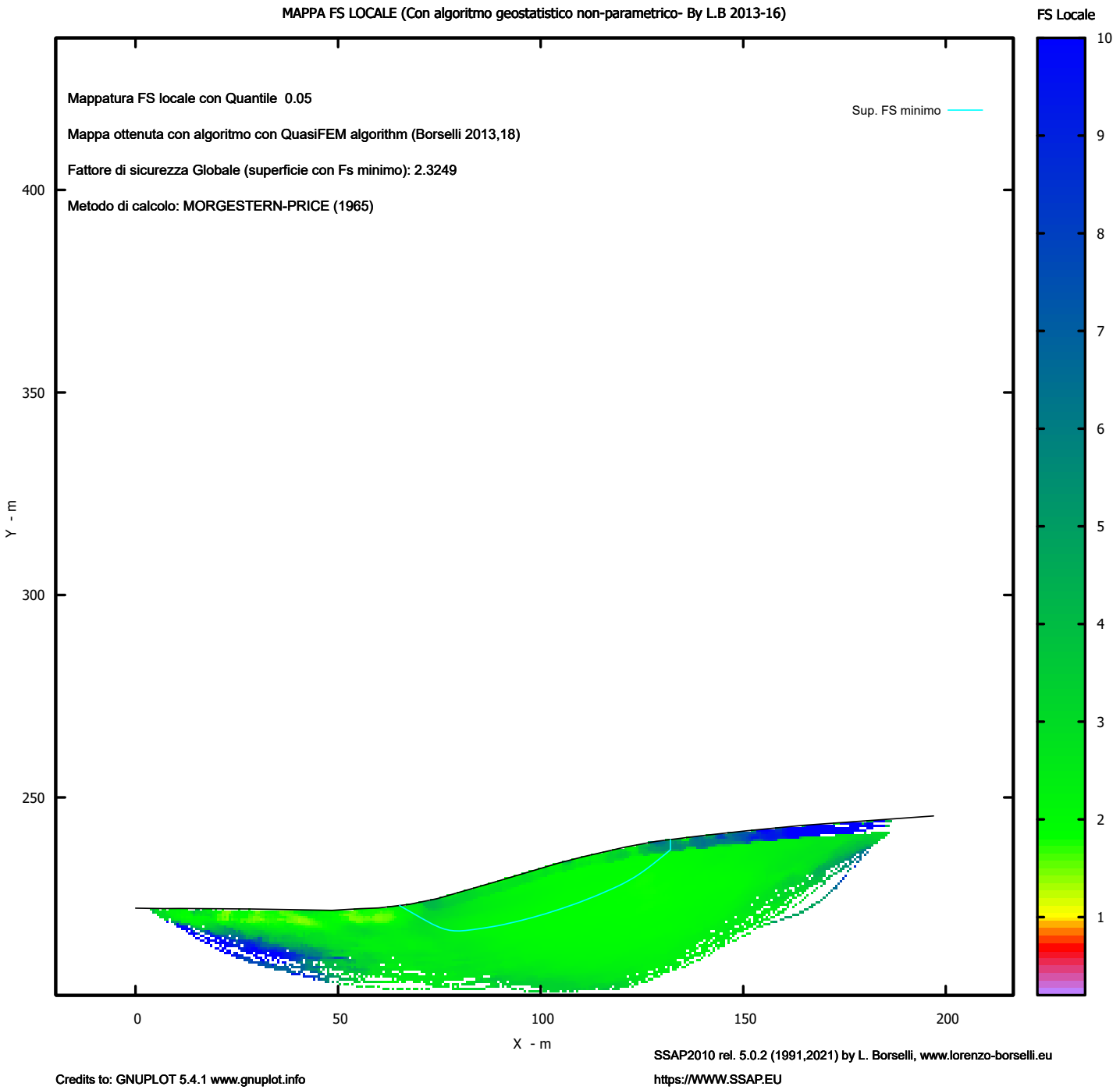


Metodo di calcolo: MORGESTERN-PRICE (1965)

SSAP2010 (versione 5.0.2 - 2021) - DISTRIBUZIONE FORZE e PRESSIONI

18/11/21 13:55




MAPPA FS LOCALE (Con algoritmo geostatistico non-parametrico- By L.B 2013-16)
FS Locale
Mappatura FS locale con Quantile 0.05
Mappa ottenuta con algoritmo con QuasiFEM algorithm (Borselli 2013,18)
Fattore di sicurezza Globale (superficie con Fs minimo): 2.3249
Metodo di calcolo: MORGESTERN-PRICE (1965)
Sup. FS minimo
Y - m
X - m
400
350
300
250
0
50
100
150
200
10
9
8
7
6
5
4
3
2
1
Credits to: GNUPLOT 5.4.1 www.gnuplot.info
SSAP2010 rel. 5.0.2 (1991,2021) by L. Borselli, www.lorenzo-borselli.eu
https://WWW.SSAP.EU

Report elaborazioni

SSAP 5.0.2 - Slope Stability Analysis Program (1991,2021)
WWW.SSAP.EU
Build No. 11893
BY
Dr. Geol. LORENZO BORSELLI *,**
*UASLP, San Luis Potosi, Mexico
e-mail: lborselli@gmail.com
CV e WEB page personale: WWW.LORENZO-BORSELLI.EU
** Gia' Ricercatore CNR-IRPI fino a Luglio 2011

Ultima Revisione struttura tabelle del report: 21 Febbraio 2021

File report: C:\SSAP2010\CRACO SERRACARUSO CAP\VERIFICA 1\DRENATA\BERSELLI\BERSELLI.txt
Data: 18/11/2021
Localita' :
Descrizione:
Modello pendio: DRENATA.mod

---------- PARAMETRI DEL MODELLO DEL PENDIO ----------

__ PARAMETRI GEOMETRICI - Coordinate X Y (in m) __

SUP T.		SUP 2		SUP 3		SUP 4	
X	Y	X	Y	X	Y	X	Y
0.00	222.67	-	-	-	-	-	-
3.00	222.62	-	-	-	-	-	-
7.00	222.56	-	-	-	-	-	-
11.00	222.57	-	-	-	-	-	-
28.50	222.45	-	-	-	-	-	-
48.50	222.12	-	-	-	-	-	-
55.50	222.53	-	-	-	-	-	-
60.00	222.70	-	-	-	-	-	-
67.50	223.58	-	-	-	-	-	-
74.50	225.03	-	-	-	-	-	-
88.50	229.05	-	-	-	-	-	-
104.50	233.81	-	-	-	-	-	-
110.50	235.35	-	-	-	-	-	-
121.00	237.76	-	-	-	-	-	-
128.50	239.15	-	-	-	-	-	-
139.50	240.51	-	-	-	-	-	-
150.50	241.72	-	-	-	-	-	-
164.50	243.08	-	-	-	-	-	-
184.50	244.52	-	-	-	-	-	-
197.00	245.42	-	-	-	-	-	-

ASSENZA DI FALDA

------- PARAMETRI GEOMECCANICI -------

	fi`	C`	Cu	Gamm	Gamm_sat	STR_IDX	sgci	GSI	mi	D
STRATO 1	26.00	19.50	0.00	20.00	22.00	2.279	0.00	0.00	0.00	0.00

LEGENDA: fi`_____ Angolo di attrito interno efficace(in gradi)
C` _____ Coesione efficace (in Kpa)
Cu _____ Resistenza al taglio Non drenata (in Kpa)
Gamm _____ Peso di volume terreno fuori falda (in KN/m^3)
Gamm_sat __ Peso di volume terreno immerso (in KN/m^3)
STR_IDX ___ Indice di resistenza (usato in solo in 'SNIFF SEARCH) (adimensionale)
---- SOLO Per AMMASSI ROCCIOSI FRATTURATI - Parametri Criterio di Rottura di Hoek (2002)-
sigci _____ Resistenza Compressione Uniassiale Roccia Intatta (in MPa)
GSI _____ Geological Strenght Index ammasso(adimensionale)

mi _____ Indice litologico ammasso(adimensionale)
D _____ Fattore di disturbo ammasso(adimensionale)
Fattore di riduzione NTC2018: gammaPHI=1.25 e gammaC=1.25 - DISATTIVATO (solo per ROCCE)
Uso CRITERIO DI ROTTURA Hoek et al.(2002,2006) - non-lineare - Generalizzato, secondo Lei et al.(2016)

---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
MOTORE DI RICERCA: RANDOM SEARCH - Siegel (1981)
FILTRAGGIO SUPERFICI : ATTIVATO
COORDINATE X1,X2,Y OSTACOLO : 0.00 0.00 0.00
LUNGHEZZA MEDIA SEGMENTI (m)*: 7.9 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 3.94 181.24
LIVELLO MINIMO CONSIDERATO (Ymin): 201.15
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 23.64 193.06
TOTALE SUPERFICI GENERATE : 10000
*NOTA IMPORTANTE: La lunghezza media dei segmenti non viene cosiderata nel caso
di uso del motore di recerca NEW RANOM SEARCH

---------- INFORMAZIONI PARAMETRI DI CALCOLO ----------
METODO DI CALCOLO : BORSELLI (Borselli, 2016)
METODO DI ESPLORAZIONE CAMPO VALORI (lambda0,Fs0) ADOTTATO : A (rapido)
COEFFICIENTE SISMICO UTILIZZATO Kh : 0.0350
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0175
COEFFICIENTE c=Kv/Kh UTILIZZATO : 0.5000
FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00

N.B. Le forze orizzontali addizionali in testa e alla base sono poste uguali a 0
durante le tutte le verifiche globali.
I valori >0 impostati dall'utente sono utilizzati solo in caso di verifica singola

---------- RISULTATO FINALE ELABORAZIONI ----------
---
* DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *

Fattore di sicurezza (FS) 2.3352 - Min. - X Y Lambda= 0.2440
63.85 223.15
71.24 218.74
74.54 216.88
76.62 215.89
78.22 215.32
79.92 214.97
81.33 214.85
82.98 214.92
84.86 215.17
87.37 215.65
89.52 216.10
91.48 216.56
93.33 217.05
95.19 217.59
96.98 218.16
98.82 218.79
100.71 219.49
102.75 220.29
104.71 221.07
106.63 221.85
108.52 222.63
110.41 223.42
112.30 224.23
114.22 225.06
116.19 225.93
118.24 226.84
120.12 227.73
121.96 228.67
123.73 229.64

125.59 230.71
127.59 231.97
129.89 233.49
133.20 235.79
135.55 237.47
135.55 240.02

Fattore di sicurezza (FS) 2.3406 - N.2 -- X Y Lambda= 0.2381
61.21 222.84
67.97 218.73
71.02 216.98
72.97 216.02
74.48 215.44
76.08 215.07
77.41 214.90
78.95 214.88
80.68 215.02
82.97 215.32
84.94 215.62
86.75 215.94
88.46 216.28
90.18 216.67
91.85 217.09
93.56 217.57
95.33 218.10
97.24 218.71
99.05 219.32
100.80 219.93
102.51 220.55
104.25 221.21
105.96 221.89
107.69 222.60
109.46 223.35
111.31 224.17
113.09 224.93
114.84 225.66
116.57 226.37
118.31 227.06
120.05 227.73
121.82 228.39
123.65 229.06
125.60 229.74
127.34 230.42
129.02 231.13
130.64 231.89
132.35 232.76
134.16 233.78
136.27 235.06
139.33 237.04
140.79 238.01
140.79 240.65

Fattore di sicurezza (FS) 2.3407 - N.3 -- X Y Lambda= 0.2378
62.32 222.97
69.36 219.28
72.54 217.73
74.57 216.89
76.16 216.41
77.82 216.12
79.23 216.03
80.83 216.10
82.62 216.33
84.94 216.75
87.00 217.15

88.92 217.55
90.74 217.96
92.55 218.40
94.34 218.85
96.17 219.34
98.06 219.88
100.06 220.47
101.90 221.06
103.69 221.68
105.42 222.34
107.21 223.06
108.95 223.81
110.74 224.64
112.59 225.55
114.61 226.59
116.49 227.59
118.31 228.60
120.08 229.63
121.88 230.72
123.86 231.97
126.10 233.45
129.30 235.63
131.01 236.82
131.01 239.46

Fattore di sicurezza (FS) 2.3433 - N.4 -- X Y Lambda= 0.2414
64.97 223.28
70.78 219.99
73.46 218.55
75.22 217.73
76.64 217.20
78.08 216.81
79.34 216.59
80.76 216.46
82.34 216.43
84.37 216.50
86.05 216.60
87.57 216.77
88.98 216.99
90.46 217.29
91.84 217.64
93.29 218.08
94.81 218.60
96.53 219.26
98.17 219.88
99.76 220.48
101.33 221.06
102.87 221.63
104.42 222.20
105.97 222.76
107.53 223.33
109.11 223.90
110.66 224.47
112.19 225.04
113.71 225.63
115.24 226.24
116.78 226.87
118.34 227.52
119.95 228.21
121.64 228.95
123.18 229.67
124.66 230.42
126.09 231.21
127.60 232.10
129.21 233.14

131.07 234.43
133.76 236.39
134.92 237.25
134.92 239.94

Fattore di sicurezza (FS) 2.3454 - N.5 -- X Y Lambda= 0.2404
62.87 223.04
69.06 220.02
71.86 218.74
73.66 218.06
75.08 217.66
76.55 217.44
77.81 217.37
79.22 217.45
80.77 217.65
82.74 218.02
84.57 218.35
86.28 218.67
87.94 218.97
89.56 219.26
91.19 219.55
92.84 219.84
94.53 220.13
96.27 220.44
97.86 220.75
99.41 221.11
100.90 221.51
102.47 221.99
103.97 222.49
105.52 223.06
107.13 223.71
108.88 224.46
110.57 225.17
112.21 225.86
113.82 226.52
115.43 227.17
117.05 227.81
118.69 228.46
120.38 229.11
122.14 229.77
123.74 230.43
125.28 231.12
126.78 231.86
128.35 232.69
130.03 233.67
131.98 234.88
134.79 236.74
135.99 237.55
135.99 240.08

Fattore di sicurezza (FS) 2.3469 - N.6 -- X Y Lambda= 0.2366
63.33 223.09
69.17 219.63
71.81 218.15
73.51 217.33
74.84 216.83
76.23 216.50
77.41 216.34
78.73 216.31
80.20 216.39
82.08 216.60
83.81 216.81
85.41 217.01
86.97 217.21

88.49 217.41
90.01 217.62
91.55 217.84
93.13 218.08
94.76 218.33
96.27 218.60
97.75 218.89
99.18 219.22
100.67 219.59
102.12 220.00
103.61 220.45
105.15 220.96
106.84 221.56
108.40 222.14
109.91 222.73
111.38 223.34
112.87 223.99
114.35 224.67
115.86 225.40
117.44 226.19
119.15 227.08
120.68 227.93
122.16 228.81
123.58 229.72
125.06 230.74
126.66 231.92
128.49 233.37
131.15 235.57
132.86 237.02
132.86 239.69

Fattore di sicurezza (FS) 2.3503 - N.7 -- X Y Lambda= 0.2362
63.06 223.06
67.56 220.79
69.69 219.77
71.12 219.17
72.30 218.75
73.46 218.43
74.53 218.21
75.68 218.04
76.94 217.94
78.47 217.87
79.77 217.85
80.97 217.88
82.10 217.95
83.29 218.07
84.40 218.23
85.56 218.45
86.78 218.72
88.14 219.07
89.44 219.41
90.68 219.74
91.91 220.08
93.12 220.43
94.34 220.79
95.56 221.16
96.81 221.55
98.10 221.96
99.33 222.37
100.54 222.79
101.73 223.23
102.94 223.69
104.13 224.16
105.33 224.65
106.56 225.17

107.83 225.73
109.08 226.28
110.31 226.83
111.54 227.38
112.76 227.94
114.00 228.50
115.25 229.07
116.52 229.66
117.84 230.27
119.05 230.87
120.23 231.50
121.37 232.15
122.57 232.88
123.86 233.73
125.34 234.76
127.48 236.32
127.48 238.96

Fattore di sicurezza (FS) 2.3539 - N.8 -- X Y Lambda= 0.2488
64.19 223.19
71.37 219.09
74.57 217.37
76.59 216.47
78.14 215.95
79.79 215.66
81.16 215.58
82.77 215.69
84.60 215.98
87.07 216.51
89.15 217.01
91.04 217.52
92.81 218.06
94.61 218.67
96.33 219.30
98.10 220.02
99.92 220.80
101.88 221.71
103.81 222.59
105.69 223.45
107.56 224.31
109.40 225.15
111.26 226.00
113.12 226.85
115.01 227.71
116.92 228.58
118.75 229.44
120.55 230.33
122.33 231.24
124.15 232.20
126.16 233.31
128.42 234.60
131.64 236.50
132.22 236.85
132.22 239.61

Fattore di sicurezza (FS) 2.3560 - N.9 -- X Y Lambda= 0.2349
64.29 223.20
70.56 220.22
73.41 218.95
75.26 218.26
76.72 217.87
78.23 217.63
79.53 217.56
80.99 217.62

82.60 217.81
84.67 218.16
86.50 218.50
88.20 218.84
89.84 219.19
91.46 219.57
93.06 219.97
94.70 220.40
96.38 220.87
98.17 221.40
99.83 221.93
101.45 222.47
103.02 223.04
104.64 223.66
106.22 224.31
107.85 225.02
109.55 225.79
111.39 226.66
113.06 227.50
114.66 228.37
116.21 229.27
117.82 230.26
119.55 231.42
121.54 232.82
124.41 234.95
125.45 235.75
125.45 238.58

Fattore di sicurezza (FS) 2.3560 - N.10 -- X Y Lambda= 0.2384
61.87 222.92
66.31 220.19
68.41 218.95
69.82 218.21
70.98 217.67
72.13 217.24
73.17 216.93
74.31 216.67
75.54 216.46
77.04 216.27
78.32 216.14
79.52 216.06
80.64 216.02
81.82 216.03
82.93 216.08
84.08 216.17
85.29 216.31
86.64 216.50
87.90 216.69
89.12 216.89
90.31 217.10
91.51 217.33
92.69 217.57
93.90 217.83
95.14 218.11
96.44 218.42
97.66 218.73
98.84 219.06
100.00 219.41
101.18 219.80
102.34 220.20
103.53 220.65
104.76 221.13
106.09 221.68
107.32 222.22
108.52 222.77

109.68	223.33
110.86	223.94
112.02	224.56
113.21	225.22
114.42	225.93
115.72	226.72
116.96	227.46
118.17	228.15
119.35	228.82
120.55	229.47
121.73	230.10
122.94	230.72
124.17	231.34
125.47	231.97
126.68	232.59
127.87	233.22
129.03	233.86
130.23	234.55
131.53	235.35
133.01	236.29
134.20	237.07
134.20	239.85

---------- ANALISI DEFICIT DI RESISTENZA ----------
DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *
Analisi Deficit in riferimento a FS(progetto) = 1.100

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	2.335	8723.0	3735.5	4614.0	Surplus
2	2.341	9293.9	3970.7	4926.2	Surplus
3	2.341	7610.0	3251.2	4033.7	Surplus
4	2.343	7907.1	3374.3	4195.3	Surplus
5	2.345	7430.7	3168.3	3945.7	Surplus
6	2.347	8193.7	3491.3	4353.3	Surplus
7	2.350	6177.8	2628.5	3286.5	Surplus
8	2.354	7539.7	3203.1	4016.2	Surplus
9	2.356	6151.4	2610.9	3279.3	Surplus
10	2.356	8278.8	3513.9	4413.5	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 3279.3

Note: FTR --> Forza totale Resistente lungo la superficie
di scivolamento
FTA --> Forza totale Agente lungo la superficie
di scivolamento

IMPORTANTE! : Il Deficit o il Surplus di resistenza viene espresso in kN
per metro di LARGHEZZA rispetto al fronte della scarpata

TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (°)	W (kN/m)	ru (-)	U (kPa)	phi' (°)	(c',Cu) (kPa)
63.854	0.588	-30.88	2.52	0.00	0.00	26.00	19.50
64.443	0.588	-30.88	7.56	0.00	0.00	26.00	19.50
65.031	0.588	-30.88	12.60	0.00	0.00	26.00	19.50
65.619	0.588	-30.88	17.63	0.00	0.00	26.00	19.50
66.207	0.588	-30.88	22.67	0.00	0.00	26.00	19.50
66.796	0.588	-30.88	27.71	0.00	0.00	26.00	19.50
67.384	0.116	-30.88	6.06	0.00	0.00	26.00	19.50
67.500	0.588	-30.88	34.06	0.00	0.00	26.00	19.50

68.088	0.588	-30.88	39.73	0.00	0.00	26.00	19.50
68.677	0.588	-30.88	45.40	0.00	0.00	26.00	19.50
69.265	0.588	-30.88	51.07	0.00	0.00	26.00	19.50
69.853	0.588	-30.88	56.74	0.00	0.00	26.00	19.50
70.441	0.588	-30.88	62.41	0.00	0.00	26.00	19.50
71.030	0.207	-30.88	23.31	0.00	0.00	26.00	19.50
71.237	0.588	-29.40	69.96	0.00	0.00	26.00	19.50
71.825	0.588	-29.40	75.38	0.00	0.00	26.00	19.50
72.413	0.588	-29.40	80.81	0.00	0.00	26.00	19.50
73.001	0.588	-29.40	86.23	0.00	0.00	26.00	19.50
73.590	0.588	-29.40	91.66	0.00	0.00	26.00	19.50
74.178	0.322	-29.40	52.48	0.00	0.00	26.00	19.50
74.500	0.035	-29.40	5.88	0.00	0.00	26.00	19.50
74.535	0.588	-25.51	100.40	0.00	0.00	26.00	19.50
75.124	0.588	-25.51	105.78	0.00	0.00	26.00	19.50
75.712	0.588	-25.51	111.16	0.00	0.00	26.00	19.50
76.300	0.316	-25.51	62.03	0.00	0.00	26.00	19.50
76.617	0.588	-19.58	119.01	0.00	0.00	26.00	19.50
77.205	0.588	-19.58	123.54	0.00	0.00	26.00	19.50
77.793	0.424	-19.58	91.95	0.00	0.00	26.00	19.50
78.218	0.588	-11.50	130.80	0.00	0.00	26.00	19.50
78.806	0.588	-11.50	134.25	0.00	0.00	26.00	19.50
79.394	0.529	-11.50	123.66	0.00	0.00	26.00	19.50
79.923	0.588	-4.72	140.39	0.00	0.00	26.00	19.50
80.511	0.588	-4.72	142.99	0.00	0.00	26.00	19.50
81.100	0.235	-4.72	57.78	0.00	0.00	26.00	19.50
81.334	0.588	2.31	146.20	0.00	0.00	26.00	19.50
81.923	0.588	2.31	147.94	0.00	0.00	26.00	19.50
82.511	0.472	2.31	119.90	0.00	0.00	26.00	19.50
82.983	0.588	7.55	150.75	0.00	0.00	26.00	19.50
83.571	0.588	7.55	151.84	0.00	0.00	26.00	19.50
84.159	0.588	7.55	152.92	0.00	0.00	26.00	19.50
84.748	0.110	7.55	28.84	0.00	0.00	26.00	19.50
84.858	0.588	10.81	154.01	0.00	0.00	26.00	19.50
85.446	0.588	10.81	154.69	0.00	0.00	26.00	19.50
86.035	0.588	10.81	155.36	0.00	0.00	26.00	19.50
86.623	0.588	10.81	156.04	0.00	0.00	26.00	19.50
87.211	0.159	10.81	42.22	0.00	0.00	26.00	19.50
87.370	0.588	11.90	156.83	0.00	0.00	26.00	19.50
87.958	0.542	11.90	144.93	0.00	0.00	26.00	19.50
88.500	0.588	11.90	157.90	0.00	0.00	26.00	19.50
89.088	0.431	11.90	116.19	0.00	0.00	26.00	19.50
89.520	0.588	13.25	158.87	0.00	0.00	26.00	19.50
90.108	0.588	13.25	159.31	0.00	0.00	26.00	19.50
90.696	0.588	13.25	159.75	0.00	0.00	26.00	19.50
91.285	0.197	13.25	53.57	0.00	0.00	26.00	19.50
91.481	0.588	14.72	160.23	0.00	0.00	26.00	19.50
92.070	0.588	14.72	160.48	0.00	0.00	26.00	19.50
92.658	0.588	14.72	160.72	0.00	0.00	26.00	19.50
93.246	0.082	14.72	22.45	0.00	0.00	26.00	19.50
93.328	0.588	16.25	160.90	0.00	0.00	26.00	19.50
93.917	0.588	16.25	160.94	0.00	0.00	26.00	19.50
94.505	0.588	16.25	160.99	0.00	0.00	26.00	19.50
95.093	0.095	16.25	25.96	0.00	0.00	26.00	19.50
95.188	0.588	17.64	160.94	0.00	0.00	26.00	19.50
95.776	0.588	17.64	160.80	0.00	0.00	26.00	19.50
96.365	0.588	17.64	160.66	0.00	0.00	26.00	19.50
96.953	0.028	17.64	7.63	0.00	0.00	26.00	19.50
96.981	0.588	19.01	160.41	0.00	0.00	26.00	19.50
97.569	0.588	19.01	160.08	0.00	0.00	26.00	19.50
98.157	0.588	19.01	159.75	0.00	0.00	26.00	19.50
98.746	0.077	19.01	20.93	0.00	0.00	26.00	19.50
98.823	0.588	20.28	159.29	0.00	0.00	26.00	19.50
99.411	0.588	20.28	158.78	0.00	0.00	26.00	19.50
99.999	0.588	20.28	158.27	0.00	0.00	26.00	19.50
100.588	0.126	20.28	33.75	0.00	0.00	26.00	19.50

100.713	0.588	21.41	157.58	0.00	0.00	26.00	19.50
101.302	0.588	21.41	156.91	0.00	0.00	26.00	19.50
101.890	0.588	21.41	156.24	0.00	0.00	26.00	19.50
102.478	0.269	21.41	71.18	0.00	0.00	26.00	19.50
102.747	0.588	21.72	155.25	0.00	0.00	26.00	19.50
103.335	0.588	21.72	154.54	0.00	0.00	26.00	19.50
103.923	0.577	21.72	150.77	0.00	0.00	26.00	19.50
104.500	0.209	21.72	54.38	0.00	0.00	26.00	19.50
104.709	0.588	22.06	152.61	0.00	0.00	26.00	19.50
105.297	0.588	22.06	151.57	0.00	0.00	26.00	19.50
105.885	0.588	22.06	150.52	0.00	0.00	26.00	19.50
106.473	0.152	22.06	38.78	0.00	0.00	26.00	19.50
106.626	0.588	22.40	149.18	0.00	0.00	26.00	19.50
107.214	0.588	22.40	148.09	0.00	0.00	26.00	19.50
107.802	0.588	22.40	146.99	0.00	0.00	26.00	19.50
108.390	0.129	22.40	32.18	0.00	0.00	26.00	19.50
108.520	0.588	22.74	145.63	0.00	0.00	26.00	19.50
109.108	0.588	22.74	144.49	0.00	0.00	26.00	19.50
109.696	0.588	22.74	143.34	0.00	0.00	26.00	19.50
110.285	0.123	22.74	29.74	0.00	0.00	26.00	19.50
110.407	0.093	23.08	22.44	0.00	0.00	26.00	19.50
110.500	0.588	23.08	141.65	0.00	0.00	26.00	19.50
111.088	0.588	23.08	140.27	0.00	0.00	26.00	19.50
111.677	0.588	23.08	138.89	0.00	0.00	26.00	19.50
112.265	0.038	23.08	9.00	0.00	0.00	26.00	19.50
112.303	0.588	23.41	137.39	0.00	0.00	26.00	19.50
112.891	0.588	23.41	135.95	0.00	0.00	26.00	19.50
113.480	0.588	23.41	134.52	0.00	0.00	26.00	19.50
114.068	0.155	23.41	35.23	0.00	0.00	26.00	19.50
114.223	0.588	23.74	132.68	0.00	0.00	26.00	19.50
114.811	0.588	23.74	131.20	0.00	0.00	26.00	19.50
115.400	0.588	23.74	129.72	0.00	0.00	26.00	19.50
115.988	0.204	23.74	44.72	0.00	0.00	26.00	19.50
116.192	0.588	24.05	127.71	0.00	0.00	26.00	19.50
116.780	0.588	24.05	126.18	0.00	0.00	26.00	19.50
117.369	0.588	24.05	124.65	0.00	0.00	26.00	19.50
117.957	0.284	24.05	59.59	0.00	0.00	26.00	19.50
118.241	0.588	25.44	122.29	0.00	0.00	26.00	19.50
118.829	0.588	25.44	120.55	0.00	0.00	26.00	19.50
119.417	0.588	25.44	118.82	0.00	0.00	26.00	19.50
120.006	0.118	25.44	23.54	0.00	0.00	26.00	19.50
120.123	0.588	26.97	116.62	0.00	0.00	26.00	19.50
120.712	0.288	26.97	56.47	0.00	0.00	26.00	19.50
121.000	0.588	26.97	113.54	0.00	0.00	26.00	19.50
121.588	0.368	26.97	69.91	0.00	0.00	26.00	19.50
121.957	0.588	28.57	109.70	0.00	0.00	26.00	19.50
122.545	0.588	28.57	107.18	0.00	0.00	26.00	19.50
123.133	0.588	28.57	104.65	0.00	0.00	26.00	19.50
123.721	0.014	28.57	2.38	0.00	0.00	26.00	19.50
123.735	0.588	30.10	101.93	0.00	0.00	26.00	19.50
124.323	0.588	30.10	99.16	0.00	0.00	26.00	19.50
124.911	0.588	30.10	96.38	0.00	0.00	26.00	19.50
125.500	0.093	30.10	15.06	0.00	0.00	26.00	19.50
125.593	0.588	32.04	93.00	0.00	0.00	26.00	19.50
126.181	0.588	32.04	89.89	0.00	0.00	26.00	19.50
126.770	0.588	32.04	86.79	0.00	0.00	26.00	19.50
127.358	0.235	32.04	33.83	0.00	0.00	26.00	19.50
127.593	0.588	33.55	82.32	0.00	0.00	26.00	19.50
128.181	0.319	33.55	43.17	0.00	0.00	26.00	19.50
128.500	0.588	33.55	76.91	0.00	0.00	26.00	19.50
129.088	0.588	33.55	73.12	0.00	0.00	26.00	19.50
129.677	0.213	33.55	25.59	0.00	0.00	26.00	19.50
129.890	0.588	34.85	67.82	0.00	0.00	26.00	19.50
130.478	0.588	34.85	63.79	0.00	0.00	26.00	19.50
131.067	0.588	34.85	59.75	0.00	0.00	26.00	19.50
131.655	0.588	34.85	55.72	0.00	0.00	26.00	19.50

132.243	0.588	34.85	51.69	0.00	0.00	26.00	19.50
132.831	0.369	34.85	30.37	0.00	0.00	26.00	19.50
133.201	0.588	35.50	45.06	0.00	0.00	26.00	19.50
133.789	0.588	35.50	40.91	0.00	0.00	26.00	19.50
134.377	0.588	35.50	36.76	0.00	0.00	26.00	19.50
134.965	0.588	35.50	32.61	0.00	0.00	26.00	19.50

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
alpha(°) : Angolo pendenza base concio
W(kN/m) : Forza peso concio
ru(-) : Coefficiente locale pressione interstiziale
U(kPa) : Pressione totale dei pori base concio
phi'(°) : Angolo di attrito efficace base concio
c'/Cu (kPa) : Coesione efficace o Resistenza al taglio in condizioni non drenate

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TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	ht (m)	yt (m)	yt' (--)	E(x) (kN/m)	T(x) (kN/m)	E' (kN)	rho(x) (--)	FS_qFEM (--)	FS_srmFEM (--)		
63.854	0.000	223.152	-0.417	0.0000000000E+000	0.0000000000E+000	1.2582597793E+000	0.078	50.000	50.000		
64.443	0.106	222.906	-0.417	1.9778220662E+000	2.9481165212E-003	5.4659212522E+000	0.078	50.000	50.000		
65.031	0.213	222.662	-0.409	6.4308915027E+000	5.2626456918E-002	1.2162742046E+001	0.078	50.000	48.672		
65.619	0.328	222.425	-0.436	1.6287811336E+001	3.4730919274E-001	2.0939731958E+001	0.078	50.000	31.184		
66.207	0.404	222.149	-0.410	3.1067387000E+001	1.0600952577E+000	2.2576981040E+001	0.078	18.348	16.352		
66.796	0.549	221.942	-0.335	4.2850600815E+001	1.9060200393E+000	1.9489324386E+001	0.078	11.721	11.287		
67.384	0.714	221.755	-0.316	5.3997415590E+001	3.1463984537E+000	1.8879443166E+001	0.097	8.989	8.799		
67.500	0.748	221.719	-0.341	5.6187803789E+001	3.4762651501E+000	1.9943125343E+001	0.104	8.645	8.465		
68.088	0.894	221.514	-0.335	7.1130812930E+001	6.1423576191E+000	2.7132965302E+001	0.151	7.287	7.083		
68.677	1.057	221.325	-0.321	8.8110904755E+001	8.9307678838E+000	3.1909315997E+001	0.186	6.576	6.335		
69.265	1.221	221.137	-0.314	1.0867349597E+002	1.2336146370E+001	3.9478172611E+001	0.219	6.096	5.803		
69.853	1.390	220.955	-0.319	1.3455867322E+002	1.6713616982E+001	5.5809891255E+001	0.254	5.778	5.415		
70.441	1.549	220.762	-0.325	1.7433623403E+002	2.3567613355E+001	7.6054965679E+001	0.302	5.573	5.101		
71.030	1.712	220.573	-0.317	2.2404061231E+002	3.2157584762E+001	9.0189434485E+001	0.348	5.452	4.866		
71.237	1.773	220.510	-0.299	2.4312092766E+002	3.5406852631E+001	9.5764490996E+001	0.362	5.423	4.799		
71.825	1.930	220.335	-0.277	3.0542720536E+002	4.6067592366E+001	1.1211137233E+002	0.402	5.363	4.632		
72.413	2.109	220.183	-0.250	3.7502478035E+002	5.8340344161E+001	1.2381399678E+002	0.439	5.322	4.496		
73.001	2.299	220.042	-0.229	4.5109969918E+002	7.2240067079E+001	1.3220099336E+002	0.474	5.255	4.364		
73.590	2.502	219.914	-0.208	5.3056493646E+002	8.7424246447E+001	1.3902010374E+002	0.506	5.160	4.235		
74.178	2.717	219.797	-0.189	6.1466283202E+002	1.0455785614E+002	1.4023138890E+002	0.538	5.016	4.099		
74.500	2.844	219.742	-0.171	6.5934431751E+002	1.1404491286E+002	1.4817057250E+002	0.555	4.924	4.028		
74.535	2.858	219.736	-0.159	6.6463248122E+002	1.1521639203E+002	1.4916957759E+002	0.557	4.911	4.019		
75.124	3.045	219.643	-0.149	7.5200454496E+002	1.3509561630E+002	1.5131141941E+002	0.590	4.695	3.874		
75.712	3.243	219.561	-0.124	8.4265687573E+002	1.5728763740E+002	1.5103116678E+002	0.625	4.455	3.724		
76.300	3.460	219.497	-0.102	9.2969921018E+002	1.8039273817E+002	1.4617854522E+002	0.659	4.208	3.579		
76.617	3.583	219.469	-0.077	9.7565601117E+002	1.9330195515E+002	1.4825549603E+002	0.678	4.073	3.502		
77.205	3.751	219.427	-0.059	1.0661913519E+003	2.2048413532E+002	1.5440625594E+002	0.718	3.821	3.354		
77.793	3.932	219.399	-0.038	1.1573216140E+003	2.4964741845E+002	1.5207103456E+002	0.758	3.584	3.210		
78.218	4.073	219.389	-0.010	1.2209979136E+003	2.7105911033E+002	1.5024123774E+002	0.786	3.428	3.114		
78.806	4.193	219.389	0.019	1.3095598794E+003	3.0253333892E+002	1.3506733273E+002	0.827	3.228	2.984		
79.394	4.334	219.411	0.048	1.3799104413E+003	3.2972614785E+002	1.1223869125E+002	0.861	3.074	2.881		
79.923	4.474	219.443	0.073	1.4357829147E+003	3.5261636365E+002	1.0074319745E+002	0.888	2.954	2.799		
80.511	4.572	219.492	0.101	1.4918500546E+003	3.7694623664E+002	8.9972442623E+001	0.918	2.835	2.717		
81.100	4.690	219.562	0.123	1.5416393641E+003	4.0003573614E+002	7.3798109652E+001	0.947	2.727	2.642		
81.334	4.741	219.593	0.141	1.5579461079E+003	4.0805458355E+002	6.7274773250E+001	0.956	2.689	2.616		
81.923	4.802	219.678	0.153	1.5942800783E+003	4.2661355306E+002	5.6780657362E+001	0.979	2.601	2.557		
82.511	4.873	219.773	0.165	1.6247509940E+003	4.4306720197E+002	4.5193017137E+001	1.000	2.523	2.505		
82.983	4.934	219.852	0.186	1.6435731123E+003	4.5388024979E+002	3.7377767258E+001	1.013	2.467	2.471		
83.571	4.973	219.970	0.205	1.6637137566E+003	4.6628937969E+002	3.0514424596E+001	1.029	2.402	2.429		
84.159	5.018	220.093	0.211	1.6794746456E+003	4.7667970927E+002	2.3406350384E+001	1.043	2.347	2.394		
84.748	5.065	220.218	0.215	1.6912523348E+003	4.8500213850E+002	1.8567111691E+001	1.054	2.301	2.363		
84.858	5.076	220.244	0.230	1.6932734494E+003	4.8649127456E+002	1.7580468273E+001	1.056	2.292	2.357		

85.446	5.099	220.379	0.228	1.7013801734E+003	4.9299728871E+002	1.1287829453E+001	1.065	2.253	2.331
86.035	5.119	220.511	0.227	1.7065540663E+003	4.9775055004E+002	7.3028614032E+000	1.071	2.224	2.309
86.623	5.141	220.646	0.233	1.7099723040E+003	5.0146093658E+002	4.6049039434E+000	1.077	2.200	2.289
87.211	5.169	220.786	0.242	1.7119719339E+003	5.0437784513E+002	2.2031371453E+000	1.081	2.181	2.271
87.370	5.180	220.827	0.253	1.7122704088E+003	5.0506466532E+002	1.5568520909E+000	1.082	2.176	2.266
87.958	5.203	220.975	0.254	1.7124807919E+003	5.0699050780E+002	-4.9689161961E-001	1.085	2.160	2.249
88.500	5.229	221.114	0.266	1.7117850829E+003	5.0831700782E+002	-2.1448491152E+000	1.087	2.146	2.234
89.088	5.266	221.275	0.272	1.7099735034E+003	5.0933144405E+002	-4.1467281669E+000	1.089	2.133	2.218
89.520	5.291	221.392	0.271	1.7078468276E+003	5.0962841016E+002	-5.5599347993E+000	1.090	2.124	2.207
90.108	5.312	221.551	0.269	1.7040703108E+003	5.0963937879E+002	-7.1830378571E+000	1.092	2.112	2.193
90.696	5.330	221.708	0.263	1.6993956745E+003	5.0924443408E+002	-9.3610346427E+000	1.092	2.100	2.180
91.285	5.345	221.861	0.260	1.6930566508E+003	5.0824788855E+002	-1.1559853111E+001	1.093	2.088	2.167
91.481	5.350	221.912	0.273	1.6907286324E+003	5.0782591590E+002	-1.2035858226E+001	1.093	2.084	2.163
92.070	5.358	222.075	0.277	1.6832730527E+003	5.0625798242E+002	-1.3439303522E+001	1.092	2.073	2.152
92.658	5.366	222.238	0.277	1.6749167136E+003	5.0427772934E+002	-1.5735557941E+001	1.092	2.063	2.141
93.246	5.374	222.400	0.277	1.6647594918E+003	5.0162504069E+002	-1.8834396254E+001	1.091	2.052	2.131
93.328	5.376	222.423	0.292	1.6631949547E+003	5.0120267173E+002	-1.9052282674E+001	1.091	2.051	2.129
93.917	5.377	222.596	0.294	1.6519912875E+003	4.9810770141E+002	-1.9784033738E+001	1.089	2.041	2.120
94.505	5.378	222.769	0.294	1.6399181879E+003	4.9462417253E+002	-2.2201834790E+001	1.088	2.031	2.111
95.093	5.380	222.942	0.294	1.6258698737E+003	4.9041631928E+002	-2.4662567130E+001	1.085	2.021	2.102
95.188	5.380	222.970	0.308	1.6235183626E+003	4.8969883316E+002	-2.4931509854E+001	1.085	2.019	2.101
95.776	5.375	223.152	0.310	1.6083307189E+003	4.8504010664E+002	-2.5995865859E+001	1.082	2.010	2.093
96.365	5.370	223.334	0.310	1.5929331081E+003	4.8020540781E+002	-2.7968269356E+001	1.080	2.002	2.086
96.953	5.366	223.516	0.310	1.5754248467E+003	4.7460013816E+002	-3.2702299555E+001	1.076	1.993	2.079
96.981	5.365	223.525	0.325	1.5745065955E+003	4.7430424729E+002	-3.2787015847E+001	1.076	1.992	2.078
97.569	5.354	223.717	0.313	1.5558999432E+003	4.6828018689E+002	-3.1507032785E+001	1.072	1.984	2.071
98.157	5.328	223.893	0.309	1.5374372159E+003	4.6222068433E+002	-3.3006988532E+001	1.068	1.977	2.065
98.746	5.312	224.080	0.319	1.5170658012E+003	4.5544833324E+002	-3.5221950559E+001	1.064	1.971	2.060
98.823	5.311	224.105	0.326	1.5143413769E+003	4.5454012316E+002	-3.5466384154E+001	1.063	1.970	2.059
99.411	5.285	224.297	0.320	1.4927301629E+003	4.4729342120E+002	-3.6531291331E+001	1.058	1.963	2.053
99.999	5.252	224.481	0.323	1.4713607410E+003	4.4005201311E+002	-3.7891537748E+001	1.053	1.959	2.048
100.588	5.230	224.677	0.336	1.4481491386E+003	4.3209390420E+002	-4.1540738357E+001	1.047	1.954	2.043
100.713	5.228	224.721	0.351	1.4428724105E+003	4.3027648044E+002	-4.2080256476E+001	1.046	1.953	2.042
101.302	5.204	224.927	0.340	1.4178578319E+003	4.2161899806E+002	-4.1582696460E+001	1.039	1.950	2.036
101.890	5.167	225.121	0.338	1.3939485791E+003	4.1326784547E+002	-4.1990293752E+001	1.032	1.948	2.031
102.478	5.140	225.324	0.347	1.3684544448E+003	4.0427976415E+002	-4.3711977273E+001	1.025	1.947	2.026
102.747	5.128	225.418	0.353	1.3566574521E+003	4.0009499396E+002	-4.4257650744E+001	1.021	1.946	2.024
103.335	5.102	225.626	0.343	1.3301398641E+003	3.9063467762E+002	-4.3817200450E+001	1.012	1.946	2.019
103.923	5.063	225.821	0.341	1.3051046308E+003	3.8163650189E+002	-4.4019426611E+001	1.004	1.947	2.015
104.500	5.035	226.024	0.347	1.2789004469E+003	3.7216154686E+002	-4.4141525634E+001	0.995	1.949	2.011
104.709	5.022	226.094	0.338	1.2697895187E+003	3.6886049232E+002	-4.3833482782E+001	0.991	1.949	2.010
105.297	4.983	226.293	0.329	1.2437276067E+003	3.5939919608E+002	-4.3152942726E+001	0.982	1.952	2.007
105.885	4.933	226.481	0.339	1.2190182251E+003	3.5041675217E+002	-4.4740370651E+001	0.973	1.954	2.004
106.473	4.906	226.693	0.357	1.1910886359E+003	3.4030752206E+002	-4.6392004557E+001	0.963	1.958	2.003
106.626	4.897	226.746	0.349	1.1840697042E+003	3.3777410167E+002	-4.6145441300E+001	0.960	1.959	2.002
107.214	4.860	226.951	0.338	1.1568457171E+003	3.2799811874E+002	-4.4792749577E+001	0.950	1.964	2.002
107.802	4.810	227.143	0.333	1.1313691073E+003	3.1893581838E+002	-4.4278169267E+001	0.940	1.968	2.003
108.390	4.768	227.343	0.336	1.1047505461E+003	3.0958627678E+002	-4.2422047000E+001	0.930	1.974	2.006
108.520	4.755	227.384	0.329	1.0993428039E+003	3.0770172696E+002	-4.2219378994E+001	0.928	1.975	2.006
109.108	4.704	227.579	0.318	1.0733855989E+003	2.9872760322E+002	-4.2257390566E+001	0.918	1.981	2.010
109.696	4.636	227.758	0.310	1.0496251659E+003	2.9062504480E+002	-4.1245625625E+001	0.909	1.987	2.014
110.285	4.576	227.944	0.311	1.0248583459E+003	2.8225496768E+002	-3.8621832051E+001	0.900	1.994	2.019
110.407	4.559	227.979	0.294	1.0202099387E+003	2.8069552570E+002	-3.9513345212E+001	0.898	1.995	2.020
110.500	4.548	228.008	0.309	1.0164353568E+003	2.7942952856E+002	-4.0794651499E+001	0.897	1.996	2.021
111.088	4.480	228.190	0.304	9.9221368477E+002	2.7132429334E+002	-4.0342782261E+001	0.888	2.003	2.027
111.677	4.404	228.365	0.311	9.6897033792E+002	2.6358103579E+002	-4.1155015352E+001	0.879	2.011	2.033
112.265	4.344	228.556	0.323	9.4379303867E+002	2.5516886230E+002	-4.0056807942E+001	0.869	2.019	2.039
112.303	4.340	228.567	0.331	9.4226556028E+002	2.5465796670E+002	-4.0114960031E+001	0.869	2.019	2.039
112.891	4.280	228.763	0.326	9.1652866131E+002	2.4601910333E+002	-4.2822212875E+001	0.858	2.028	2.045
113.480	4.214	228.951	0.332	8.9188338457E+002	2.3770500614E+002	-4.3265168929E+001	0.847	2.036	2.050
114.068	4.161	229.153	0.343	8.6562532876E+002	2.2879008946E+002	-4.4304084951E+001	0.835	2.044	2.054
114.223	4.147	229.206	0.361	8.5876691478E+002	2.2645307078E+002	-4.4837944061E+001	0.831	2.046	2.055
114.811	4.104	229.422	0.345	8.3100371707E+002	2.1698671078E+002	-4.4201121861E+001	0.817	2.054	2.057
115.400	4.035	229.612	0.334	8.0676239334E+002	2.0871125000E+002	-4.2402982267E+001	0.804	2.060	2.058
115.988	3.980	229.815	0.347	7.8111478422E+002	1.9999195044E+002	-4.4091529949E+001	0.790	2.066	2.058
116.192	3.962	229.887	0.367	7.7206905312E+002	1.9692859638E+002	-4.4860729031E+001	0.785	2.067	2.058

116.780	3.918	230.106	0.363	7.4466640775E+002	1.8771559813E+002	-4.5346834829E+001	0.769	2.071	2.057
117.369	3.864	230.314	0.360	7.1871655108E+002	1.7911122398E+002	-4.4730794678E+001	0.754	2.074	2.056
117.957	3.817	230.529	0.361	6.9203870345E+002	1.7040204212E+002	-4.4310893240E+001	0.738	2.075	2.055
118.241	3.790	230.629	0.351	6.7960526307E+002	1.6639470074E+002	-4.3696609973E+001	0.730	2.075	2.055
118.829	3.717	230.836	0.345	6.5403781960E+002	1.5829186067E+002	-4.2808567361E+001	0.715	2.075	2.055
119.417	3.637	231.036	0.353	6.2923914190E+002	1.5059390706E+002	-4.3842420265E+001	0.701	2.074	2.056
120.006	3.573	231.251	0.368	6.0245532602E+002	1.4244117023E+002	-4.5985253313E+001	0.684	2.074	2.058
120.123	3.560	231.295	0.357	5.9703719193E+002	1.4081270544E+002	-4.5733314826E+001	0.681	2.073	2.058
120.712	3.469	231.503	0.348	5.7114302796E+002	1.3311825484E+002	-4.2492477796E+001	0.666	2.073	2.062
121.000	3.420	231.600	0.358	5.5910037083E+002	1.2959392685E+002	-4.3034629621E+001	0.659	2.073	2.064
121.588	3.337	231.817	0.372	5.3223691200E+002	1.2182788521E+002	-4.6115894186E+001	0.643	2.073	2.069
121.957	3.288	231.956	0.382	5.1515097254E+002	1.1694088298E+002	-4.6760385861E+001	0.632	2.073	2.072
122.545	3.195	232.183	0.378	4.8730271008E+002	1.0906144543E+002	-4.6217452704E+001	0.615	2.074	2.079
123.133	3.092	232.401	0.384	4.6077415111E+002	1.0166906748E+002	-4.6342491669E+001	0.598	2.076	2.086
123.721	3.006	232.634	0.397	4.3277877493E+002	9.3997749809E+001	-4.7111168097E+001	0.578	2.079	2.094
123.735	3.004	232.640	0.421	4.3214026155E+002	9.3823473869E+001	-4.7155981585E+001	0.578	2.079	2.094
124.323	2.911	232.888	0.416	4.0297454748E+002	8.5998220514E+001	-4.8438458500E+001	0.557	2.082	2.103
124.911	2.812	233.130	0.407	3.7515033125E+002	7.8687054034E+001	-4.6390616497E+001	0.537	2.087	2.112
125.500	2.708	233.367	0.406	3.4839399140E+002	7.1800901723E+001	-4.6375326304E+001	0.516	2.092	2.122
125.593	2.693	233.406	0.427	3.4404576166E+002	7.0708362980E+001	-4.6521003029E+001	0.513	2.093	2.123
126.181	2.576	233.658	0.423	3.1666440482E+002	6.3894298754E+001	-4.5549975141E+001	0.492	2.100	2.134
126.770	2.455	233.905	0.423	2.9045425630E+002	5.7517276776E+001	-4.4307733071E+001	0.470	2.108	2.145
127.358	2.337	234.155	0.430	2.6453445070E+002	5.1323473180E+001	-4.4512725363E+001	0.447	2.117	2.157
127.593	2.293	234.258	0.438	2.5402401921E+002	4.8843505019E+001	-4.4324651344E+001	0.437	2.120	2.161
128.181	2.161	234.516	0.422	2.2849161425E+002	4.2901197792E+001	-3.9737563030E+001	0.413	2.130	2.171
128.500	2.075	234.641	0.423	2.1646478819E+002	4.0158545645E+001	-3.8700251453E+001	0.401	2.135	2.176
129.088	1.943	234.899	0.446	1.9266945004E+002	3.4798718810E+001	-4.0256850416E+001	0.376	2.144	2.181
129.677	1.819	235.166	0.457	1.6910087178E+002	2.9570953252E+001	-4.0302486886E+001	0.348	2.152	2.183
129.890	1.777	235.266	0.446	1.6047860882E+002	2.7678584489E+001	-3.9056200333E+001	0.337	2.154	2.182
130.478	1.626	235.523	0.450	1.3966348270E+002	2.3235501987E+001	-3.5156912917E+001	0.310	2.156	2.174
131.067	1.488	235.795	0.478	1.1911498829E+002	1.8975199694E+001	-3.6362862010E+001	0.279	2.160	2.166
131.655	1.369	236.086	0.495	9.6881011173E+001	1.4317635449E+001	-3.6456621669E+001	0.237	2.160	2.149
132.243	1.251	236.377	0.499	7.6222204495E+001	1.0108085983E+001	-3.3667635622E+001	0.189	2.151	2.117
132.831	1.137	236.674	0.479	5.7269589448E+001	6.4717032073E+000	-2.7776264963E+001	0.139	2.131	2.069
133.201	1.043	236.837	0.455	4.8045025284E+001	4.8697693743E+000	-2.4266079014E+001	0.113	2.110	2.034
133.789	0.897	237.110	0.529	3.4448112475E+001	2.9288786966E+000	-2.4023376952E+001	0.079	2.063	1.966
134.377	0.827	237.459	0.573	1.9780488790E+001	1.4102890821E+000	-2.1831045271E+001	0.078	2.025	1.904
134.965	0.731	237.783	0.573	8.7629485204E+000	5.5328758354E-001	-1.6812380369E+001	0.078	2.129	1.995

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
ht(m) : Altezza linea di thrust da nodo sinistro base concio
yt(m) : coordinata Y linea di trust
yt'(-) : gradiente pendenza locale linea di trust
E(x)(kN/m) : Forza Normale interconcio
T(x)(kN/m) : Forza Tangenziale interconcio
E' (kN) : derivata Forza normale interconcio
Rho(x) (-) : fattore mobilizzazione resistenza al taglio verticale interconcio ZhU et al.(2003)
FS_qFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by qFEM
FS_srmFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by SRM Procedure

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TABELLA SFORZI DI TAGLIO DISTRIBUITI LUNGO SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	dl (m)	alpha (°)	TauStress (kPa)	TauF (kN/m)	TauStrength (kPa)	TauS (kN/m)
63.854	0.588	0.685	-30.883	-1.776	-1.217	21.077	14.448
64.443	0.588	0.685	-30.883	-5.328	-3.652	24.329	16.676
65.031	0.588	0.685	-30.883	-8.880	-6.087	28.048	19.226
65.619	0.588	0.685	-30.883	-12.432	-8.521	32.175	22.055
66.207	0.588	0.685	-30.883	-15.983	-10.956	35.630	24.423
66.796	0.588	0.685	-30.883	-19.535	-13.391	39.702	27.214
67.384	0.116	0.135	-30.883	-21.662	-2.930	42.599	5.763
67.500	0.588	0.685	-30.883	-24.011	-16.459	47.024	32.233

68.088	0.588	0.685	-30.883	-28.009	-19.199	50.848	34.854
68.677	0.588	0.685	-30.883	-32.007	-21.939	55.839	38.275
69.265	0.588	0.685	-30.883	-36.005	-24.679	61.668	42.270
69.853	0.588	0.685	-30.883	-40.002	-27.420	71.046	48.699
70.441	0.588	0.685	-30.883	-44.000	-30.160	78.677	53.929
71.030	0.207	0.241	-30.883	-46.702	-11.262	82.590	19.917
71.237	0.588	0.675	-29.396	-47.694	-32.203	89.201	60.229
71.825	0.588	0.675	-29.396	-51.394	-34.701	96.434	65.113
72.413	0.588	0.675	-29.396	-55.094	-37.199	103.703	70.020
73.001	0.588	0.675	-29.396	-58.793	-39.697	110.174	74.390
73.590	0.588	0.675	-29.396	-62.493	-42.195	118.192	79.804
74.178	0.322	0.370	-29.396	-65.355	-24.158	121.342	44.854
74.500	0.035	0.041	-29.396	-66.491	-2.705	127.333	5.180
74.535	0.588	0.652	-25.508	-61.466	-40.064	132.529	86.384
75.124	0.588	0.652	-25.508	-64.761	-42.212	141.355	92.137
75.712	0.588	0.652	-25.508	-68.056	-44.360	147.076	95.866
76.300	0.316	0.351	-25.508	-70.590	-24.752	151.896	53.262
76.617	0.588	0.624	-19.580	-57.592	-35.959	162.256	101.309
77.205	0.588	0.624	-19.580	-59.783	-37.327	169.570	105.876
77.793	0.424	0.450	-19.580	-61.669	-27.782	173.494	78.159
78.218	0.588	0.600	-11.505	-35.982	-21.601	173.846	104.366
78.806	0.588	0.600	-11.505	-36.932	-22.172	169.887	101.988
79.394	0.529	0.540	-11.505	-37.835	-20.423	169.790	91.651
79.923	0.588	0.590	-4.723	-11.287	-6.663	163.401	96.452
80.511	0.588	0.590	-4.723	-11.497	-6.786	164.126	96.880
81.100	0.235	0.236	-4.723	-11.643	-2.742	162.192	38.199
81.334	0.588	0.589	2.312	18.704	11.012	152.740	89.926
81.923	0.588	0.589	2.312	18.926	11.143	152.770	89.944
82.511	0.472	0.472	2.312	19.126	9.031	152.081	71.806
82.983	0.588	0.593	7.554	42.211	25.049	145.444	86.310
83.571	0.588	0.593	7.554	42.515	25.230	145.726	86.477
84.159	0.588	0.593	7.554	42.820	25.410	145.994	86.636
84.748	0.110	0.111	7.554	43.001	4.792	146.401	16.316
84.858	0.588	0.599	10.813	57.085	34.189	142.316	85.234
85.446	0.588	0.599	10.813	57.336	34.339	142.735	85.485
86.035	0.588	0.599	10.813	57.587	34.489	143.201	85.764
86.623	0.588	0.599	10.813	57.838	34.640	143.685	86.054
87.211	0.159	0.162	10.813	57.997	9.372	144.001	23.270
87.370	0.588	0.601	11.899	62.722	37.708	143.069	86.012
87.958	0.542	0.554	11.899	62.929	34.846	143.480	79.451
88.500	0.588	0.601	11.899	63.150	37.965	143.919	86.523
89.088	0.431	0.441	11.899	63.362	27.936	144.341	63.640
89.520	0.588	0.604	13.252	69.216	41.832	143.271	86.588
90.108	0.588	0.604	13.252	69.407	41.947	143.652	86.818
90.696	0.588	0.604	13.252	69.597	42.062	144.052	87.060
91.285	0.197	0.202	13.252	69.724	14.105	144.305	29.194
91.481	0.588	0.608	14.721	75.862	46.142	142.942	86.943
92.070	0.588	0.608	14.721	75.978	46.213	143.213	87.107
92.658	0.588	0.608	14.721	76.094	46.283	143.535	87.304
93.246	0.082	0.085	14.721	76.160	6.466	143.717	12.202
93.328	0.588	0.613	16.251	82.309	50.435	142.137	87.095
93.917	0.588	0.613	16.251	82.331	50.449	142.286	87.187
94.505	0.588	0.613	16.251	82.352	50.462	142.537	87.340
95.093	0.095	0.099	16.251	82.365	8.139	142.629	14.093
95.188	0.588	0.617	17.637	87.692	54.131	141.171	87.143
95.776	0.588	0.617	17.637	87.614	54.083	141.133	87.119
96.365	0.588	0.617	17.637	87.535	54.034	141.329	87.240
96.953	0.028	0.029	17.637	87.494	2.567	141.517	4.152
96.981	0.588	0.622	19.012	92.514	57.563	139.849	87.016
97.569	0.588	0.622	19.012	92.323	57.444	139.624	86.875
98.157	0.588	0.622	19.012	92.132	57.325	139.724	86.938
98.746	0.077	0.082	19.012	92.024	7.512	139.659	11.401
98.823	0.588	0.627	20.281	96.374	60.441	138.259	86.710
99.411	0.588	0.627	20.281	96.067	60.249	137.891	86.479
99.999	0.588	0.627	20.281	95.760	60.056	137.928	86.502
100.588	0.126	0.134	20.281	95.574	12.805	138.014	18.492

100.713	0.588	0.632	21.405	99.142	62.643	136.646	86.340
101.302	0.588	0.632	21.405	98.723	62.379	135.981	85.920
101.890	0.588	0.632	21.405	98.305	62.114	135.911	85.876
102.478	0.269	0.289	21.405	98.000	28.297	135.674	39.175
102.747	0.588	0.633	21.723	98.713	62.509	135.181	85.602
103.335	0.588	0.633	21.723	98.261	62.223	134.379	85.094
103.923	0.577	0.621	21.723	97.814	60.702	134.318	83.356
104.500	0.209	0.225	21.723	97.480	21.893	133.713	30.031
104.709	0.588	0.635	22.056	98.088	62.259	132.981	84.406
105.297	0.588	0.635	22.056	97.416	61.832	131.926	83.736
105.885	0.588	0.635	22.056	96.744	61.405	131.946	83.749
106.473	0.152	0.164	22.056	96.321	15.819	131.271	21.559
106.626	0.588	0.636	22.395	96.917	61.664	130.448	82.999
107.214	0.588	0.636	22.395	96.206	61.212	129.192	82.199
107.802	0.588	0.636	22.395	95.495	60.760	128.625	81.839
108.390	0.129	0.140	22.395	95.061	13.301	127.621	17.857
108.520	0.588	0.638	22.738	95.620	60.991	127.068	81.050
109.108	0.588	0.638	22.738	94.869	60.512	125.655	80.148
109.696	0.588	0.638	22.738	94.118	60.033	125.050	79.762
110.285	0.123	0.133	22.738	93.664	12.457	123.937	16.483
110.407	0.093	0.101	23.080	94.495	9.518	123.824	12.472
110.500	0.588	0.639	23.080	93.973	60.092	123.330	78.864
111.088	0.588	0.639	23.080	93.055	59.504	122.109	78.083
111.677	0.588	0.639	23.080	92.136	58.917	121.640	77.783
112.265	0.038	0.042	23.080	91.647	3.816	120.717	5.026
112.303	0.588	0.641	23.414	92.045	59.007	120.439	77.209
112.891	0.588	0.641	23.414	91.085	58.391	119.210	76.421
113.480	0.588	0.641	23.414	90.125	57.775	118.675	76.078
114.068	0.155	0.169	23.414	89.518	15.131	118.014	19.948
114.223	0.588	0.643	23.740	89.734	57.668	117.532	75.532
114.811	0.588	0.643	23.740	88.733	57.024	115.604	74.293
115.400	0.588	0.643	23.740	87.731	56.380	114.932	73.861
115.988	0.204	0.223	23.740	87.056	19.436	114.325	25.524
116.192	0.588	0.644	24.045	87.115	56.117	113.661	73.217
116.780	0.588	0.644	24.045	86.074	55.446	112.144	72.240
117.369	0.588	0.644	24.045	85.033	54.776	111.188	71.624
117.957	0.284	0.311	24.045	84.262	26.186	110.102	34.217
118.241	0.588	0.651	25.440	86.571	56.396	107.802	70.226
118.829	0.588	0.651	25.440	85.344	55.596	106.300	69.248
119.417	0.588	0.651	25.440	84.117	54.797	105.540	68.753
120.006	0.118	0.130	25.440	83.380	10.857	104.843	13.652
120.123	0.588	0.660	26.973	85.649	56.535	102.212	67.467
120.712	0.288	0.324	26.973	84.573	27.376	100.783	32.623
121.000	0.588	0.660	26.973	83.381	55.038	100.282	66.194
121.588	0.368	0.413	26.973	82.021	33.890	99.123	40.957
121.957	0.588	0.670	28.570	83.359	55.837	96.414	64.582
122.545	0.588	0.670	28.570	81.437	54.549	94.327	63.184
123.133	0.588	0.670	28.570	79.515	53.262	93.027	62.313
123.721	0.014	0.015	28.570	78.531	1.212	92.103	1.422
123.735	0.588	0.680	30.102	79.724	54.211	90.093	61.261
124.323	0.588	0.680	30.102	77.552	52.734	87.837	59.728
124.911	0.588	0.680	30.102	75.380	51.257	85.681	58.261
125.500	0.093	0.108	30.102	74.121	8.009	84.691	9.151
125.593	0.588	0.694	32.042	75.069	52.098	81.792	56.763
126.181	0.588	0.694	32.042	72.565	50.360	79.465	55.148
126.770	0.588	0.694	32.042	70.060	48.622	77.439	53.742
127.358	0.235	0.277	32.042	68.308	18.951	76.185	21.136
127.593	0.588	0.706	33.548	67.851	47.893	73.248	51.702
128.181	0.319	0.382	33.548	65.714	25.118	70.690	27.020
128.500	0.588	0.706	33.548	63.397	44.749	69.479	49.041
129.088	0.588	0.706	33.548	60.266	42.539	67.176	47.416
129.677	0.213	0.256	33.548	58.132	14.890	65.704	16.830
129.890	0.588	0.717	34.850	56.781	40.703	62.236	44.613
130.478	0.588	0.717	34.850	53.405	38.283	59.800	42.867
131.067	0.588	0.717	34.850	50.028	35.862	58.121	41.663
131.655	0.588	0.717	34.850	46.652	33.442	55.340	39.670

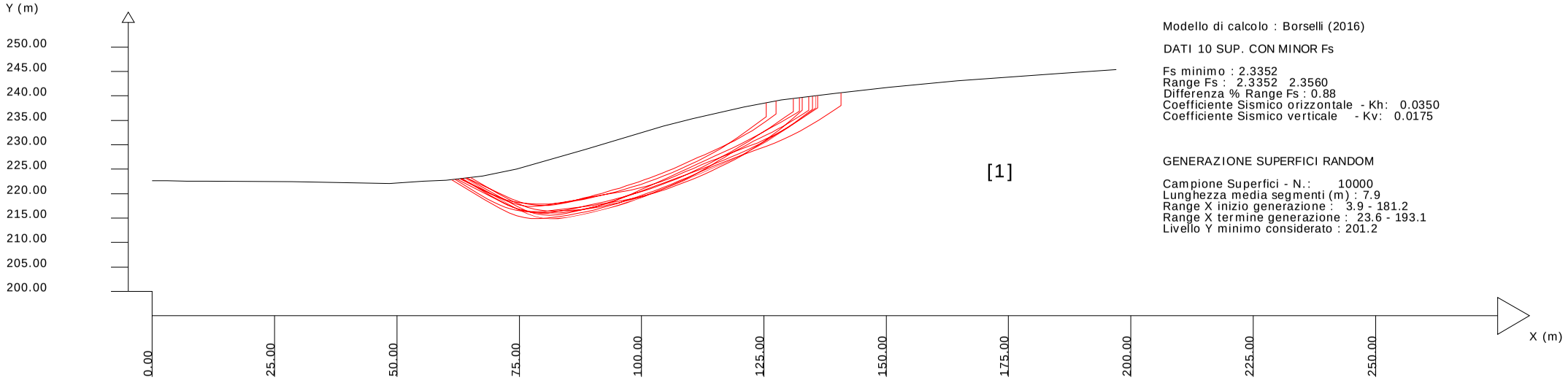
132.243	0.588	0.717	34.850	43.275	31.021	52.396	37.560
132.831	0.369	0.450	34.850	40.527	18.230	49.196	22.129
133.201	0.588	0.723	35.500	37.993	27.453	46.221	33.399
133.789	0.588	0.723	35.500	34.492	24.923	43.436	31.386
134.377	0.588	0.723	35.500	30.991	22.394	40.333	29.144
134.965	0.588	0.723	35.500	27.490	19.864	37.705	27.245

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
dl(m) : lunghezza base concio
alpha(°) : Angolo pendenza base concio
TauStress(kPa) : Sforzo di taglio su base concio
TauF (kN/m) : Forza di taglio su base concio
TauStrength(kPa) : Resistenza al taglio su base concio
TauS (kN/m) : Forza resistente al taglio su base concio

SSAP 5.0.2 (2021) - Slope Stability Analysis Program
Software by Dr.Geol. L.Borselli - www.lorenzo-borselli.eu
SSAP/DXF generator rel. 2.0 (2020)

Data : 18/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Borselli (2016)

DATI 10 SUP. CON MINOR Fs

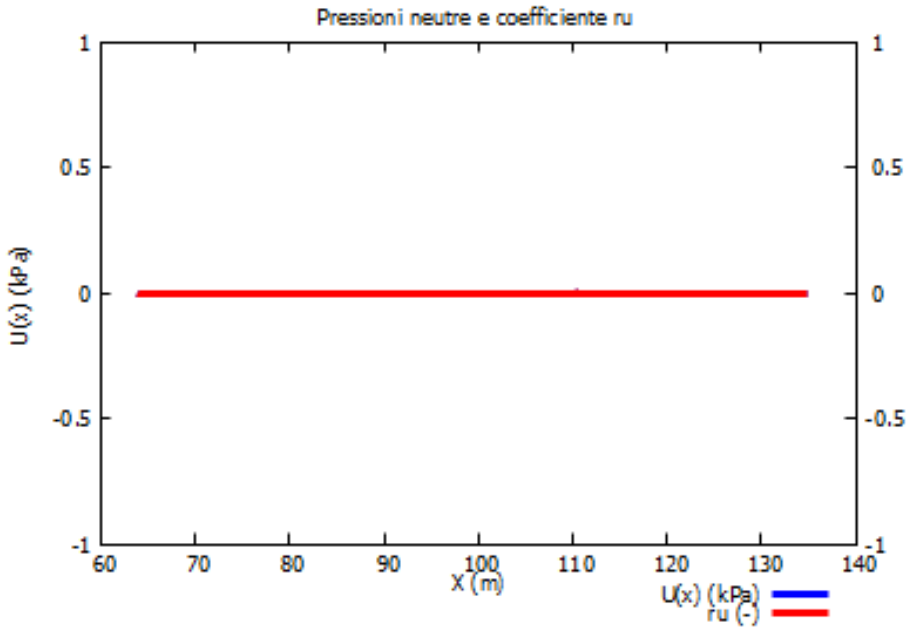
Fs minimo : 2.3352
Range Fs : 2.3352 2.3560
Differenza % Range Fs : 0.88
Coefficiente Sismico orizzontale - Kh: 0.0350
Coefficiente Sismico verticale - Kv: 0.0175

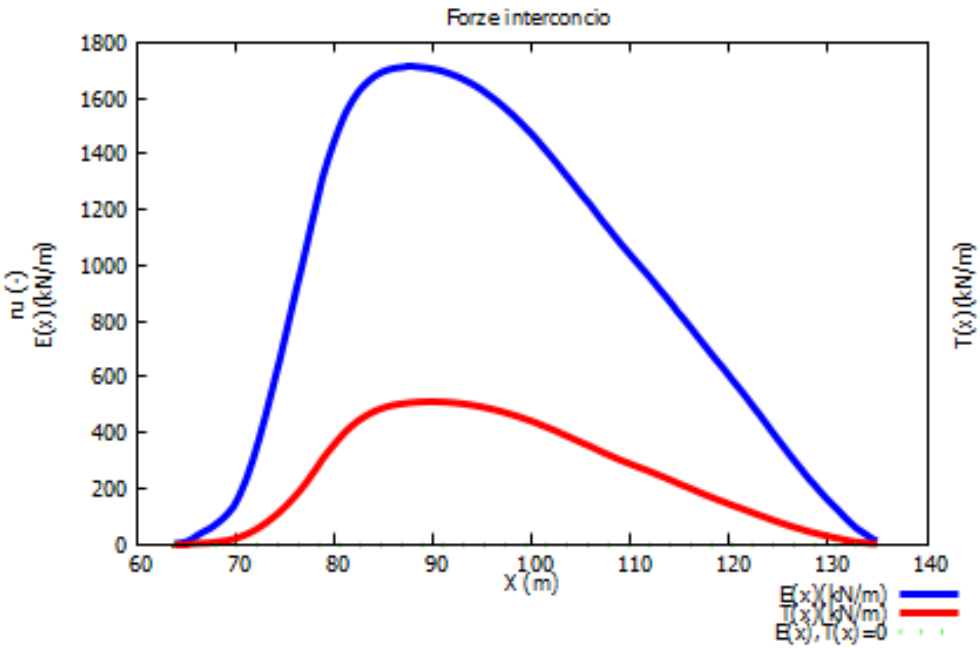
GENERAZIONE SUPERFICI RANDOM

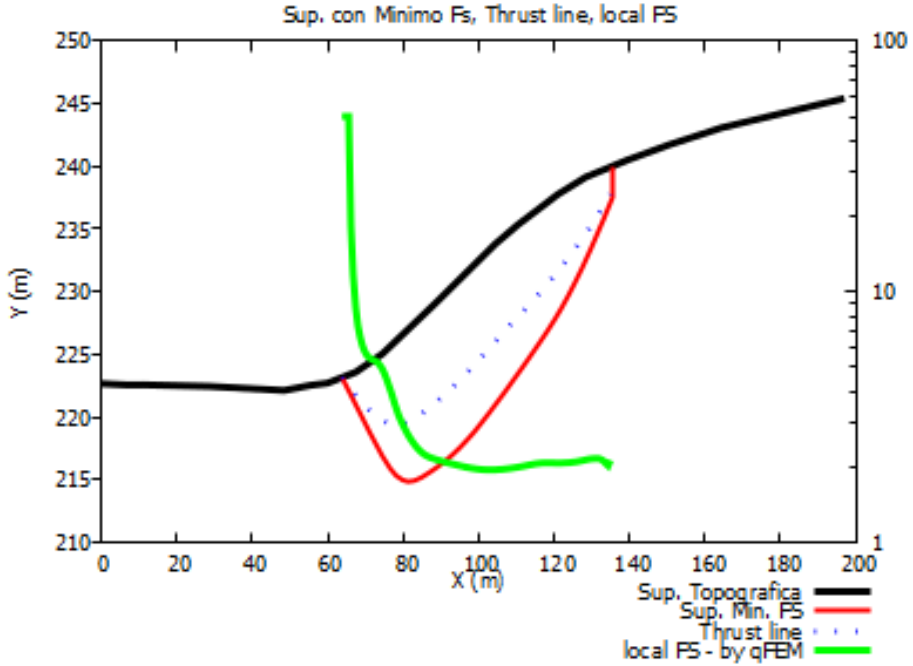
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 7.9
Range X inizio generazione : 3.9 - 181.2
Range X termine generazione : 23.6 - 193.1
Livello Y minimo considerato : 201.2

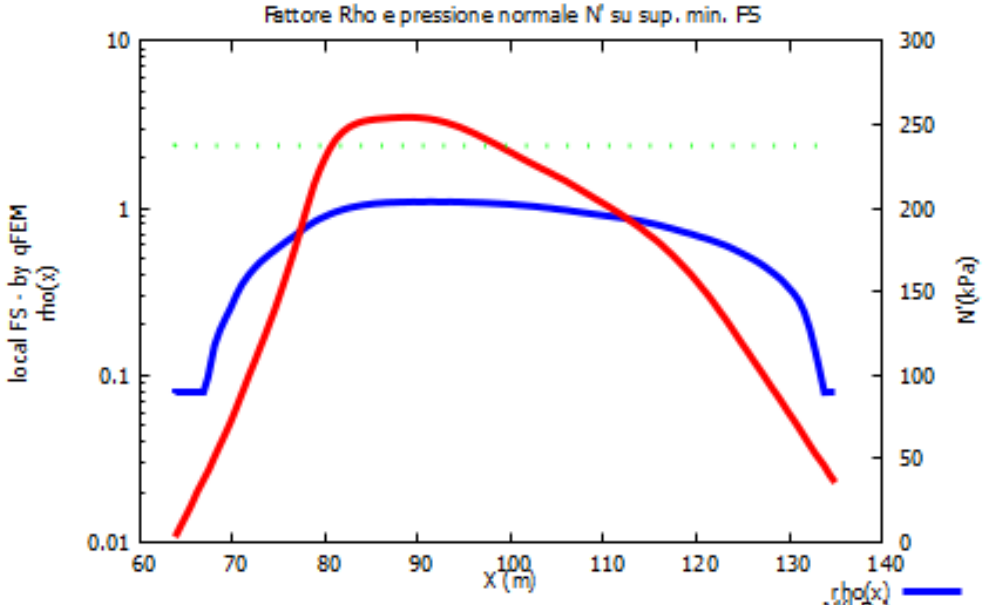
Parametri Geotecnici degli strati # ----------

N.	phi`	C`	Cu	Gamm	GammSat	sgci	GSI	mi	D
..	deg	kPa	kPa	kN/m3	kN/m3	MPa	..	..	..
1	26.00	19.50	0	20.00	22.00	0	0	0	0





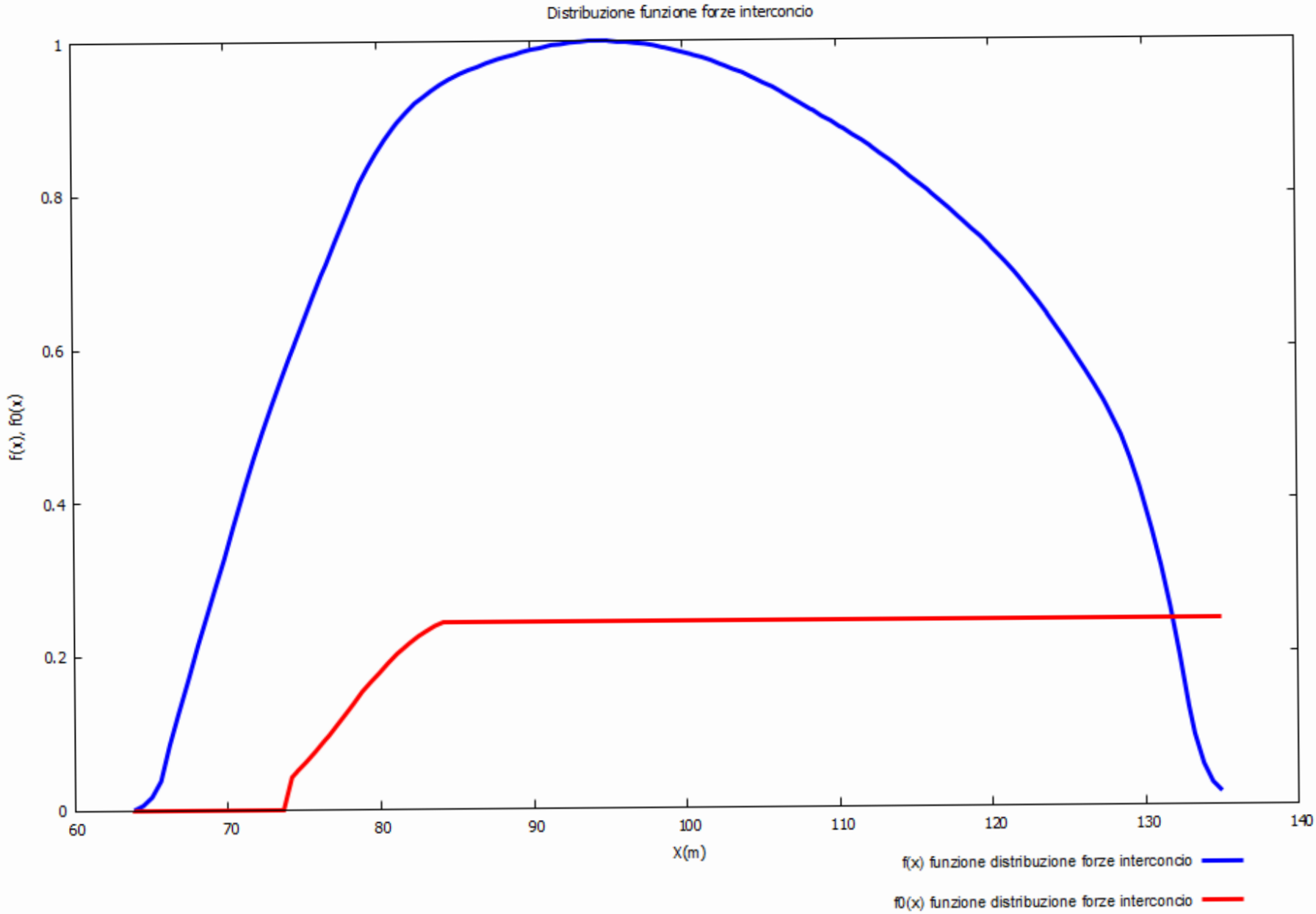


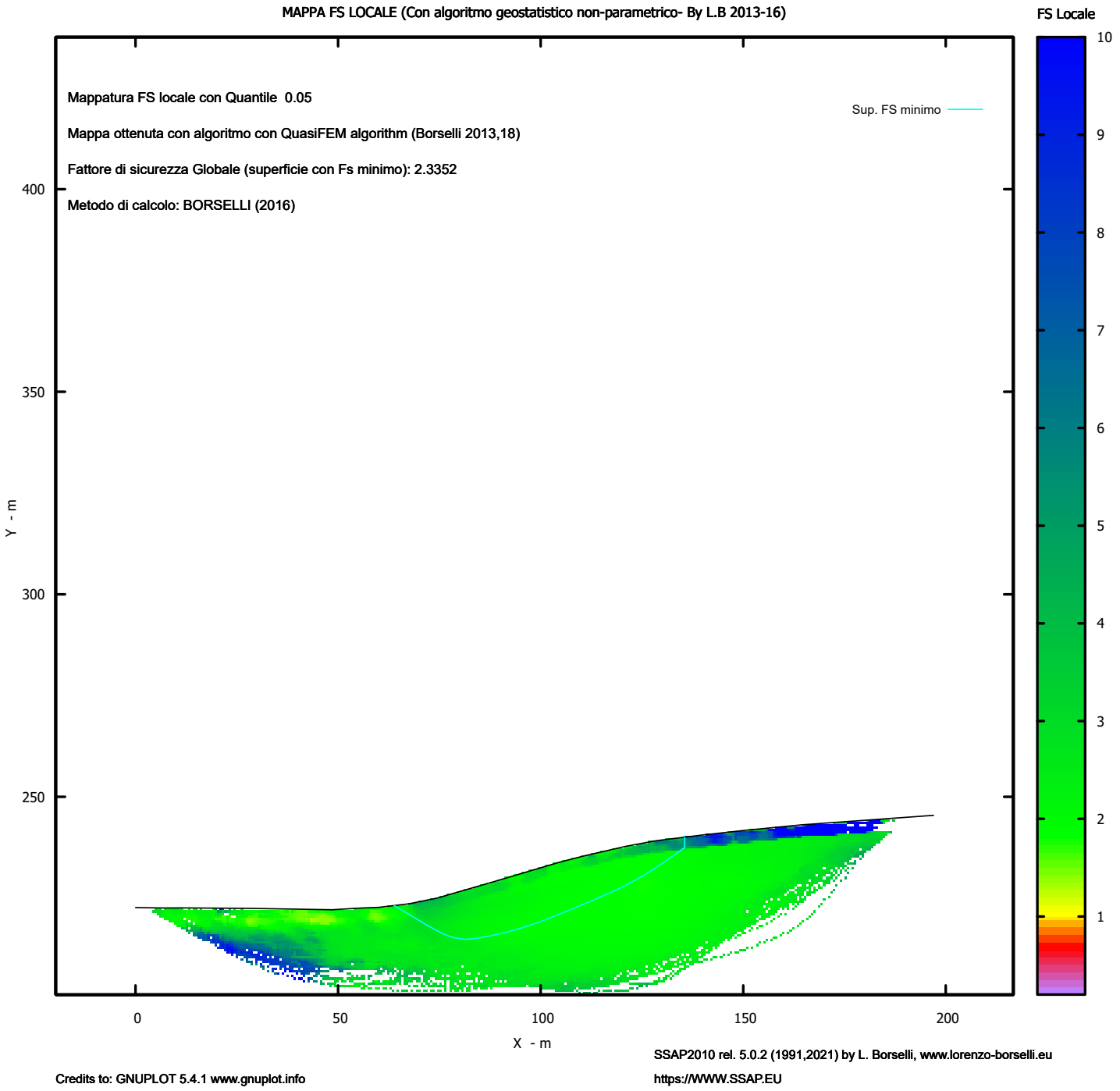


Metodo di calcolo: BORSELLI (2016)

SSAP2010 (versione 5.0.2 - 2021) - DISTRIBUZIONE FORZE e PRESSIONI

18/11/21 13:58


Distribuzione funzione forze interconcio
f(x), f0(x)
X(m)
0
0.2
0.4
0.6
0.8
1
60
70
80
90
100
110
120
130
140
f(x) funzione distribuzione forze interconcio
f0(x) funzione distribuzione forze interconcio


MAPPA FS LOCALE (Con algoritmo geostatistico non-parametrico- By L.B 2013-16)
FS Locale
Mappatura FS locale con Quantile 0.05
Mappa ottenuta con algoritmo con QuasiFEM algorithm (Borselli 2013,18)
Fattore di sicurezza Globale (superficie con Fs minimo): 2.3352
Metodo di calcolo: BORSELLI (2016)
Sup. FS minimo
Y - m
X - m
400
350
300
250
0
50
100
150
200
10
9
8
7
6
5
4
3
2
1
Credits to: GNUPLOT 5.4.1 www.gnuplot.info
SSAP2010 rel. 5.0.2 (1991,2021) by L. Borselli, www.lorenzo-borselli.eu
https://WWW.SSAP.EU

VERIFICA DI STABILITA' SEZIONE 1

CONDIZIONE NON DRENATA

Report elaborazioni

SSAP 5.0.2 - Slope Stability Analysis Program (1991,2021)
WWW.SSAP.EU
Build No. 11893
BY
Dr. Geol. LORENZO BORSELLI *,**
*UASLP, San Luis Potosi, Mexico
e-mail: lborselli@gmail.com
CV e WEB page personale: WWW.LORENZO-BORSELLI.EU
** Gia' Ricercatore CNR-IRPI fino a Luglio 2011

Ultima Revisione struttura tabelle del report: 21 Febbraio 2021

File report: C:\SSAP2010\CRACO SERRACARUSO CAP\VERIFICA 1\NON DRENATA\MORG\MORG.txt
Data: 18/11/2021
Localita' :
Descrizione:
Modello pendio: NONDRENATA.mod

---------- PARAMETRI DEL MODELLO DEL PENDIO ----------

__ PARAMETRI GEOMETRICI - Coordinate X Y (in m) __

SUP T.		SUP 2		SUP 3		SUP 4	
X	Y	X	Y	X	Y	X	Y
0.00	222.67	-	-	-	-	-	-
3.00	222.62	-	-	-	-	-	-
7.00	222.56	-	-	-	-	-	-
11.00	222.57	-	-	-	-	-	-
28.50	222.45	-	-	-	-	-	-
48.50	222.12	-	-	-	-	-	-
55.50	222.53	-	-	-	-	-	-
60.00	222.70	-	-	-	-	-	-
67.50	223.58	-	-	-	-	-	-
74.50	225.03	-	-	-	-	-	-
88.50	229.05	-	-	-	-	-	-
104.50	233.81	-	-	-	-	-	-
110.50	235.35	-	-	-	-	-	-
121.00	237.76	-	-	-	-	-	-
128.50	239.15	-	-	-	-	-	-
139.50	240.51	-	-	-	-	-	-
150.50	241.72	-	-	-	-	-	-
164.50	243.08	-	-	-	-	-	-
184.50	244.52	-	-	-	-	-	-
197.00	245.42	-	-	-	-	-	-

ASSENZA DI FALDA

------- PARAMETRI GEOMECCANICI -------

	fi`	C`	Cu	Gamm	Gamm_sat	STR_IDX	sgci	GSI	mi	D
STRATO 1	0.00	0.00	100.00	20.00	22.00	19.086	0.00	0.00	0.00	0.00

LEGENDA: fi`_____ Angolo di attrito interno efficace(in gradi)
C` _____ Coesione efficace (in Kpa)
Cu _____ Resistenza al taglio Non drenata (in Kpa)
Gamm _____ Peso di volume terreno fuori falda (in KN/m^3)
Gamm_sat __ Peso di volume terreno immerso (in KN/m^3)
STR_IDX ___ Indice di resistenza (usato in solo in 'SNIFF SEARCH) (adimensionale)
---- SOLO Per AMMASSI ROCCIOSI FRATTURATI - Parametri Criterio di Rottura di Hoek (2002)-
sigci _____ Resistenza Compressione Uniassiale Roccia Intatta (in MPa)
GSI _____ Geological Strenght Index ammasso(adimensionale)

mi _____ Indice litologico ammasso(adimensionale)
D _____ Fattore di disturbo ammasso(adimensionale)
Fattore di riduzione NTC2018: gammaPHI=1.25 e gammaC=1.25 - DISATTIVATO (solo per ROCCE)
Uso CRITERIO DI ROTTURA Hoek et al.(2002,2006) - non-lineare - Generalizzato, secondo Lei et al.(2016)

---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
MOTORE DI RICERCA: RANDOM SEARCH - Siegel (1981)
FILTRAGGIO SUPERFICI : ATTIVATO
COORDINATE X1,X2,Y OSTACOLO : 0.00 0.00 0.00
LUNGHEZZA MEDIA SEGMENTI (m)*: 7.9 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 3.94 181.24
LIVELLO MINIMO CONSIDERATO (Ymin): 210.00
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 23.64 193.06
TOTALE SUPERFICI GENERATE : 10000
*NOTA IMPORTANTE: La lunghezza media dei segmenti non viene cosiderata nel caso
di uso del motore di recerca NEW RANOM SEARCH

---------- INFORMAZIONI PARAMETRI DI CALCOLO ----------
METODO DI CALCOLO : MORGENSTERN - PRICE (Morgenstern & Price, 1965)
METODO DI ESPLORAZIONE CAMPO VALORI (lambda0,Fs0) ADOTTATO : A (rapido)
COEFFICIENTE SISMICO UTILIZZATO Kh : 0.0350
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0175
COEFFICIENTE c=Kv/Kh UTILIZZATO : 0.5000
FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00

N.B. Le forze orizzontali addizionali in testa e alla base sono poste uguali a 0
durante le tutte le verifiche globali.
I valori >0 impostati dall'utente sono utilizzati solo in caso di verifica singola

---------- RISULTATO FINALE ELABORAZIONI ----------
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* DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *

Fattore di sicurezza (FS) 1.6237 - Min. - X Y Lambda= 0.1783
57.80 222.62
63.43 217.47
66.01 215.21
67.66 213.92
68.96 213.06
70.31 212.39
71.43 211.97
72.70 211.66
74.11 211.45
75.97 211.29
77.64 211.17
79.19 211.06
80.69 210.97
82.16 210.89
83.63 210.82
85.11 210.76
86.64 210.71
88.23 210.66
89.70 210.66
91.13 210.68
92.52 210.74
93.96 210.84
95.35 210.97
96.77 211.14
98.23 211.35
99.80 211.60
101.33 211.85
102.83 212.10
104.32 212.35

105.79 212.60
107.27 212.85
108.74 213.11
110.22 213.36
111.70 213.62
113.18 213.88
114.65 214.14
116.13 214.39
117.60 214.64
119.09 214.89
120.57 215.14
122.06 215.39
123.57 215.64
125.04 215.90
126.50 216.16
127.95 216.44
129.41 216.74
130.88 217.04
132.39 217.37
133.95 217.73
135.61 218.12
137.06 218.51
138.46 218.96
139.78 219.45
141.20 220.04
142.53 220.67
143.93 221.40
145.40 222.23
147.06 223.24
148.61 224.20
150.11 225.15
151.58 226.09
153.04 227.05
154.49 228.03
155.95 229.03
157.43 230.07
158.95 231.15
160.44 232.23
161.92 233.30
162.79 233.94
162.79 242.91

Fattore di sicurezza (FS) 1.6637 - N.2 -- X Y Lambda= 0.1750
65.93 223.40
74.76 217.91
78.88 215.46
81.61 214.03
83.84 213.04
86.07 212.28
88.05 211.76
90.25 211.37
92.67 211.10
95.70 210.92
98.26 210.83
100.61 210.84
102.80 210.93
105.09 211.13
107.26 211.41
109.53 211.80
111.93 212.29
114.67 212.93
117.14 213.57
119.51 214.23
121.79 214.92
124.12 215.68

126.38	216.47
128.69	217.34
131.06	218.28
133.59	219.33
136.03	220.34
138.42	221.31
140.79	222.25
143.15	223.17
145.53	224.08
147.95	225.00
150.46	225.93
153.11	226.89
155.44	227.84
157.69	228.86
159.82	229.94
162.12	231.23
164.53	232.76
167.07	234.50
167.07	243.26

Fattore di sicurezza (FS) 1.6639 - N.3 -- X Y Lambda= 0.1594

64.86	223.27
73.95	218.37
78.27	216.15
81.17	214.81
83.60	213.84
85.97	213.09
88.13	212.54
90.47	212.09
92.97	211.74
95.97	211.45
98.61	211.26
101.10	211.13
103.47	211.07
105.91	211.08
108.26	211.15
110.69	211.29
113.23	211.50
116.03	211.79
118.58	212.11
121.02	212.47
123.39	212.88
125.82	213.36
128.19	213.89
130.65	214.50
133.21	215.20
136.03	216.03
138.55	216.84
140.98	217.70
143.31	218.60
145.73	219.63
148.06	220.69
150.48	221.88
153.00	223.21
155.78	224.74
158.34	226.21
160.81	227.70
163.21	229.20
165.66	230.80
168.34	232.64
170.99	234.53
170.99	243.55

Fattore di sicurezza (FS) 1.6657 - N.4 -- X Y Lambda= 0.1610

56.71 222.58
68.59 217.33
74.22 214.97
77.99 213.59
81.14 212.63
84.23 211.94
87.05 211.47
90.09 211.16
93.35 211.00
97.25 210.96
100.71 210.99
103.96 211.10
107.06 211.29
110.23 211.56
113.32 211.91
116.52 212.35
119.88 212.90
123.61 213.58
126.90 214.28
130.04 215.06
133.04 215.91
136.18 216.94
139.18 218.03
142.31 219.29
145.59 220.72
149.25 222.43
152.61 224.07
155.85 225.73
158.99 227.41
162.18 229.20
165.67 231.26
169.64 233.70
171.55 234.93
171.55 243.59

Fattore di sicurezza (FS) 1.6769 - N.5 -- X Y Lambda= 0.1659
62.38 222.98
73.69 217.31
78.92 214.84
82.36 213.43
85.15 212.53
87.97 211.91
90.44 211.56
93.17 211.41
96.14 211.44
99.82 211.66
103.13 211.90
106.23 212.17
109.22 212.48
112.20 212.83
115.15 213.22
118.17 213.67
121.30 214.18
124.67 214.77
127.69 215.38
130.60 216.07
133.40 216.83
136.33 217.73
139.15 218.69
142.09 219.80
145.18 221.07
148.65 222.59
151.75 224.04
154.71 225.53
157.55 227.06

160.50 228.76
163.67 230.74
167.32 233.16
169.10 234.40
169.10 243.41

Fattore di sicurezza (FS) 1.6846 - N.6 -- X Y Lambda= 0.1831
61.86 222.92
68.01 217.90
70.84 215.69
72.67 214.42
74.13 213.55
75.63 212.88
76.91 212.44
78.35 212.10
79.95 211.87
82.02 211.70
83.82 211.57
85.48 211.50
87.06 211.46
88.65 211.46
90.20 211.50
91.80 211.57
93.46 211.68
95.27 211.84
96.92 212.02
98.52 212.22
100.06 212.46
101.65 212.75
103.18 213.06
104.75 213.42
106.36 213.83
108.08 214.29
109.76 214.75
111.41 215.20
113.04 215.63
114.66 216.07
116.30 216.50
117.94 216.93
119.62 217.37
121.32 217.81
122.93 218.20
124.51 218.55
126.05 218.86
127.65 219.14
129.21 219.38
130.83 219.60
132.53 219.79
134.40 219.97
136.03 220.18
137.59 220.44
139.06 220.75
140.63 221.15
142.11 221.59
143.67 222.12
145.31 222.74
147.18 223.51
148.87 224.25
150.49 224.99
152.05 225.76
153.64 226.58
155.19 227.42
156.78 228.33
158.42 229.32
160.18 230.41

161.84 231.48
163.46 232.54
165.04 233.62
165.91 234.23
165.91 243.18

Fattore di sicurezza (FS) 1.6862 - N.7 -- X Y Lambda= 0.1743
62.62 223.01
71.39 217.45
75.43 215.03
78.05 213.64
80.16 212.73
82.31 212.06
84.18 211.65
86.27 211.39
88.58 211.29
91.53 211.32
94.09 211.39
96.45 211.52
98.68 211.70
100.95 211.94
103.14 212.24
105.40 212.60
107.74 213.04
110.29 213.57
112.68 214.10
115.00 214.65
117.27 215.22
119.56 215.83
121.84 216.47
124.17 217.16
126.59 217.91
129.18 218.75
131.51 219.57
133.74 220.45
135.88 221.38
138.14 222.45
140.28 223.56
142.51 224.79
144.80 226.16
147.33 227.74
149.76 229.25
152.12 230.71
154.46 232.13
156.77 233.53
156.77 242.33

Fattore di sicurezza (FS) 1.6874 - N.8 -- X Y Lambda= 0.1749
55.66 222.54
62.00 218.81
65.05 217.09
67.12 216.02
68.87 215.21
70.55 214.56
72.11 214.04
73.76 213.58
75.50 213.18
77.51 212.80
79.38 212.46
81.16 212.17
82.89 211.90
84.62 211.66
86.34 211.45
88.09 211.25

89.90 211.07
91.82 210.90
93.58 210.78
95.29 210.71
96.94 210.68
98.66 210.69
100.33 210.74
102.06 210.84
103.87 210.99
105.88 211.20
107.67 211.43
109.37 211.71
111.00 212.03
112.70 212.42
114.32 212.85
115.99 213.36
117.72 213.94
119.61 214.62
121.45 215.29
123.25 215.95
125.02 216.60
126.77 217.24
128.54 217.89
130.30 218.55
132.07 219.21
133.85 219.88
135.61 220.52
137.35 221.14
139.08 221.75
140.82 222.35
142.56 222.93
144.31 223.50
146.09 224.07
147.92 224.64
149.68 225.21
151.41 225.80
153.13 226.40
154.86 227.03
156.60 227.68
158.38 228.37
160.23 229.12
162.23 229.94
163.96 230.74
165.62 231.59
167.19 232.49
168.88 233.56
170.66 234.82
170.66 243.52

Fattore di sicurezza (FS) 1.6877 - N.9 -- X Y Lambda= 0.1765
65.85 223.39
72.72 218.63
75.87 216.55
77.92 215.35
79.57 214.56
81.24 213.96
82.68 213.60
84.28 213.34
86.03 213.21
88.25 213.17
90.27 213.15
92.18 213.13
94.02 213.13
95.82 213.14
97.62 213.17

99.42	213.20
101.24	213.24
103.08	213.30
104.91	213.36
106.73	213.42
108.55	213.48
110.36	213.55
112.20	213.62
114.04	213.70
115.93	213.78
117.86	213.86
119.65	213.98
121.40	214.14
123.11	214.33
124.88	214.59
126.59	214.88
128.36	215.22
130.19	215.62
132.19	216.10
134.05	216.58
135.86	217.07
137.63	217.57
139.42	218.12
141.19	218.68
142.99	219.29
144.84	219.94
146.79	220.65
148.63	221.35
150.42	222.08
152.17	222.82
153.96	223.61
155.73	224.43
157.55	225.31
159.45	226.27
161.51	227.34
163.33	228.37
165.06	229.44
166.71	230.56
168.47	231.85
170.33	233.36
172.05	234.87
172.05	243.62

Fattore di sicurezza (FS) 1.6892 - N.10 -- X Y Lambda= 0.1805

63.17	223.07
68.18	218.13
70.48	215.94
71.97	214.67
73.15	213.81
74.36	213.12
75.38	212.66
76.54	212.29
77.82	212.01
79.51	211.74
80.98	211.54
82.35	211.37
83.65	211.23
84.95	211.11
86.21	211.02
87.50	210.96
88.81	210.91
90.19	210.88
91.54	210.86
92.88	210.83
94.20	210.81

95.52	210.80
96.84	210.78
98.16	210.77
99.50	210.76
100.84	210.75
102.16	210.75
103.47	210.77
104.77	210.78
106.08	210.81
107.41	210.85
108.77	210.90
110.20	210.96
111.74	211.04
113.03	211.16
114.24	211.34
115.36	211.59
116.60	211.96
117.73	212.36
118.95	212.89
120.25	213.52
121.79	214.34
123.22	215.12
124.57	215.88
125.89	216.63
127.20	217.39
128.50	218.16
129.82	218.97
131.18	219.80
132.58	220.69
133.91	221.50
135.20	222.25
136.46	222.96
137.76	223.65
139.02	224.30
140.32	224.93
141.64	225.54
143.07	226.16
144.41	226.74
145.73	227.28
147.02	227.80
148.33	228.30
149.61	228.78
150.93	229.24
152.27	229.70
153.67	230.16
155.01	230.62
156.31	231.10
157.58	231.58
158.88	232.10
160.17	232.64
161.48	233.21
162.84	233.82
163.70	234.22
163.70	243.00

---------- ANALISI DEFICIT DI RESISTENZA ----------
DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *
Analisi Deficit in riferimento a FS(progetto) = 1.100

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	1.624	12075.2	7436.8	3894.8	Surplus
2	1.664	11675.8	7018.0	3956.0	Surplus
3	1.664	12162.9	7309.8	4122.1	Surplus
4	1.666	12882.2	7733.9	4374.8	Surplus
5	1.677	12071.4	7198.5	4153.1	Surplus

6	1.685	11826.1	7020.0	4104.0	Surplus
7	1.686	10901.4	6464.9	3790.0	Surplus
8	1.687	12848.7	7614.2	4473.0	Surplus
9	1.688	12013.2	7118.3	4183.1	Surplus
10	1.689	11906.2	7048.6	4152.7	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 3790.0

Note: FTR --> Forza totale Resistente lungo la superficie
di scivolamento
FTA --> Forza totale Agente lungo la superficie
di scivolamento

IMPORTANTE! : Il Deficit o il Surplus di resistenza viene espresso in kN
per metro di LARGHEZZA rispetto al fronte della scarpata

TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (°)	W (kN/m)	ru (-)	U (kPa)	phi' (°)	(c',Cu) (kPa)
57.797	0.874	-42.43	7.40	0.00	0.00	0.00	100.00
58.671	0.874	-42.43	22.20	0.00	0.00	0.00	100.00
59.546	0.454	-42.43	17.39	0.00	0.00	0.00	100.00
60.000	0.874	-42.43	45.31	0.00	0.00	0.00	100.00
60.874	0.874	-42.43	61.34	0.00	0.00	0.00	100.00
61.748	0.874	-42.43	77.38	0.00	0.00	0.00	100.00
62.622	0.811	-42.43	86.11	0.00	0.00	0.00	100.00
63.433	0.874	-41.19	107.99	0.00	0.00	0.00	100.00
64.307	0.874	-41.19	123.41	0.00	0.00	0.00	100.00
65.181	0.828	-41.19	131.18	0.00	0.00	0.00	100.00
66.010	0.874	-38.05	152.75	0.00	0.00	0.00	100.00
66.884	0.616	-38.05	116.10	0.00	0.00	0.00	100.00
67.500	0.161	-38.05	31.46	0.00	0.00	0.00	100.00
67.661	0.874	-33.30	179.15	0.00	0.00	0.00	100.00
68.535	0.429	-33.30	92.78	0.00	0.00	0.00	100.00
68.964	0.874	-26.48	197.95	0.00	0.00	0.00	100.00
69.838	0.468	-26.48	110.59	0.00	0.00	0.00	100.00
70.306	0.874	-20.60	213.84	0.00	0.00	0.00	100.00
71.180	0.246	-20.60	61.69	0.00	0.00	0.00	100.00
71.426	0.874	-13.93	224.46	0.00	0.00	0.00	100.00
72.300	0.402	-13.93	105.69	0.00	0.00	0.00	100.00
72.702	0.874	-8.44	234.02	0.00	0.00	0.00	100.00
73.576	0.534	-8.44	145.81	0.00	0.00	0.00	100.00
74.111	0.389	-4.72	107.38	0.00	0.00	0.00	100.00
74.500	0.874	-4.72	245.04	0.00	0.00	0.00	100.00
75.374	0.594	-4.72	169.77	0.00	0.00	0.00	100.00
75.968	0.874	-4.37	254.65	0.00	0.00	0.00	100.00
76.842	0.797	-4.37	237.09	0.00	0.00	0.00	100.00
77.639	0.874	-3.98	265.40	0.00	0.00	0.00	100.00
78.513	0.679	-3.98	210.11	0.00	0.00	0.00	100.00
79.193	0.874	-3.56	275.20	0.00	0.00	0.00	100.00
80.067	0.626	-3.56	200.34	0.00	0.00	0.00	100.00
80.692	0.874	-3.12	284.46	0.00	0.00	0.00	100.00
81.567	0.591	-3.12	195.45	0.00	0.00	0.00	100.00
82.158	0.874	-2.71	293.31	0.00	0.00	0.00	100.00
83.032	0.593	-2.71	202.02	0.00	0.00	0.00	100.00
83.625	0.874	-2.30	301.98	0.00	0.00	0.00	100.00
84.499	0.613	-2.30	214.93	0.00	0.00	0.00	100.00
85.113	0.874	-1.90	310.59	0.00	0.00	0.00	100.00
85.987	0.651	-1.90	234.38	0.00	0.00	0.00	100.00
86.637	0.874	-1.52	319.22	0.00	0.00	0.00	100.00
87.511	0.714	-1.52	264.51	0.00	0.00	0.00	100.00

88.226	0.274	-0.31	102.39	0.00	0.00	0.00	100.00
88.500	0.874	-0.31	329.43	0.00	0.00	0.00	100.00
89.374	0.321	-0.31	122.30	0.00	0.00	0.00	100.00
89.695	0.874	1.04	335.69	0.00	0.00	0.00	100.00
90.570	0.557	1.04	216.04	0.00	0.00	0.00	100.00
91.126	0.874	2.48	342.60	0.00	0.00	0.00	100.00
92.000	0.516	2.48	204.29	0.00	0.00	0.00	100.00
92.517	0.874	3.91	348.69	0.00	0.00	0.00	100.00
93.391	0.570	3.91	229.14	0.00	0.00	0.00	100.00
93.961	0.874	5.33	354.38	0.00	0.00	0.00	100.00
94.835	0.514	5.33	209.93	0.00	0.00	0.00	100.00
95.349	0.874	6.75	359.23	0.00	0.00	0.00	100.00
96.223	0.551	6.75	227.83	0.00	0.00	0.00	100.00
96.774	0.874	8.08	363.59	0.00	0.00	0.00	100.00
97.648	0.584	8.08	244.13	0.00	0.00	0.00	100.00
98.232	0.874	9.27	367.46	0.00	0.00	0.00	100.00
99.106	0.691	9.27	292.04	0.00	0.00	0.00	100.00
99.797	0.874	9.35	371.18	0.00	0.00	0.00	100.00
100.671	0.656	9.35	280.12	0.00	0.00	0.00	100.00
101.328	0.874	9.44	374.79	0.00	0.00	0.00	100.00
102.202	0.626	9.44	269.64	0.00	0.00	0.00	100.00
102.828	0.874	9.52	378.28	0.00	0.00	0.00	100.00
103.702	0.616	9.52	267.59	0.00	0.00	0.00	100.00
104.317	0.183	9.60	79.65	0.00	0.00	0.00	100.00
104.500	0.874	9.60	381.81	0.00	0.00	0.00	100.00
105.374	0.415	9.60	181.62	0.00	0.00	0.00	100.00
105.789	0.874	9.69	383.80	0.00	0.00	0.00	100.00
106.663	0.603	9.69	265.49	0.00	0.00	0.00	100.00
107.266	0.874	9.77	386.05	0.00	0.00	0.00	100.00
108.140	0.601	9.77	266.03	0.00	0.00	0.00	100.00
108.741	0.874	9.85	388.25	0.00	0.00	0.00	100.00
109.615	0.605	9.85	269.62	0.00	0.00	0.00	100.00
110.220	0.280	9.93	124.94	0.00	0.00	0.00	100.00
110.500	0.874	9.93	390.62	0.00	0.00	0.00	100.00
111.374	0.322	9.93	144.15	0.00	0.00	0.00	100.00
111.696	0.874	9.87	391.79	0.00	0.00	0.00	100.00
112.570	0.606	9.87	272.31	0.00	0.00	0.00	100.00
113.177	0.874	9.81	393.26	0.00	0.00	0.00	100.00
114.051	0.602	9.81	271.23	0.00	0.00	0.00	100.00
114.653	0.874	9.74	394.76	0.00	0.00	0.00	100.00
115.527	0.604	9.74	273.45	0.00	0.00	0.00	100.00
116.131	0.874	9.68	396.29	0.00	0.00	0.00	100.00
117.005	0.598	9.68	271.56	0.00	0.00	0.00	100.00
117.603	0.874	9.61	397.84	0.00	0.00	0.00	100.00
118.477	0.608	9.61	277.37	0.00	0.00	0.00	100.00
119.085	0.874	9.55	399.44	0.00	0.00	0.00	100.00
119.959	0.609	9.55	279.07	0.00	0.00	0.00	100.00
120.569	0.431	9.48	197.71	0.00	0.00	0.00	100.00
121.000	0.874	9.48	401.20	0.00	0.00	0.00	100.00
121.874	0.191	9.48	87.63	0.00	0.00	0.00	100.00
122.065	0.874	9.42	401.56	0.00	0.00	0.00	100.00
122.939	0.629	9.42	289.33	0.00	0.00	0.00	100.00
123.568	0.874	9.89	402.01	0.00	0.00	0.00	100.00
124.443	0.598	9.89	274.97	0.00	0.00	0.00	100.00
125.040	0.874	10.36	402.23	0.00	0.00	0.00	100.00
125.914	0.585	10.36	269.24	0.00	0.00	0.00	100.00
126.499	0.874	10.85	402.23	0.00	0.00	0.00	100.00
127.374	0.575	10.85	264.73	0.00	0.00	0.00	100.00
127.949	0.551	11.34	253.45	0.00	0.00	0.00	100.00
128.500	0.874	11.34	401.37	0.00	0.00	0.00	100.00
129.374	0.039	11.34	17.66	0.00	0.00	0.00	100.00
129.413	0.874	11.84	400.05	0.00	0.00	0.00	100.00
130.287	0.597	11.84	272.26	0.00	0.00	0.00	100.00
130.883	0.874	12.33	397.73	0.00	0.00	0.00	100.00
131.757	0.628	12.33	284.81	0.00	0.00	0.00	100.00
132.385	0.874	12.80	395.13	0.00	0.00	0.00	100.00

133.259	0.687	12.80	309.41	0.00	0.00	0.00	100.00
133.946	0.874	13.23	392.19	0.00	0.00	0.00	100.00
134.821	0.788	13.23	352.29	0.00	0.00	0.00	100.00
135.609	0.874	15.26	388.60	0.00	0.00	0.00	100.00
136.483	0.580	15.26	256.67	0.00	0.00	0.00	100.00
137.063	0.874	17.68	384.39	0.00	0.00	0.00	100.00
137.937	0.519	17.68	226.80	0.00	0.00	0.00	100.00
138.457	0.874	20.30	379.15	0.00	0.00	0.00	100.00
139.331	0.169	20.30	73.03	0.00	0.00	0.00	100.00
139.500	0.279	20.30	119.86	0.00	0.00	0.00	100.00
139.779	0.874	22.79	372.80	0.00	0.00	0.00	100.00
140.653	0.546	22.79	230.49	0.00	0.00	0.00	100.00
141.199	0.874	25.21	364.57	0.00	0.00	0.00	100.00
142.073	0.457	25.21	188.53	0.00	0.00	0.00	100.00
142.531	0.874	27.56	355.62	0.00	0.00	0.00	100.00
143.405	0.526	27.56	211.11	0.00	0.00	0.00	100.00
143.931	0.874	29.57	345.01	0.00	0.00	0.00	100.00
144.805	0.593	29.57	230.20	0.00	0.00	0.00	100.00
145.399	0.874	31.19	332.78	0.00	0.00	0.00	100.00
146.273	0.783	31.19	291.53	0.00	0.00	0.00	100.00
147.056	0.874	31.70	318.08	0.00	0.00	0.00	100.00
147.930	0.682	31.70	242.72	0.00	0.00	0.00	100.00
148.612	0.874	32.25	303.92	0.00	0.00	0.00	100.00
149.486	0.625	32.25	212.37	0.00	0.00	0.00	100.00
150.111	0.389	32.82	129.99	0.00	0.00	0.00	100.00
150.500	0.874	32.82	286.12	0.00	0.00	0.00	100.00
151.374	0.203	32.82	65.16	0.00	0.00	0.00	100.00
151.577	0.874	33.40	275.51	0.00	0.00	0.00	100.00
152.451	0.588	33.40	180.50	0.00	0.00	0.00	100.00
153.039	0.874	33.94	260.78	0.00	0.00	0.00	100.00
153.913	0.573	33.94	166.18	0.00	0.00	0.00	100.00
154.487	0.874	34.48	245.85	0.00	0.00	0.00	100.00
155.361	0.587	34.48	159.82	0.00	0.00	0.00	100.00
155.947	0.874	35.00	230.42	0.00	0.00	0.00	100.00
156.821	0.604	35.00	153.86	0.00	0.00	0.00	100.00
157.426	0.874	35.50	214.46	0.00	0.00	0.00	100.00
158.300	0.646	35.50	152.37	0.00	0.00	0.00	100.00
158.946	0.874	35.74	197.74	0.00	0.00	0.00	100.00
159.820	0.621	35.74	134.53	0.00	0.00	0.00	100.00
160.441	0.874	36.00	181.14	0.00	0.00	0.00	100.00
161.315	0.603	36.00	119.32	0.00	0.00	0.00	100.00
161.918	0.874	36.25	164.55	0.00	0.00	0.00	100.00

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
alpha(°) : Angolo pendenza base concio
W(kN/m) : Forza peso concio
ru(-) : Coefficiente locale pressione interstiziale
U(kPa) : Pressione totale dei pori base concio
phi'(°) : Angolo di attrito efficace base concio
c'/Cu (kPa) : Coesione efficace o Resistenza al taglio in condizioni non drenate

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TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	ht (m)	yt (m)	yt' (--)	E(x) (kN/m)	T(x) (kN/m)	E' (kN)	rho(x) (--)	FS_qFEM (--)	FS_srmFEM (--)		
57.797	0.000	222.617	-0.705	0.0000000000E+000	0.0000000000E+000	4.2056741292E+000	0.054	4.143	5.622		
58.671	0.209	222.027	-0.705	2.6160943082E+001	2.9744131238E-002	5.5651660799E+001	0.054	4.143	5.622		
59.546	0.366	221.385	-0.661	9.7291329949E+001	6.4775549281E-001	9.2934438240E+001	0.054	2.015	2.729		
60.000	0.544	221.148	-0.566	1.4225614994E+002	1.5165980094E+000	1.1656236885E+002	0.054	1.790	2.423		
60.874	0.828	220.633	-0.590	2.7376602374E+002	5.9536735628E+000	1.6860016334E+002	0.054	1.486	2.007		
61.748	1.111	220.117	-0.582	4.3700627754E+002	1.4986569053E+001	1.9918851215E+002	0.062	1.315	1.768		

62.622	1.409	219.616	-0.618	6.2199130542E+002	2.8502325397E+001	2.4821507576E+002	0.096	1.225	1.634
63.433	1.610	219.076	-0.621	8.5076996462E+002	4.8392321476E+001	2.7407876767E+002	0.139	1.192	1.565
64.307	1.869	218.570	-0.555	1.0827348637E+003	7.0050703439E+001	2.5280316278E+002	0.175	1.199	1.530
65.181	2.170	218.106	-0.511	1.2927254349E+003	8.9508002329E+001	2.4150030695E+002	0.197	1.205	1.494
66.010	2.489	217.700	-0.446	1.4937425003E+003	1.0936196904E+002	2.3313927412E+002	0.217	1.250	1.488
66.884	2.819	217.346	-0.380	1.6887114958E+003	1.3011811957E+002	2.1127972090E+002	0.235	1.341	1.507
67.500	3.089	217.134	-0.336	1.8138018650E+003	1.4403286696E+002	1.9295573458E+002	0.245	1.428	1.529
67.661	3.166	217.085	-0.295	1.8444033544E+003	1.4755154652E+002	1.9135460101E+002	0.247	1.456	1.536
68.535	3.484	216.829	-0.282	2.0164905113E+003	1.6825622966E+002	1.8911884206E+002	0.261	1.654	1.584
68.964	3.654	216.718	-0.230	2.0959416115E+003	1.7812616562E+002	1.8139631322E+002	0.267	1.779	1.611
69.838	3.901	216.529	-0.200	2.2475156693E+003	1.9807315539E+002	1.6063317454E+002	0.281	2.102	1.673
70.306	4.055	216.450	-0.154	2.3195541451E+003	2.0803004245E+002	1.5152477501E+002	0.287	2.321	1.707
71.180	4.257	216.323	-0.141	2.4483092818E+003	2.2664404559E+002	1.4402627734E+002	0.300	2.847	1.776
71.426	4.318	216.292	-0.101	2.4834447074E+003	2.3195638396E+002	1.4040806087E+002	0.303	3.036	1.797
72.300	4.453	216.210	-0.085	2.5977770131E+003	2.5015569196E+002	1.2377152585E+002	0.317	3.822	1.871
72.702	4.527	216.184	-0.052	2.6462745643E+003	2.5835418430E+002	1.2036972113E+002	0.323	4.252	1.906
73.576	4.616	216.144	-0.035	2.7511731761E+003	2.7700517184E+002	1.1380477022E+002	0.338	5.347	1.989
74.111	4.686	216.134	-0.006	2.8099703051E+003	2.8817371228E+002	1.0048650273E+002	0.347	5.968	2.041
74.500	4.722	216.138	0.021	2.8463799132E+003	2.9562313014E+002	9.3842396459E+001	0.353	6.282	2.077
75.374	4.817	216.161	0.035	2.9289843347E+003	3.1317233450E+002	9.0138554270E+001	0.365	6.783	2.167
75.968	4.895	216.190	0.058	2.9807572237E+003	3.2493964326E+002	8.7249992585E+001	0.373	6.802	2.233
76.842	5.018	216.246	0.073	3.0571205136E+003	3.4291142268E+002	8.7395380525E+001	0.385	6.512	2.343
77.639	5.145	216.312	0.087	3.1267939582E+003	3.5997445668E+002	8.3830797513E+001	0.396	6.026	2.462
78.513	5.285	216.391	0.094	3.1966238462E+003	3.7760507747E+002	8.0026723792E+001	0.407	5.444	2.602
79.193	5.399	216.458	0.101	3.2510667200E+003	3.9159070587E+002	7.8457962267E+001	0.415	5.047	2.727
80.067	5.543	216.548	0.104	3.3177610378E+003	4.0895067123E+002	7.5525036744E+001	0.425	4.655	2.903
80.692	5.648	216.614	0.103	3.3646734492E+003	4.2130809401E+002	7.2074710072E+001	0.432	4.435	3.040
81.567	5.784	216.703	0.103	3.4241387700E+003	4.3713815520E+002	6.7831715283E+001	0.440	4.191	3.231
82.158	5.879	216.765	0.109	3.4641706276E+003	4.4790854392E+002	6.7765482937E+001	0.445	4.050	3.365
83.032	6.018	216.863	0.115	3.5234924742E+003	4.6407176038E+002	6.8510522420E+001	0.453	3.867	3.567
83.625	6.117	216.934	0.119	3.5643942470E+003	4.7534074634E+002	6.7685498929E+001	0.458	3.760	3.699
84.499	6.256	217.038	0.121	3.6219323079E+003	4.9132844705E+002	6.5578836602E+001	0.466	3.625	3.878
85.113	6.357	217.114	0.123	3.6620482565E+003	5.0257966042E+002	6.3314766677E+001	0.471	3.541	3.986
85.987	6.492	217.220	0.125	3.7147867832E+003	5.1751196501E+002	5.9959049601E+001	0.477	3.444	4.098
86.637	6.598	217.304	0.127	3.7536105017E+003	5.2864733081E+002	5.7017293475E+001	0.482	3.377	4.149
87.511	6.730	217.413	0.128	3.8003224317E+003	5.4223495937E+002	5.2120667872E+001	0.487	3.302	4.166
88.226	6.843	217.507	0.130	3.8367861228E+003	5.5308197165E+002	4.7896120866E+001	0.491	3.244	4.140
88.500	6.879	217.542	0.135	3.8495902909E+003	5.5693666216E+002	4.6161655038E+001	0.492	3.224	4.124
89.374	7.004	217.662	0.137	3.8884740484E+003	5.6907225342E+002	4.0903299219E+001	0.495	3.155	4.024
89.695	7.049	217.705	0.143	3.9011956955E+003	5.7315152586E+002	3.9050899028E+001	0.496	3.130	3.980
90.570	7.160	217.832	0.149	3.9340559661E+003	5.8419171339E+002	3.5867262899E+001	0.499	3.057	3.833
91.126	7.236	217.919	0.159	3.9534104719E+003	5.9104544032E+002	3.2896090555E+001	0.501	3.006	3.727
92.000	7.340	218.060	0.167	3.9795954748E+003	6.0111262698E+002	2.8071491319E+001	0.504	2.922	3.550
92.517	7.408	218.150	0.176	3.9935191531E+003	6.0692755314E+002	2.5041068470E+001	0.505	2.867	3.440
93.391	7.503	218.305	0.185	4.0125722563E+003	6.1590390124E+002	1.9733090761E+001	0.508	2.773	3.258
93.961	7.576	218.418	0.198	4.0230461710E+003	6.2167097412E+002	1.6434554917E+001	0.509	2.706	3.136
94.835	7.669	218.592	0.200	4.0347913269E+003	6.2964052486E+002	9.1323487155E+000	0.511	2.605	2.960
95.349	7.724	218.695	0.204	4.0381849709E+003	6.3353816044E+002	5.2763513884E+000	0.511	2.548	2.865
96.223	7.801	218.875	0.209	4.0408291855E+003	6.3960406631E+002	-2.7456978111E-001	0.512	2.454	2.711
96.774	7.853	218.992	0.215	4.0395323382E+003	6.4279327603E+002	-3.7862771404E+000	0.512	2.397	2.620
97.648	7.918	219.181	0.222	4.0342363176E+003	6.4715190913E+002	-8.8335151510E+000	0.512	2.314	2.488
98.232	7.969	219.316	0.239	4.0279988343E+003	6.4959796208E+002	-1.2380447436E+001	0.512	2.260	2.402
99.106	8.041	219.530	0.250	4.0149593351E+003	6.5261747597E+002	-1.6994629600E+001	0.512	2.186	2.279
99.797	8.105	219.707	0.249	4.0020772982E+003	6.5449071006E+002	-1.9196375797E+001	0.511	2.132	2.188
100.671	8.173	219.919	0.245	3.9846793785E+003	6.5609813803E+002	-2.1079696749E+001	0.509	2.074	2.090
101.328	8.227	220.081	0.237	3.9702615842E+003	6.5695870086E+002	-2.1885941779E+001	0.508	2.035	2.023
102.202	8.282	220.281	0.230	3.9512205109E+003	6.5755072177E+002	-2.2573837572E+001	0.505	1.993	1.947
102.828	8.323	220.426	0.220	3.9367358684E+003	6.5770775127E+002	-2.2764543063E+001	0.504	1.965	1.896
103.702	8.362	220.612	0.216	3.9172953160E+003	6.5756754706E+002	-2.3282261071E+001	0.501	1.932	1.837
104.317	8.395	220.748	0.221	3.9025126038E+003	6.5721991614E+002	-2.4723207369E+001	0.499	1.911	1.798
104.500	8.405	220.789	0.214	3.8979553847E+003	6.5707190219E+002	-2.4815222117E+001	0.498	1.905	1.786
105.374	8.442	220.974	0.215	3.8767574500E+003	6.5619484418E+002	-2.5559250522E+001	0.496	1.877	1.737
105.789	8.464	221.066	0.216	3.8659005650E+003	6.5563124694E+002	-2.6048775419E+001	0.494	1.865	1.713
106.663	8.502	221.253	0.217	3.8433728059E+003	6.5431509384E+002	-2.6663204297E+001	0.492	1.840	1.669
107.266	8.532	221.386	0.215	3.8269277359E+003	6.5323204782E+002	-2.7041975484E+001	0.490	1.823	1.639
108.140	8.566	221.570	0.214	3.8035888450E+003	6.5154038695E+002	-2.7650575597E+001	0.487	1.801	1.600

108.741	8.594	221.702	0.213	3.7865885620E+003	6.5020790384E+002	-2.7971268191E+001	0.485	1.786	1.574
109.615	8.624	221.884	0.212	3.7625614005E+003	6.4819392908E+002	-2.8413803418E+001	0.481	1.767	1.539
110.220	8.650	222.015	0.213	3.7449739830E+003	6.4663031874E+002	-2.8132077366E+001	0.479	1.754	1.515
110.500	8.658	222.072	0.201	3.7372156637E+003	6.4592037416E+002	-2.7677903155E+001	0.478	1.748	1.505
111.374	8.680	222.247	0.202	3.7130961071E+003	6.4358231980E+002	-2.8536580729E+001	0.475	1.733	1.475
111.696	8.690	222.314	0.196	3.7037929492E+003	6.4264310698E+002	-2.8413966095E+001	0.474	1.727	1.464
112.570	8.706	222.482	0.197	3.6800714444E+003	6.4014659803E+002	-2.8282111095E+001	0.471	1.714	1.436
113.177	8.725	222.606	0.201	3.6624398270E+003	6.3821418916E+002	-2.8817292881E+001	0.469	1.705	1.417
114.051	8.748	222.780	0.205	3.6375761819E+003	6.3539041342E+002	-2.9780919469E+001	0.466	1.693	1.390
114.653	8.772	222.908	0.215	3.6191026081E+003	6.3322722035E+002	-3.0905174625E+001	0.464	1.685	1.371
115.527	8.811	223.098	0.225	3.5918286727E+003	6.2993533317E+002	-3.3115492937E+001	0.460	1.673	1.343
116.131	8.851	223.241	0.230	3.5710164062E+003	6.2736148118E+002	-3.3638239636E+001	0.458	1.665	1.323
117.005	8.898	223.437	0.220	3.5426246147E+003	6.2377817020E+002	-3.1723358259E+001	0.454	1.655	1.297
117.603	8.924	223.565	0.205	3.5239691120E+003	6.2136493634E+002	-3.0361218036E+001	0.452	1.648	1.281
118.477	8.950	223.739	0.198	3.4985088874E+003	6.1800437979E+002	-2.9201359454E+001	0.448	1.639	1.261
119.085	8.967	223.859	0.189	3.4807168790E+003	6.1558702713E+002	-2.8463388002E+001	0.446	1.633	1.247
119.959	8.980	224.019	0.184	3.4568288045E+003	6.1225239939E+002	-2.7867074555E+001	0.442	1.624	1.231
120.569	8.990	224.132	0.180	3.4396155925E+003	6.0975815932E+002	-2.7187600134E+001	0.440	1.616	1.220
121.000	8.992	224.206	0.175	3.4282149566E+003	6.0807442552E+002	-2.6962963118E+001	0.438	1.611	1.213
121.874	9.001	224.360	0.175	3.4037218099E+003	6.0428450398E+002	-2.7496429242E+001	0.435	1.599	1.199
122.065	9.001	224.393	0.175	3.3984959575E+003	6.0344968888E+002	-2.7706990475E+001	0.434	1.596	1.196
122.939	9.010	224.546	0.184	3.3729757758E+003	5.9924254732E+002	-3.1940573960E+001	0.431	1.580	1.184
123.568	9.028	224.669	0.191	3.3516278098E+003	5.9558287945E+002	-3.3800582419E+001	0.428	1.566	1.176
124.443	9.040	224.833	0.185	3.3222238522E+003	5.9040145129E+002	-3.5226825246E+001	0.424	1.545	1.165
125.040	9.045	224.942	0.183	3.3005207116E+003	5.8649679788E+002	-3.6087669141E+001	0.421	1.530	1.158
125.914	9.045	225.103	0.184	3.2692637766E+003	5.8076832456E+002	-3.7480190239E+001	0.417	1.508	1.149
126.499	9.046	225.210	0.187	3.2466617491E+003	5.7655726723E+002	-3.8459449155E+001	0.414	1.493	1.143
127.374	9.044	225.376	0.183	3.2132699396E+003	5.7024180935E+002	-3.7990020347E+001	0.410	1.472	1.136
127.949	9.033	225.475	0.170	3.1914896107E+003	5.6602022375E+002	-3.7980810439E+001	0.407	1.458	1.132
128.500	9.014	225.567	0.160	3.1704923204E+003	5.6190900416E+002	-3.8046958958E+001	0.404	1.447	1.129
129.374	8.975	225.703	0.156	3.1373155066E+003	5.5517784013E+002	-3.8492400901E+001	0.400	1.430	1.125
129.413	8.973	225.709	0.152	3.1358314823E+003	5.5486667098E+002	-3.8543647045E+001	0.400	1.429	1.124
130.287	8.923	225.842	0.156	3.1015936380E+003	5.4759518008E+002	-4.1949148091E+001	0.396	1.412	1.121
130.883	8.895	225.939	0.163	3.0754364930E+003	5.4180872914E+002	-4.4465612141E+001	0.393	1.398	1.119
131.757	8.846	226.081	0.169	3.0357759184E+003	5.3269978113E+002	-4.9078943152E+001	0.388	1.377	1.116
132.385	8.821	226.193	0.180	3.0032851454E+003	5.2500087651E+002	-5.3007636154E+001	0.383	1.359	1.115
133.259	8.781	226.352	0.198	2.9554101128E+003	5.1337760615E+002	-6.2826013213E+001	0.376	1.330	1.113
133.946	8.775	226.502	0.215	2.9079006927E+003	5.0179825134E+002	-6.9356756813E+001	0.369	1.299	1.112
134.821	8.756	226.688	0.214	2.8470534530E+003	4.8695050150E+002	-7.1604166600E+001	0.359	1.259	1.112
135.609	8.740	226.858	0.212	2.7891769028E+003	4.7306112505E+002	-7.3846340181E+001	0.351	1.219	1.113
136.483	8.684	227.040	0.205	2.7241970080E+003	4.5797722080E+002	-7.3678424725E+001	0.341	1.179	1.115
137.063	8.642	227.156	0.205	2.6817014345E+003	4.4838293949E+002	-7.5647534978E+001	0.336	1.153	1.117
137.937	8.545	227.338	0.205	2.6124072830E+003	4.3337730336E+002	-7.8438746838E+001	0.327	1.117	1.122
138.457	8.483	227.442	0.207	2.5719532150E+003	4.2484426298E+002	-8.0331585512E+001	0.322	1.097	1.125
139.331	8.344	227.626	0.212	2.4982180113E+003	4.0976742267E+002	-8.7165106991E+001	0.314	1.068	1.131
139.500	8.318	227.662	0.211	2.4833610916E+003	4.0676364337E+002	-8.6679047901E+001	0.312	1.063	1.132
139.779	8.273	227.720	0.218	2.4596717459E+003	4.0202803412E+002	-8.6584816753E+001	0.309	1.054	1.135
140.653	8.099	227.914	0.231	2.3795962154E+003	3.8623048903E+002	-9.8377534335E+001	0.301	1.031	1.143
141.199	8.004	228.048	0.250	2.3235543394E+003	3.7520650703E+002	-1.0366389313E+002	0.295	1.018	1.149
142.073	7.813	228.269	0.259	2.2314626731E+003	3.5719129653E+002	-1.1104907901E+002	0.285	1.001	1.159
142.531	7.722	228.393	0.287	2.1793069708E+003	3.4696326854E+002	-1.1693100442E+002	0.279	0.993	1.165
143.405	7.524	228.651	0.300	2.0722481463E+003	3.2591264590E+002	-1.2567250056E+002	0.267	0.982	1.177
143.931	7.412	228.814	0.343	2.0050706073E+003	3.1266900362E+002	-1.3475251904E+002	0.259	0.977	1.185
144.805	7.233	229.131	0.370	1.8768973008E+003	2.8742791116E+002	-1.4956266270E+002	0.243	0.972	1.200
145.399	7.123	229.358	0.393	1.7869528930E+003	2.6980743334E+002	-1.5310392081E+002	0.231	0.971	1.211
146.273	6.944	229.708	0.396	1.6511250638E+003	2.4346663636E+002	-1.5091597390E+002	0.214	0.974	1.229
147.056	6.775	230.013	0.382	1.5361044354E+003	2.2157337244E+002	-1.4233351824E+002	0.199	0.979	1.244
147.930	6.563	230.341	0.381	1.4161542045E+003	1.9924280625E+002	-1.3783871747E+002	0.183	0.987	1.261
148.612	6.407	230.606	0.373	1.3218101910E+003	1.8211242628E+002	-1.3214603730E+002	0.171	0.995	1.275
149.486	6.170	230.921	0.363	1.2132129015E+003	1.6297364520E+002	-1.2347536443E+002	0.157	1.006	1.293
150.111	6.005	231.150	0.354	1.1363700767E+003	1.4978835309E+002	-1.1481937574E+002	0.147	1.015	1.306
150.500	5.884	231.280	0.347	1.0936877986E+003	1.4262968672E+002	-1.1064645273E+002	0.142	1.021	1.314
151.374	5.629	231.589	0.351	9.9525666263E+002	1.2646444966E+002	-1.0800217308E+002	0.130	1.035	1.335
151.577	5.568	231.658	0.340	9.7357326475E+002	1.2295802644E+002	-1.0636761139E+002	0.127	1.038	1.340
152.451	5.288	231.955	0.345	8.8273007374E+002	1.0846307768E+002	-1.0466602668E+002	0.116	1.054	1.362
153.039	5.109	232.163	0.353	8.2086551257E+002	9.8697109275E+001	-1.0409065299E+002	0.107	1.067	1.380

153.913	4.829	232.472	0.362	7.3127258034E+002	8.4673512343E+001	-1.0427534016E+002	0.095	1.087	1.409
154.487	4.658	232.687	0.372	6.7082240243E+002	7.5329100727E+001	-1.0343872002E+002	0.087	1.103	1.431
155.361	4.381	233.010	0.382	5.8307577442E+002	6.1973091889E+001	-1.0240500684E+002	0.074	1.131	1.469
155.947	4.213	233.245	0.395	5.2221802561E+002	5.2973915871E+001	-1.0248507875E+002	0.065	1.152	1.498
156.821	3.943	233.587	0.390	4.3429709478E+002	3.9936508299E+001	-9.9353517414E+001	0.054	1.186	1.545
157.426	3.754	233.822	0.378	3.7475380576E+002	3.1034663656E+001	-9.4630632906E+001	0.054	1.212	1.580
158.300	3.456	234.147	0.368	2.9693094348E+002	1.9906296721E+001	-8.4111562823E+001	0.054	1.254	1.636
158.946	3.230	234.381	0.378	2.4493282995E+002	1.3166946265E+001	-7.9457596003E+001	0.054	1.292	1.686
159.820	2.941	234.722	0.388	1.7668142566E+002	5.7777376435E+000	-7.0605188374E+001	0.054	1.352	1.763
160.441	2.733	234.961	0.446	1.3615577083E+002	2.7375080444E+000	-6.5645925378E+001	0.054	1.404	1.831
161.315	2.527	235.389	0.456	7.8344701026E+001	5.6014968879E-001	-5.3365826413E+001	0.054	1.488	1.936
161.918	2.333	235.634	0.456	5.1464813138E+001	2.3719429218E-001	-5.0400932936E+001	0.054	1.535	2.000

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
ht(m) : Altezza linea di thrust da nodo sinistro base concio
yt(m) : coordinata Y linea di trust
yt'(-) : gradiente pendenza locale linea di trust
E(x)(kN/m) : Forza Normale interconcio
T(x)(kN/m) : Forza Tangenziale interconcio
E' (kN) : derivata Forza normale interconcio
Rho(x) (-) : fattore mobilizzazione resistenza al taglio verticale interconcio ZhU et al.(2003)
FS_qFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by qFEM
FS_srmFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by SRM Procedure

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TABELLA SFORZI DI TAGLIO DISTRIBUITI LUNGO SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	dl (m)	alpha (°)	TauStress (kPa)	TauF (kN/m)	TauStrength (kPa)	TauS (kN/m)
57.797	0.874	1.184	-42.426	-4.054	-4.801	100.028	118.452
58.671	0.874	1.184	-42.426	-12.162	-14.402	100.572	119.096
59.546	0.454	0.616	-42.426	-18.323	-11.281	101.546	62.517
60.000	0.874	1.184	-42.426	-24.824	-29.396	104.104	123.280
60.874	0.874	1.184	-42.426	-33.609	-39.800	108.356	128.314
61.748	0.874	1.184	-42.426	-42.395	-50.203	112.503	133.225
62.622	0.811	1.098	-42.426	-50.862	-55.870	119.835	131.634
63.433	0.874	1.161	-41.185	-58.773	-68.264	119.938	139.305
64.307	0.874	1.161	-41.185	-67.171	-78.017	117.912	136.952
65.181	0.828	1.101	-41.185	-75.348	-82.924	119.289	131.282
66.010	0.874	1.110	-38.047	-81.018	-89.928	118.713	131.768
66.884	0.616	0.783	-38.047	-87.346	-68.352	117.794	92.179
67.500	0.161	0.204	-38.047	-90.713	-18.519	117.248	23.937
67.661	0.874	1.046	-33.300	-89.039	-93.119	117.649	123.040
68.535	0.429	0.513	-33.300	-94.015	-48.225	117.153	60.094
68.964	0.874	0.977	-26.484	-84.039	-82.072	114.790	112.103
69.838	0.468	0.523	-26.484	-87.614	-45.852	113.776	59.544
70.306	0.874	0.934	-20.598	-73.061	-68.224	111.387	104.014
71.180	0.246	0.262	-20.598	-75.044	-19.683	111.570	29.263
71.426	0.874	0.901	-13.931	-51.535	-46.412	107.899	97.174
72.300	0.402	0.415	-13.931	-52.721	-21.855	107.731	44.659
72.702	0.874	0.884	-8.443	-29.714	-26.258	105.032	92.815
73.576	0.534	0.540	-8.443	-30.279	-16.360	104.928	56.694
74.111	0.389	0.391	-4.716	-13.016	-5.083	102.547	40.047
74.500	0.874	0.877	-4.716	-13.225	-11.599	102.671	90.051
75.374	0.594	0.596	-4.716	-13.485	-8.036	102.636	61.163
75.968	0.874	0.877	-4.374	-12.019	-10.537	102.539	89.892
76.842	0.797	0.799	-4.374	-12.274	-9.810	102.644	82.040
77.639	0.874	0.876	-3.977	-10.431	-9.140	102.266	89.607
78.513	0.679	0.681	-3.977	-10.624	-7.235	102.313	69.677
79.193	0.874	0.876	-3.561	-8.542	-7.481	101.999	89.331
80.067	0.626	0.627	-3.561	-8.687	-5.446	101.988	63.942
80.692	0.874	0.875	-3.120	-6.332	-5.543	101.598	88.940
81.567	0.591	0.592	-3.120	-6.432	-3.809	101.607	60.173

82.158	0.874	0.875	-2.705	-4.101	-3.588	101.415	88.747
83.032	0.593	0.594	-2.705	-4.162	-2.472	101.454	60.252
83.625	0.874	0.875	-2.296	-1.755	-1.535	101.189	88.521
84.499	0.613	0.614	-2.296	-1.780	-1.093	101.192	62.115
85.113	0.874	0.875	-1.896	0.671	0.587	100.917	88.261
85.987	0.651	0.651	-1.896	0.681	0.443	100.919	65.687
86.637	0.874	0.874	-1.520	3.089	2.701	100.669	88.027
87.511	0.714	0.715	-1.520	3.132	2.238	100.654	71.930
88.226	0.274	0.274	-0.311	11.042	3.028	100.124	27.459
88.500	0.874	0.874	-0.311	11.146	9.743	100.122	87.519
89.374	0.321	0.321	-0.311	11.255	3.617	100.112	32.172
89.695	0.874	0.874	1.041	20.415	17.848	99.627	87.100
90.570	0.557	0.557	1.041	20.631	11.486	99.637	55.474
91.126	0.874	0.875	2.484	30.660	26.825	99.190	86.785
92.000	0.516	0.517	2.484	30.941	15.996	99.209	51.289
92.517	0.874	0.876	3.911	41.043	35.959	98.865	86.621
93.391	0.570	0.571	3.911	41.389	23.630	98.881	56.455
93.961	0.874	0.878	5.326	51.535	45.242	98.632	86.589
94.835	0.514	0.516	5.326	51.901	26.800	98.862	51.050
95.349	0.874	0.880	6.750	62.158	54.712	98.685	86.863
96.223	0.551	0.555	6.750	62.551	34.699	98.903	54.865
96.774	0.874	0.883	8.080	72.157	63.706	98.873	87.293
97.648	0.584	0.590	8.080	72.557	42.775	99.053	58.396
98.232	0.874	0.886	9.273	81.184	71.904	99.108	87.778
99.106	0.691	0.700	9.273	81.597	57.147	99.300	69.545
99.797	0.874	0.886	9.353	82.561	73.140	99.521	88.164
100.671	0.656	0.665	9.353	82.963	55.196	99.659	66.303
101.328	0.874	0.886	9.435	83.941	74.380	99.822	88.452
102.202	0.626	0.635	9.435	84.333	53.513	99.934	63.413
102.828	0.874	0.886	9.519	85.311	75.612	100.042	88.669
103.702	0.616	0.624	9.519	85.699	53.487	100.150	62.506
104.317	0.183	0.185	9.603	86.509	16.037	100.216	18.578
104.500	0.874	0.887	9.603	86.711	76.872	100.268	88.891
105.374	0.415	0.421	9.603	86.939	36.566	100.363	42.212
105.789	0.874	0.887	9.686	87.755	77.817	100.405	89.035
106.663	0.603	0.612	9.686	88.014	53.829	100.484	61.455
107.266	0.874	0.887	9.769	88.862	78.818	100.525	89.163
108.140	0.601	0.609	9.769	89.117	54.315	100.602	61.315
108.741	0.874	0.887	9.851	89.963	79.815	100.631	89.279
109.615	0.605	0.614	9.851	90.216	55.426	100.707	61.871
110.220	0.280	0.284	9.933	90.962	25.860	100.699	28.628
110.500	0.874	0.887	9.933	91.108	80.850	100.738	89.396
111.374	0.322	0.327	9.933	91.243	29.835	100.805	32.962
111.696	0.874	0.887	9.869	90.915	80.664	100.783	89.419
112.570	0.606	0.616	9.869	91.085	56.064	100.874	62.089
113.177	0.874	0.887	9.805	90.790	80.536	100.880	89.488
114.051	0.602	0.611	9.805	90.961	55.545	100.980	61.663
114.653	0.874	0.887	9.741	90.665	80.411	101.020	89.594
115.527	0.604	0.613	9.741	90.840	55.700	101.153	62.024
116.131	0.874	0.887	9.677	90.543	80.287	101.103	89.651
117.005	0.598	0.606	9.677	90.719	55.018	101.086	61.305
117.603	0.874	0.887	9.612	90.418	80.160	101.028	89.567
118.477	0.608	0.617	9.612	90.598	55.887	101.062	62.342
119.085	0.874	0.886	9.548	90.301	80.042	101.013	89.537
119.959	0.609	0.618	9.548	90.484	55.923	101.087	62.476
120.569	0.431	0.437	9.484	90.134	39.402	101.030	44.165
121.000	0.874	0.886	9.484	90.220	79.955	101.144	89.636
121.874	0.191	0.193	9.484	90.259	17.465	101.154	19.573
122.065	0.874	0.886	9.420	89.824	79.590	101.262	89.724
122.939	0.629	0.638	9.420	89.883	57.347	101.524	64.775
123.568	0.874	0.887	9.885	93.405	82.876	101.628	90.173
124.443	0.598	0.607	9.885	93.438	56.687	101.794	61.757
125.040	0.874	0.889	10.364	97.019	86.212	101.883	90.534
125.914	0.585	0.595	10.364	97.027	57.707	102.068	60.706
126.499	0.874	0.890	10.852	100.617	89.552	102.169	90.933
127.374	0.575	0.586	10.852	100.597	58.939	102.203	59.880

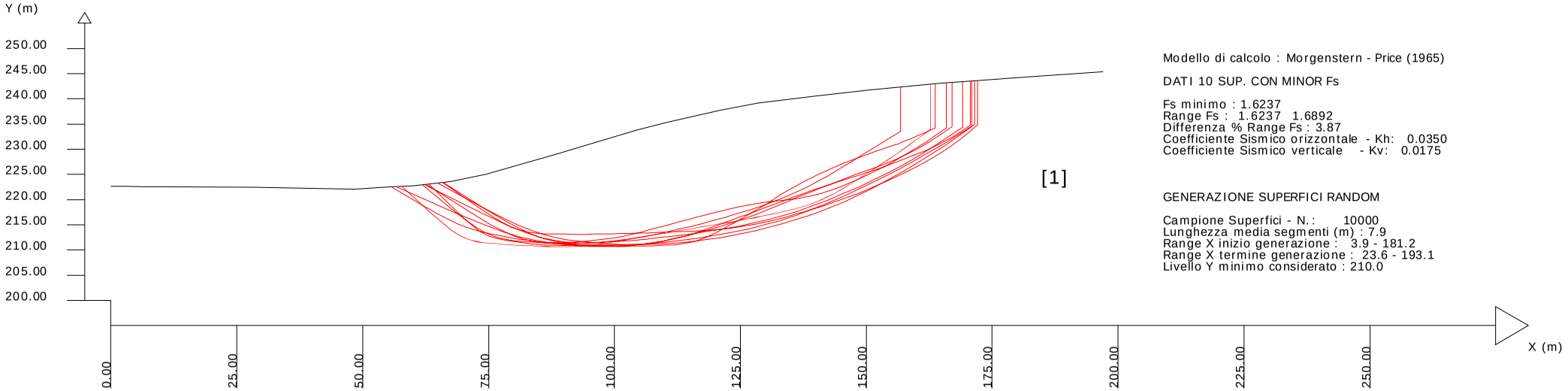
127.949	0.551	0.562	11.336	104.119	58.515	102.335	57.512
128.500	0.874	0.892	11.336	103.945	92.667	102.410	91.298
129.374	0.039	0.039	11.336	103.783	4.078	102.527	4.029
129.413	0.874	0.893	11.839	107.243	95.780	102.712	91.733
130.287	0.597	0.610	11.839	106.942	65.184	103.163	62.880
130.883	0.874	0.895	12.328	110.105	98.515	103.529	92.632
131.757	0.628	0.643	12.328	109.754	70.546	104.152	66.945
132.385	0.874	0.896	12.798	112.689	101.012	104.664	93.818
133.259	0.687	0.704	12.798	112.279	79.098	105.912	74.612
133.946	0.874	0.898	13.226	114.814	103.095	106.143	95.309
134.821	0.788	0.810	13.226	114.332	92.605	106.371	86.157
135.609	0.874	0.906	15.264	127.394	115.429	107.116	97.055
136.483	0.580	0.601	15.264	126.761	76.239	106.819	64.245
137.063	0.874	0.917	17.678	141.201	129.542	108.065	99.142
137.937	0.519	0.545	17.678	140.313	76.435	107.723	58.682
138.457	0.874	0.932	20.301	154.499	143.993	109.113	101.694
139.331	0.169	0.181	20.301	153.567	27.735	109.369	19.753
139.500	0.279	0.297	20.301	153.154	45.520	108.976	32.389
139.779	0.874	0.948	22.793	165.006	156.451	110.481	104.752
140.653	0.546	0.592	22.793	163.272	96.729	111.705	66.178
141.199	0.874	0.966	25.210	172.673	166.825	112.896	109.072
142.073	0.457	0.506	25.210	170.650	86.270	113.992	57.628
142.531	0.874	0.986	27.555	178.049	175.547	116.037	114.407
143.405	0.526	0.594	27.555	175.481	104.208	116.751	69.332
143.931	0.874	1.005	29.568	179.855	180.753	120.124	120.724
144.805	0.593	0.682	29.568	176.743	120.601	120.691	82.354
145.399	0.874	1.022	31.191	178.412	182.304	121.677	124.332
146.273	0.783	0.915	31.191	174.498	159.707	120.115	109.934
147.056	0.874	1.027	31.701	171.908	176.618	118.545	121.793
147.930	0.682	0.802	31.701	168.111	134.774	118.232	94.786
148.612	0.874	1.034	32.254	165.625	171.191	116.045	119.945
149.486	0.625	0.739	32.254	161.839	119.624	115.458	85.341
150.111	0.389	0.463	32.822	160.543	74.281	113.617	52.569
150.500	0.874	1.040	32.822	157.187	163.500	113.678	118.243
151.374	0.203	0.241	32.822	154.304	37.233	112.789	27.215
151.577	0.874	1.047	33.397	152.534	159.702	112.373	117.654
152.451	0.588	0.705	33.397	148.486	104.626	112.387	79.190
153.039	0.874	1.054	33.943	145.383	153.186	112.067	118.081
153.913	0.573	0.691	33.943	141.250	97.613	112.259	77.579
154.487	0.874	1.060	34.484	137.946	146.283	111.578	118.322
155.361	0.587	0.712	34.484	133.647	95.096	111.627	79.427
155.947	0.874	1.067	35.004	130.050	138.781	111.379	118.857
156.821	0.604	0.738	35.004	125.573	92.669	111.235	82.088
157.426	0.874	1.074	35.496	121.674	130.635	109.772	117.857
158.300	0.646	0.794	35.496	116.948	92.814	108.006	85.717
158.946	0.874	1.077	35.743	112.475	121.131	106.508	114.705
159.820	0.621	0.765	35.743	107.767	82.406	103.771	79.350
160.441	0.874	1.080	35.996	103.285	111.589	101.923	110.118
161.315	0.603	0.746	35.996	98.570	73.508	100.413	74.883
161.918	0.874	1.084	36.249	94.051	101.942	100.210	108.617

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
dl(m) : lunghezza base concio
alpha(°) : Angolo pendenza base concio
TauStress(kPa) : Sforzo di taglio su base concio
TauF (kN/m) : Forza di taglio su base concio
TauStrength(kPa) : Resistenza al taglio su base concio
TauS (kN/m) : Forza resistente al taglio su base concio

SSAP 5.0.2 (2021) - Slope Stability Analysis Program
Software by Dr.Geol. L.Borselli - www.lorenzo-borselli.eu
SSAP/DXF generator rel. 2.0 (2020)

Data : 18/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Morgenstern - Price (1965)

DATI 10 SUP. CON MINOR Fs

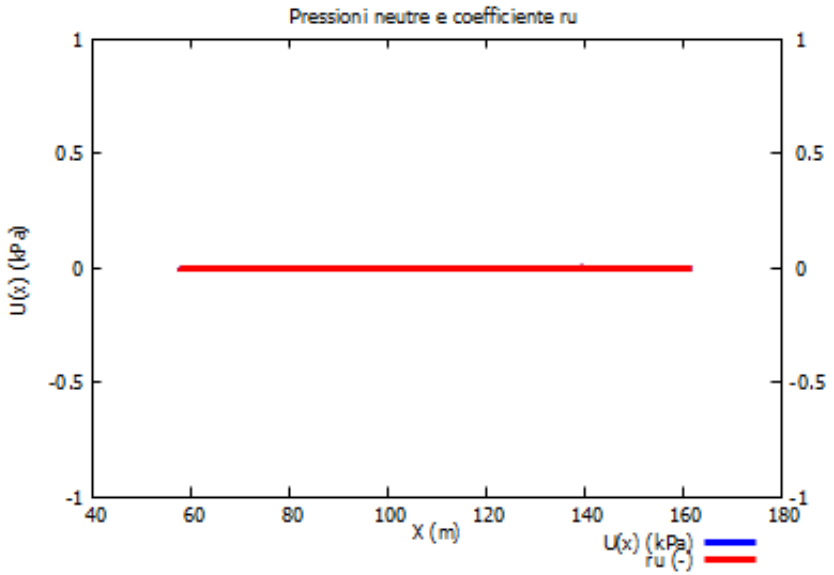
Fs minimo : 1.6237
Range Fs : 1.6237 1.6892
Differenza % Range Fs : 3.87
Coefficiente Sismico orizzontale - Kh: 0.0350
Coefficiente Sismico verticale - Kv: 0.0175

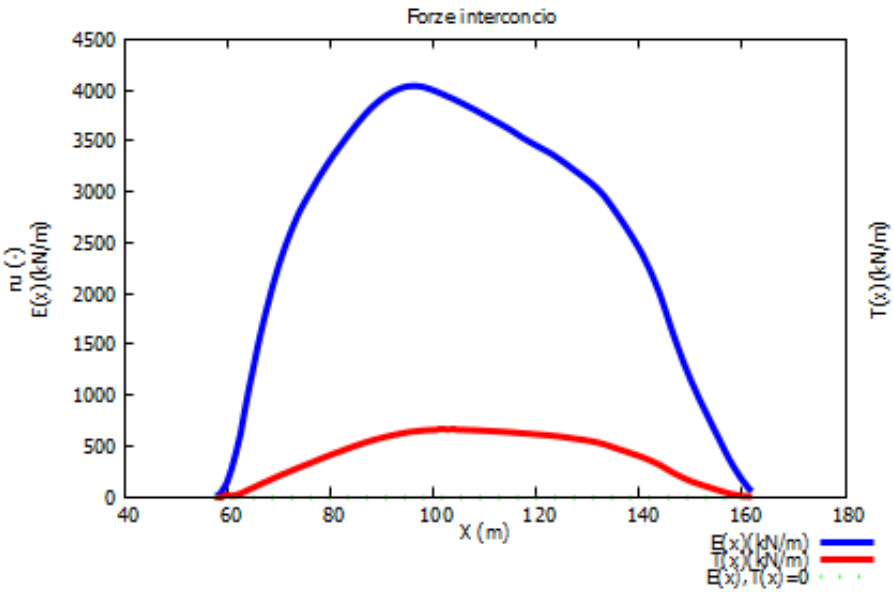
GENERAZIONE SUPERFICI RANDOM

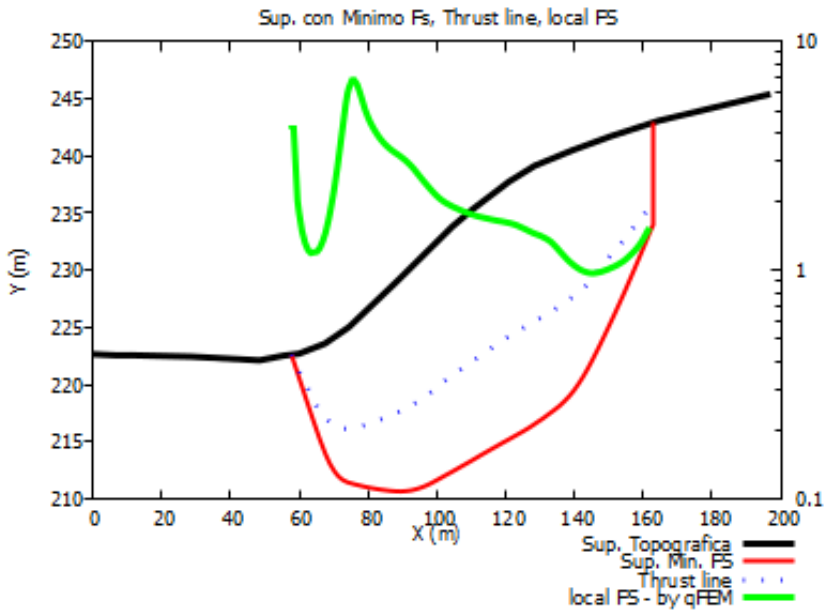
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 7.9
Range X inizio generazione : 3.9 - 181.2
Range X termine generazione : 23.6 - 193.1
Livello Y minimo considerato : 210.0

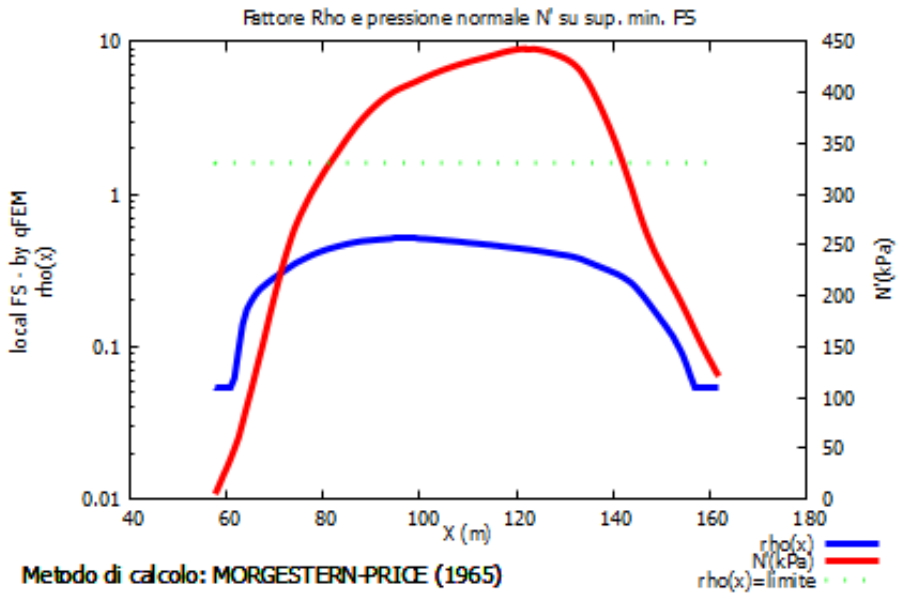
Parametri Geotecnici degli strati # ----------

N.	phi`	C`	Cu	Gamm	GammSat	sgci	GSI	mi	D
..	deg	kPa	kPa	kN/m3	kN/m3	MPa	..	..	..
1	0	0	100.00	20.00	22.00	0	0	0	0





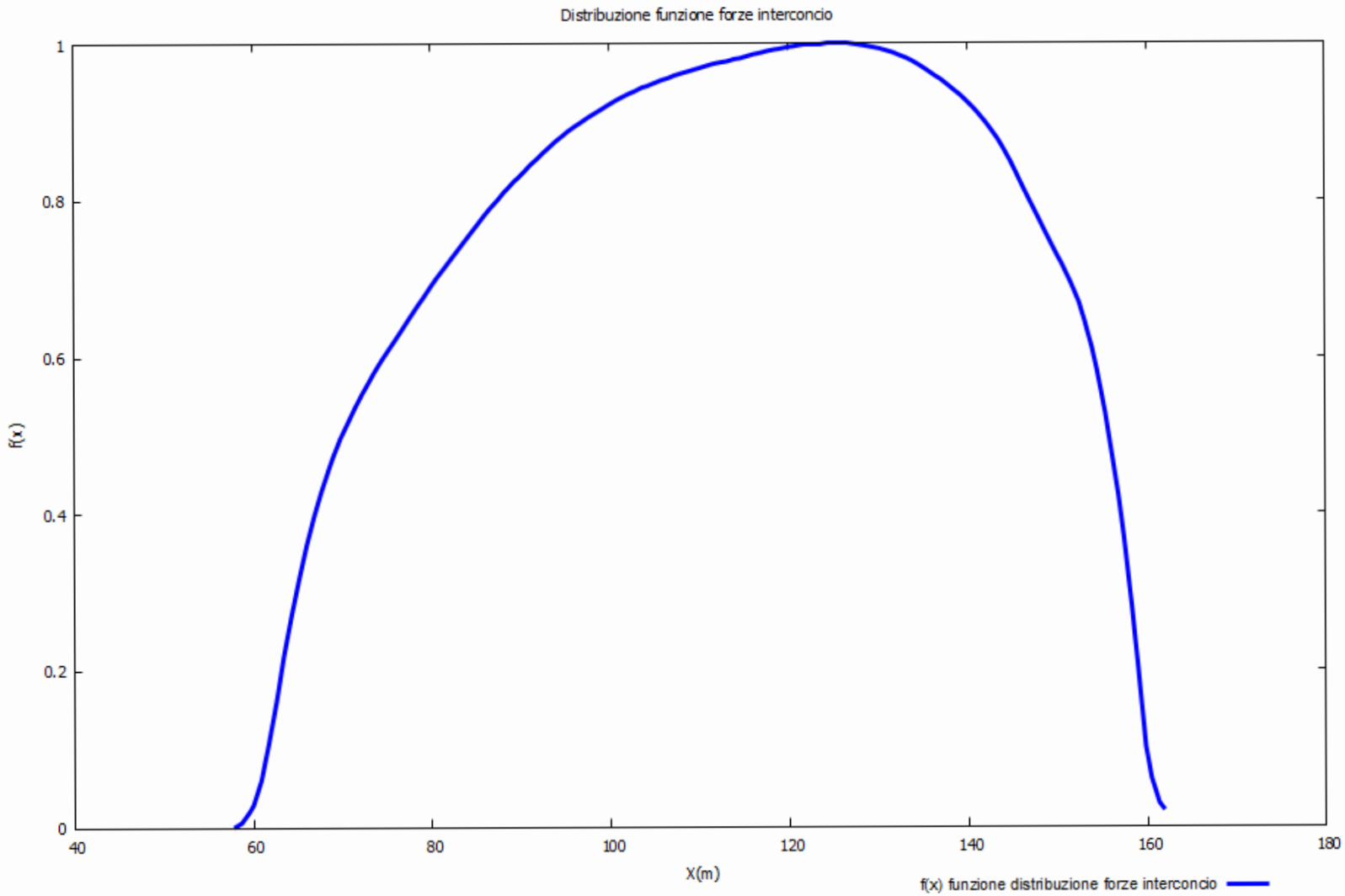




Metodo di calcolo: MORGESTERN-PRICE (1965)

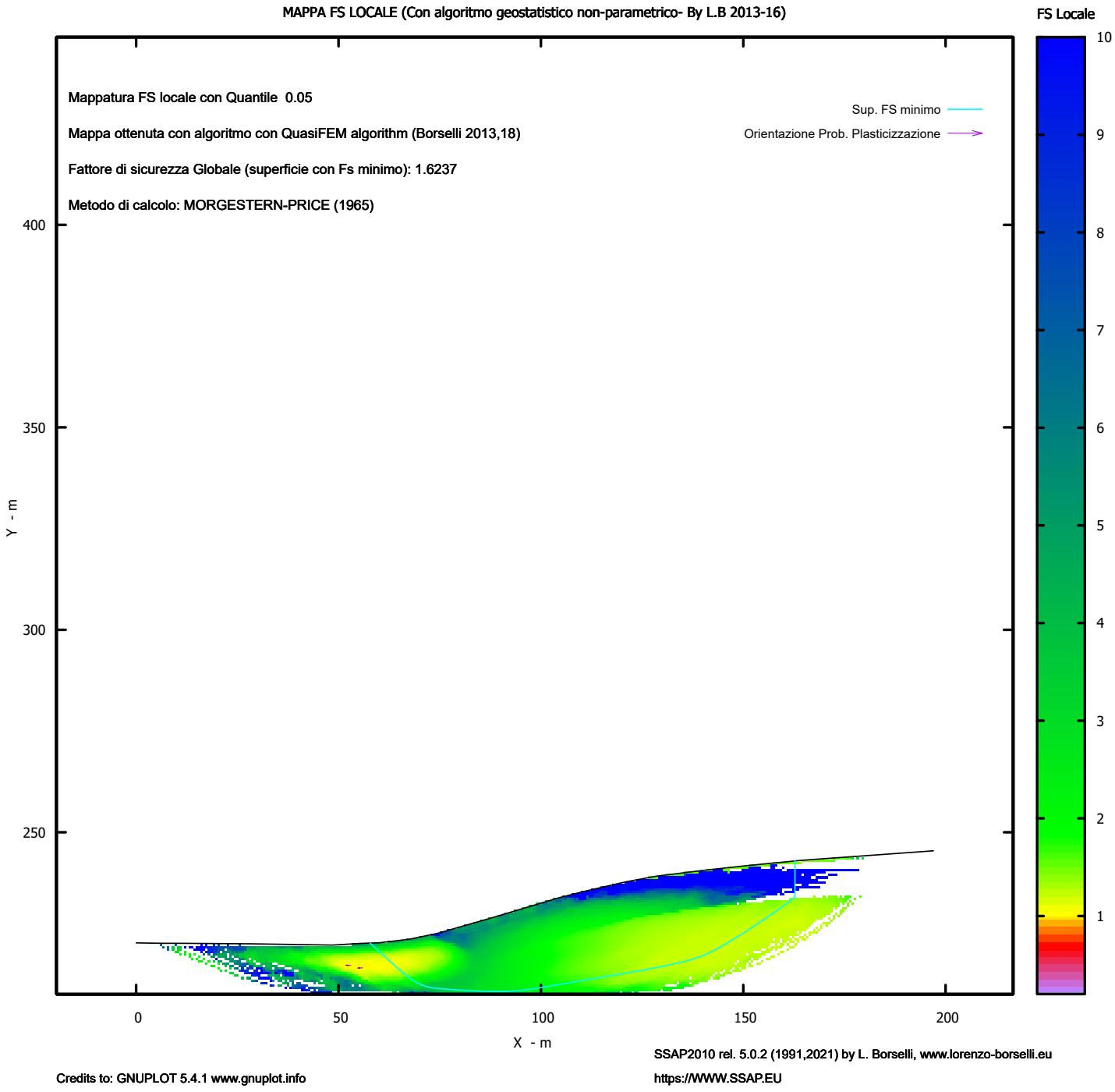
SSAP2010 (versione 5.0.2 - 2021) - DISTRIBUZIONE FORZE e PRESSIONI

18/11/21 14:07



Graphic rendering,Credits to: GNUPLOT 5.4.1 www.gnuplot.info

SSAP2010 rel. 5.0.2 (1991,2021) by L. Borselli - www.ssap.eu


MAPPA FS LOCALE (Con algoritmo geostatistico non-parametrico- By L.B 2013-16)
FS Locale
Mappatura FS locale con Quantile 0.05
Mappa ottenuta con algoritmo con QuasiFEM algorithm (Borselli 2013,18)
Fattore di sicurezza Globale (superficie con Fs minimo): 1.6237
Metodo di calcolo: MORGESTERN-PRICE (1965)
Sup. FS minimo
Orientazione Prob. Plasticizzazione
Y - m
X - m
400
350
300
250
0
50
100
150
200
10
9
8
7
6
5
4
3
2
1
Credits to: GNUPLOT 5.4.1 www.gnuplot.info
SSAP2010 rel. 5.0.2 (1991,2021) by L. Borselli, www.lorenzo-borselli.eu
https://WWW.SSAP.EU

Report elaborazioni

SSAP 5.0.2 - Slope Stability Analysis Program (1991,2021)
WWW.SSAP.EU
Build No. 11893
BY
Dr. Geol. LORENZO BORSELLI *,**
*UASLP, San Luis Potosi, Mexico
e-mail: lborselli@gmail.com
CV e WEB page personale: WWW.LORENZO-BORSELLI.EU
** Gia' Ricercatore CNR-IRPI fino a Luglio 2011

Ultima Revisione struttura tabelle del report: 21 Febbraio 2021

File report: C:\SSAP2010\CRACO SERRACARUSO CAP\VERIFICA 1\NON DRENATA\BERSELLI\BERSELLI.txt
Data: 18/11/2021
Localita' :
Descrizione:
Modello pendio: NONDRENATA.mod

---------- PARAMETRI DEL MODELLO DEL PENDIO ----------

__ PARAMETRI GEOMETRICI - Coordinate X Y (in m) __

SUP T.		SUP 2		SUP 3		SUP 4	
X	Y	X	Y	X	Y	X	Y
0.00	222.67	-	-	-	-	-	-
3.00	222.62	-	-	-	-	-	-
7.00	222.56	-	-	-	-	-	-
11.00	222.57	-	-	-	-	-	-
28.50	222.45	-	-	-	-	-	-
48.50	222.12	-	-	-	-	-	-
55.50	222.53	-	-	-	-	-	-
60.00	222.70	-	-	-	-	-	-
67.50	223.58	-	-	-	-	-	-
74.50	225.03	-	-	-	-	-	-
88.50	229.05	-	-	-	-	-	-
104.50	233.81	-	-	-	-	-	-
110.50	235.35	-	-	-	-	-	-
121.00	237.76	-	-	-	-	-	-
128.50	239.15	-	-	-	-	-	-
139.50	240.51	-	-	-	-	-	-
150.50	241.72	-	-	-	-	-	-
164.50	243.08	-	-	-	-	-	-
184.50	244.52	-	-	-	-	-	-
197.00	245.42	-	-	-	-	-	-

ASSENZA DI FALDA

------- PARAMETRI GEOMECCANICI -------

	fi`	C`	Cu	Gamm	Gamm_sat	STR_IDX	sgci	GSI	mi	D
STRATO 1	0.00	0.00	100.00	20.00	22.00	19.086	0.00	0.00	0.00	0.00

LEGENDA: fi`_____ Angolo di attrito interno efficace(in gradi)
C` _____ Coesione efficace (in Kpa)
Cu _____ Resistenza al taglio Non drenata (in Kpa)
Gamm _____ Peso di volume terreno fuori falda (in KN/m^3)
Gamm_sat __ Peso di volume terreno immerso (in KN/m^3)
STR_IDX ___ Indice di resistenza (usato in solo in 'SNIFF SEARCH) (adimensionale)
---- SOLO Per AMMASSI ROCCIOSI FRATTURATI - Parametri Criterio di Rottura di Hoek (2002)-
sigci _____ Resistenza Compressione Uniassiale Roccia Intatta (in MPa)
GSI _____ Geological Strenght Index ammasso(adimensionale)

mi _____ Indice litologico ammasso(adimensionale)
D _____ Fattore di disturbo ammasso(adimensionale)
Fattore di riduzione NTC2018: gammaPHI=1.25 e gammaC=1.25 - DISATTIVATO (solo per ROCCE)
Uso CRITERIO DI ROTTURA Hoek et al.(2002,2006) - non-lineare - Generalizzato, secondo Lei et al.(2016)

---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
MOTORE DI RICERCA: RANDOM SEARCH - Siegel (1981)
FILTRAGGIO SUPERFICI : ATTIVATO
COORDINATE X1,X2,Y OSTACOLO : 0.00 0.00 0.00
LUNGHEZZA MEDIA SEGMENTI (m)*: 7.9 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 3.94 181.24
LIVELLO MINIMO CONSIDERATO (Ymin): 210.00
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 23.64 193.06
TOTALE SUPERFICI GENERATE : 10000
*NOTA IMPORTANTE: La lunghezza media dei segmenti non viene cosiderata nel caso
di uso del motore di recerca NEW RANOM SEARCH

---------- INFORMAZIONI PARAMETRI DI CALCOLO ----------
METODO DI CALCOLO : BORSELLI (Borselli, 2016)
METODO DI ESPLORAZIONE CAMPO VALORI (lambda0,Fs0) ADOTTATO : A (rapido)
COEFFICIENTE SISMICO UTILIZZATO Kh : 0.0350
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0175
COEFFICIENTE c=Kv/Kh UTILIZZATO : 0.5000
FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00

N.B. Le forze orizzontali addizionali in testa e alla base sono poste uguali a 0
durante le tutte le verifiche globali.
I valori >0 impostati dall'utente sono utilizzati solo in caso di verifica singola

---------- RISULTATO FINALE ELABORAZIONI ----------
---
* DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *

Fattore di sicurezza (FS) 1.6247 - Min. - X Y Lambda= 0.1361
69.81 224.06
79.03 217.78
83.27 215.03
86.01 213.47
88.20 212.44
90.44 211.67
92.36 211.21
94.53 210.90
96.90 210.77
99.94 210.76
102.65 210.79
105.17 210.85
107.58 210.95
109.99 211.08
112.36 211.25
114.78 211.46
117.28 211.71
119.94 212.02
122.39 212.35
124.77 212.72
127.08 213.14
129.46 213.64
131.78 214.18
134.19 214.80
136.70 215.51
139.47 216.35
141.94 217.16
144.30 218.03
146.57 218.94

148.94 219.99
151.20 221.07
153.56 222.29
156.01 223.64
158.71 225.20
161.23 226.71
163.67 228.22
166.04 229.74
168.44 231.33
171.09 233.16
173.68 235.01
173.68 243.74

Fattore di sicurezza (FS) 1.6391 - N.2 -- X Y Lambda= 0.1452
60.28 222.73
67.19 218.07
70.40 216.00
72.51 214.78
74.23 213.95
75.96 213.31
77.46 212.88
79.13 212.55
80.92 212.33
83.16 212.17
85.19 212.05
87.11 211.95
88.96 211.87
90.79 211.81
92.61 211.77
94.44 211.75
96.30 211.75
98.23 211.76
100.10 211.79
101.94 211.83
103.76 211.88
105.60 211.96
107.44 212.04
109.31 212.14
111.24 212.26
113.28 212.40
115.11 212.58
116.88 212.81
118.58 213.10
120.37 213.46
122.08 213.86
123.85 214.34
125.68 214.90
127.71 215.58
129.64 216.24
131.52 216.89
133.36 217.55
135.19 218.22
137.02 218.91
138.87 219.62
140.75 220.35
142.68 221.12
144.54 221.89
146.36 222.67
148.16 223.46
149.99 224.30
151.81 225.16
153.66 226.07
155.58 227.04
157.63 228.11
159.48 229.13

	161.26	230.20				
	162.97	231.30				
	164.77	232.54				
	166.70	233.99				
	167.57	234.69				
	167.57	243.30				
Fattore di sicurezza (FS)	1.6419	- N.3 --	X	Y	Lambda=	0.1486
	67.34	223.56				
	72.70	219.26				
	75.23	217.31				
	76.92	216.12				
	78.32	215.25				
	79.69	214.53				
	80.94	213.99				
	82.30	213.50				
	83.77	213.08				
	85.59	212.64				
	87.15	212.32				
	88.59	212.06				
	89.94	211.87				
	91.35	211.73				
	92.68	211.65				
	94.06	211.62				
	95.50	211.63				
	97.10	211.70				
	98.63	211.76				
	100.11	211.83				
	101.58	211.91				
	103.02	211.99				
	104.48	212.08				
	105.96	212.18				
	107.48	212.28				
	109.05	212.40				
	110.49	212.54				
	111.89	212.72				
	113.24	212.94				
	114.66	213.20				
	116.01	213.50				
	117.41	213.85				
	118.86	214.26				
	120.43	214.73				
	121.94	215.19				
	123.42	215.63				
	124.88	216.05				
	126.33	216.47				
	127.78	216.88				
	129.25	217.28				
	130.74	217.69				
	132.27	218.10				
	133.72	218.51				
	135.14	218.94				
	136.54	219.39				
	137.97	219.89				
	139.37	220.39				
	140.80	220.94				
	142.27	221.53				
	143.82	222.18				
	145.30	222.81				
	146.76	223.45				
	148.19	224.10				
	149.63	224.77				
	151.06	225.45				
	152.51	226.15				
	153.97	226.89				

155.49 227.66
156.96 228.42
158.41 229.19
159.84 229.97
161.29 230.76
162.72 231.57
164.16 232.39
165.62 233.24
167.11 234.13
167.97 234.64
167.97 243.33

Fattore di sicurezza (FS) 1.6568 - N.4 -- X Y Lambda= 0.1432
66.06 223.41
71.22 219.16
73.64 217.23
75.25 216.07
76.57 215.23
77.89 214.55
79.06 214.04
80.34 213.59
81.73 213.21
83.47 212.83
84.97 212.53
86.37 212.30
87.69 212.12
89.05 211.97
90.35 211.87
91.69 211.81
93.07 211.78
94.57 211.79
96.02 211.79
97.44 211.78
98.83 211.77
100.22 211.75
101.60 211.72
102.99 211.69
104.39 211.65
105.81 211.60
107.21 211.56
108.60 211.52
109.99 211.49
111.37 211.47
112.79 211.45
114.23 211.43
115.74 211.42
117.34 211.42
118.69 211.47
119.97 211.59
121.17 211.78
122.49 212.07
123.69 212.41
124.97 212.85
126.33 213.39
127.92 214.09
129.43 214.76
130.87 215.40
132.29 216.03
133.68 216.66
135.08 217.29
136.47 217.92
137.88 218.56
139.28 219.20
140.68 219.85
142.06 220.50

143.45 221.15
144.83 221.82
146.23 222.49
147.63 223.18
149.05 223.88
150.50 224.61
151.89 225.33
153.26 226.06
154.61 226.81
155.98 227.61
157.34 228.42
158.72 229.27
160.14 230.17
161.64 231.16
163.05 232.12
164.42 233.08
165.76 234.07
166.59 234.70
166.59 243.23

Fattore di sicurezza (FS) 1.6698 - N.5 -- X Y Lambda= 0.1524
58.67 222.65
64.31 217.66
66.90 215.45
68.58 214.17
69.92 213.31
71.29 212.62
72.46 212.17
73.79 211.81
75.27 211.54
77.22 211.32
78.87 211.16
80.37 211.07
81.79 211.02
83.23 211.03
84.61 211.08
86.03 211.18
87.49 211.32
89.09 211.52
90.65 211.72
92.18 211.91
93.69 212.10
95.17 212.28
96.67 212.47
98.16 212.66
99.66 212.84
101.15 213.03
102.64 213.21
104.13 213.41
105.61 213.60
107.10 213.80
108.59 214.00
110.10 214.21
111.64 214.43
113.21 214.66
114.68 214.90
116.13 215.16
117.54 215.46
119.00 215.79
120.43 216.15
121.90 216.55
123.41 216.99
125.05 217.51
126.56 218.01
128.03 218.53

129.46 219.07
130.93 219.66
132.36 220.27
133.83 220.92
135.35 221.64
137.00 222.44
138.51 223.21
139.97 224.01
141.39 224.82
142.85 225.70
144.26 226.60
145.71 227.56
147.20 228.60
148.79 229.75
150.32 230.87
151.82 231.98
153.30 233.09
153.30 241.99

Fattore di sicurezza (FS) 1.6829 - N.6 -- X Y Lambda= 0.1417
59.76 222.69
66.37 218.31
69.47 216.35
71.53 215.18
73.22 214.35
74.90 213.70
76.40 213.24
78.03 212.86
79.79 212.58
81.95 212.33
83.88 212.14
85.71 211.99
87.46 211.87
89.22 211.78
90.94 211.73
92.69 211.70
94.47 211.70
96.35 211.72
98.18 211.76
99.97 211.80
101.74 211.86
103.51 211.93
105.30 212.01
107.11 212.11
108.97 212.22
110.93 212.35
112.70 212.51
114.40 212.72
116.05 212.99
117.78 213.33
119.43 213.71
121.16 214.17
122.97 214.71
124.99 215.36
126.84 216.00
128.61 216.66
130.32 217.34
132.08 218.07
133.77 218.83
135.50 219.65
137.27 220.52
139.14 221.49
140.99 222.44
142.80 223.37
144.60 224.29

146.38 225.20
148.18 226.12
149.97 227.04
151.79 227.96
153.62 228.89
155.40 229.77
157.16 230.61
158.90 231.42
160.66 232.22
162.41 232.99
164.17 233.74
165.45 234.26
165.45 243.15

Fattore di sicurezza (FS) 1.6843 - N.7 -- X Y Lambda= 0.1380
64.89 223.27
74.13 217.74
78.35 215.34
81.09 213.99
83.27 213.13
85.51 212.53
87.43 212.19
89.59 212.03
91.96 212.05
94.99 212.23
97.70 212.36
100.22 212.45
102.65 212.50
105.05 212.52
107.45 212.50
109.92 212.46
112.50 212.37
115.30 212.24
117.72 212.22
120.01 212.31
122.16 212.50
124.49 212.82
126.65 213.23
128.95 213.78
131.40 214.48
134.25 215.40
136.82 216.28
139.26 217.17
141.61 218.09
143.99 219.08
146.33 220.11
148.74 221.24
151.25 222.47
153.99 223.88
156.45 225.22
158.82 226.61
161.09 228.03
163.46 229.63
166.01 231.48
168.94 233.75
169.81 234.45
169.81 243.46

Fattore di sicurezza (FS) 1.6861 - N.8 -- X Y Lambda= 0.1406
62.05 222.94
66.54 218.67
68.66 216.73
70.07 215.55
71.22 214.68

72.37 213.97
73.39 213.43
74.52 212.94
75.75 212.51
77.29 212.05
78.60 211.70
79.80 211.42
80.93 211.21
82.10 211.03
83.21 210.91
84.36 210.83
85.56 210.79
86.90 210.79
88.18 210.79
89.42 210.80
90.64 210.82
91.85 210.84
93.06 210.87
94.28 210.91
95.52 210.96
96.80 211.01
98.01 211.07
99.20 211.16
100.38 211.26
101.58 211.38
102.75 211.52
103.96 211.68
105.19 211.86
106.50 212.08
107.73 212.30
108.93 212.53
110.11 212.78
111.31 213.06
112.48 213.35
113.69 213.67
114.93 214.02
116.26 214.42
117.49 214.81
118.68 215.22
119.84 215.65
121.03 216.12
122.20 216.61
123.39 217.15
124.64 217.73
125.99 218.40
127.23 219.04
128.42 219.70
129.57 220.37
130.76 221.11
131.91 221.86
133.08 222.66
134.28 223.53
135.57 224.48
136.83 225.43
138.06 226.35
139.29 227.27
140.51 228.18
141.73 229.10
142.95 230.01
144.17 230.92
145.38 231.84
146.11 232.39
146.11 241.24

Fattore di sicurezza (FS) 1.6891 - N.9 -- X Y Lambda= 0.1284

45.75 222.17
58.45 217.06
64.53 214.75
68.65 213.37
72.12 212.39
75.49 211.67
78.59 211.16
81.91 210.79
85.44 210.56
89.57 210.45
93.27 210.41
96.77 210.46
100.14 210.58
103.57 210.79
106.90 211.07
110.34 211.44
113.90 211.90
117.77 212.48
121.35 213.08
124.81 213.73
128.18 214.43
131.63 215.21
135.03 216.06
138.56 217.01
142.27 218.09
146.39 219.35
149.88 220.58
153.18 221.93
156.26 223.40
159.62 225.22
163.10 227.39
167.22 230.24
173.32 234.80
173.32 243.71

Fattore di sicurezza (FS) 1.6898 - N.10 -- X Y Lambda= 0.1487
71.07 224.32
76.06 219.67
78.38 217.60
79.89 216.39
81.10 215.54
82.33 214.86
83.39 214.38
84.59 213.99
85.90 213.67
87.59 213.37
89.06 213.13
90.41 212.95
91.68 212.81
92.98 212.71
94.23 212.64
95.53 212.61
96.87 212.61
98.33 212.64
99.70 212.69
101.02 212.76
102.31 212.85
103.62 212.96
104.90 213.10
106.20 213.25
107.54 213.44
108.95 213.65
110.30 213.87
111.63 214.09
112.94 214.33

114.25	214.58
115.56	214.83
116.87	215.11
118.20	215.39
119.55	215.70
120.90	216.01
122.23	216.31
123.57	216.62
124.89	216.93
126.22	217.25
127.56	217.56
128.91	217.89
130.28	218.22
131.60	218.56
132.91	218.90
134.20	219.26
135.52	219.65
136.82	220.05
138.14	220.47
139.49	220.92
140.92	221.40
142.25	221.89
143.56	222.39
144.84	222.90
146.15	223.45
147.43	224.02
148.74	224.63
150.10	225.28
151.55	226.01
152.89	226.72
154.20	227.44
155.47	228.17
156.78	228.96
158.05	229.76
159.34	230.61
160.67	231.52
162.07	232.51
163.43	233.49
164.23	234.06
164.23	243.05

---------- ANALISI DEFICIT DI RESISTENZA ----------
DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *
Analisi Deficit in riferimento a FS(progetto) = 1.100

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	1.625	12160.9	7485.2	3927.2	Surplus
2	1.639	12164.5	7421.5	4000.9	Surplus
3	1.642	11552.6	7036.2	3812.8	Surplus
4	1.657	11820.7	7134.7	3972.6	Surplus
5	1.670	10974.6	6572.6	3744.8	Surplus
6	1.683	11969.8	7112.4	4146.1	Surplus
7	1.684	12093.8	7180.1	4195.6	Surplus
8	1.686	10167.2	6030.0	3534.2	Surplus
9	1.689	14094.8	8344.4	4916.0	Surplus
10	1.690	10807.5	6395.7	3772.2	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 3534.2

Note: FTR --> Forza totale Resistente lungo la superficie
di scivolamento
FTA --> Forza totale Agente lungo la superficie
di scivolamento

IMPORTANTE! : Il Deficit o il Surplus di resistenza viene espresso in kN
per metro di LARGHEZZA rispetto al fronte della scarpata

TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (°)	W (kN/m)	ru (-)	U (kPa)	phi' (°)	(c',Cu) (kPa)
69.814	0.866	-34.27	6.78	0.00	0.00	0.00	100.00
70.679	0.866	-34.27	20.33	0.00	0.00	0.00	100.00
71.545	0.866	-34.27	33.88	0.00	0.00	0.00	100.00
72.411	0.866	-34.27	47.43	0.00	0.00	0.00	100.00
73.276	0.866	-34.27	60.98	0.00	0.00	0.00	100.00
74.142	0.358	-34.27	29.17	0.00	0.00	0.00	100.00
74.500	0.866	-34.27	80.74	0.00	0.00	0.00	100.00
75.366	0.866	-34.27	95.51	0.00	0.00	0.00	100.00
76.231	0.866	-34.27	110.28	0.00	0.00	0.00	100.00
77.097	0.866	-34.27	125.05	0.00	0.00	0.00	100.00
77.963	0.866	-34.27	139.82	0.00	0.00	0.00	100.00
78.828	0.206	-34.27	35.46	0.00	0.00	0.00	100.00
79.034	0.866	-32.96	157.86	0.00	0.00	0.00	100.00
79.900	0.866	-32.96	172.12	0.00	0.00	0.00	100.00
80.766	0.866	-32.96	186.39	0.00	0.00	0.00	100.00
81.631	0.866	-32.96	200.65	0.00	0.00	0.00	100.00
82.497	0.769	-32.96	190.10	0.00	0.00	0.00	100.00
83.266	0.866	-29.74	227.00	0.00	0.00	0.00	100.00
84.131	0.866	-29.74	240.09	0.00	0.00	0.00	100.00
84.997	0.866	-29.74	253.18	0.00	0.00	0.00	100.00
85.863	0.146	-29.74	44.05	0.00	0.00	0.00	100.00
86.009	0.866	-25.13	267.70	0.00	0.00	0.00	100.00
86.874	0.866	-25.13	279.23	0.00	0.00	0.00	100.00
87.740	0.459	-25.13	152.68	0.00	0.00	0.00	100.00
88.199	0.301	-18.86	101.82	0.00	0.00	0.00	100.00
88.500	0.866	-18.86	299.32	0.00	0.00	0.00	100.00
89.366	0.866	-18.86	309.06	0.00	0.00	0.00	100.00
90.231	0.211	-18.86	76.97	0.00	0.00	0.00	100.00
90.443	0.866	-13.61	320.43	0.00	0.00	0.00	100.00
91.308	0.866	-13.61	328.66	0.00	0.00	0.00	100.00
92.174	0.190	-13.61	73.32	0.00	0.00	0.00	100.00
92.364	0.866	-7.95	337.92	0.00	0.00	0.00	100.00
93.230	0.866	-7.95	344.58	0.00	0.00	0.00	100.00
94.096	0.430	-7.95	173.46	0.00	0.00	0.00	100.00
94.525	0.866	-3.32	353.94	0.00	0.00	0.00	100.00
95.391	0.866	-3.32	359.36	0.00	0.00	0.00	100.00
96.257	0.642	-3.32	270.01	0.00	0.00	0.00	100.00
96.898	0.866	-0.11	368.38	0.00	0.00	0.00	100.00
97.764	0.866	-0.11	372.94	0.00	0.00	0.00	100.00
98.630	0.866	-0.11	377.51	0.00	0.00	0.00	100.00
99.495	0.447	-0.11	196.71	0.00	0.00	0.00	100.00
99.942	0.866	0.59	384.34	0.00	0.00	0.00	100.00
100.808	0.866	0.59	388.72	0.00	0.00	0.00	100.00
101.674	0.866	0.59	393.10	0.00	0.00	0.00	100.00
102.539	0.110	0.59	50.22	0.00	0.00	0.00	100.00
102.649	0.866	1.41	397.92	0.00	0.00	0.00	100.00
103.515	0.866	1.41	402.08	0.00	0.00	0.00	100.00
104.381	0.119	1.41	55.74	0.00	0.00	0.00	100.00
104.500	0.669	1.41	313.64	0.00	0.00	0.00	100.00
105.169	0.866	2.29	409.12	0.00	0.00	0.00	100.00
106.034	0.866	2.29	412.43	0.00	0.00	0.00	100.00
106.900	0.684	2.29	328.23	0.00	0.00	0.00	100.00
107.584	0.866	3.21	418.22	0.00	0.00	0.00	100.00
108.450	0.866	3.21	421.28	0.00	0.00	0.00	100.00
109.315	0.671	3.21	328.62	0.00	0.00	0.00	100.00
109.986	0.514	4.08	252.85	0.00	0.00	0.00	100.00

110.500	0.866	4.08	428.06	0.00	0.00	0.00	100.00
111.366	0.866	4.08	430.48	0.00	0.00	0.00	100.00
112.231	0.124	4.08	62.04	0.00	0.00	0.00	100.00
112.356	0.866	4.94	433.12	0.00	0.00	0.00	100.00
113.221	0.866	4.94	435.31	0.00	0.00	0.00	100.00
114.087	0.692	4.94	349.58	0.00	0.00	0.00	100.00
114.779	0.866	5.76	439.12	0.00	0.00	0.00	100.00
115.645	0.866	5.76	441.09	0.00	0.00	0.00	100.00
116.510	0.767	5.76	392.48	0.00	0.00	0.00	100.00
117.277	0.866	6.50	444.69	0.00	0.00	0.00	100.00
118.143	0.866	6.50	446.45	0.00	0.00	0.00	100.00
119.009	0.866	6.50	448.21	0.00	0.00	0.00	100.00
119.874	0.067	6.50	34.69	0.00	0.00	0.00	100.00
119.941	0.866	7.67	449.95	0.00	0.00	0.00	100.00
120.807	0.193	7.67	100.52	0.00	0.00	0.00	100.00
121.000	0.866	7.67	451.39	0.00	0.00	0.00	100.00
121.866	0.528	7.67	275.92	0.00	0.00	0.00	100.00
122.394	0.866	8.99	452.45	0.00	0.00	0.00	100.00
123.260	0.866	8.99	452.86	0.00	0.00	0.00	100.00
124.125	0.646	8.99	338.08	0.00	0.00	0.00	100.00
124.771	0.866	10.37	453.40	0.00	0.00	0.00	100.00
125.637	0.866	10.37	453.43	0.00	0.00	0.00	100.00
126.502	0.575	10.37	301.30	0.00	0.00	0.00	100.00
127.078	0.866	11.75	453.30	0.00	0.00	0.00	100.00
127.943	0.557	11.75	291.31	0.00	0.00	0.00	100.00
128.500	0.866	11.75	452.26	0.00	0.00	0.00	100.00
129.366	0.096	11.75	50.18	0.00	0.00	0.00	100.00
129.462	0.866	13.13	450.64	0.00	0.00	0.00	100.00
130.328	0.866	13.13	448.97	0.00	0.00	0.00	100.00
131.193	0.590	13.13	305.11	0.00	0.00	0.00	100.00
131.783	0.866	14.49	445.96	0.00	0.00	0.00	100.00
132.649	0.866	14.49	443.91	0.00	0.00	0.00	100.00
133.515	0.674	14.49	344.28	0.00	0.00	0.00	100.00
134.189	0.866	15.73	440.08	0.00	0.00	0.00	100.00
135.054	0.866	15.73	437.67	0.00	0.00	0.00	100.00
135.920	0.781	15.73	393.03	0.00	0.00	0.00	100.00
136.702	0.866	16.81	432.93	0.00	0.00	0.00	100.00
137.567	0.866	16.81	430.21	0.00	0.00	0.00	100.00
138.433	0.866	16.81	427.49	0.00	0.00	0.00	100.00
139.299	0.169	16.81	82.96	0.00	0.00	0.00	100.00
139.467	0.033	18.33	16.09	0.00	0.00	0.00	100.00
139.500	0.866	18.33	423.79	0.00	0.00	0.00	100.00
140.366	0.866	18.33	420.41	0.00	0.00	0.00	100.00
141.231	0.705	18.33	340.05	0.00	0.00	0.00	100.00
141.937	0.866	20.09	414.02	0.00	0.00	0.00	100.00
142.802	0.866	20.09	410.12	0.00	0.00	0.00	100.00
143.668	0.633	20.09	297.59	0.00	0.00	0.00	100.00
144.301	0.866	21.97	403.08	0.00	0.00	0.00	100.00
145.167	0.866	21.97	398.61	0.00	0.00	0.00	100.00
146.033	0.534	21.97	243.78	0.00	0.00	0.00	100.00
146.567	0.866	23.80	391.08	0.00	0.00	0.00	100.00
147.433	0.866	23.80	386.04	0.00	0.00	0.00	100.00
148.298	0.637	23.80	281.02	0.00	0.00	0.00	100.00
148.936	0.866	25.56	376.99	0.00	0.00	0.00	100.00
149.801	0.699	25.56	300.16	0.00	0.00	0.00	100.00
150.500	0.703	25.56	298.25	0.00	0.00	0.00	100.00
151.203	0.866	27.28	361.73	0.00	0.00	0.00	100.00
152.069	0.866	27.28	355.35	0.00	0.00	0.00	100.00
152.934	0.625	27.28	252.40	0.00	0.00	0.00	100.00
153.559	0.866	28.82	344.10	0.00	0.00	0.00	100.00
154.424	0.866	28.82	337.19	0.00	0.00	0.00	100.00
155.290	0.719	28.82	274.74	0.00	0.00	0.00	100.00
156.009	0.866	30.11	324.32	0.00	0.00	0.00	100.00
156.875	0.866	30.11	316.95	0.00	0.00	0.00	100.00
157.740	0.866	30.11	309.59	0.00	0.00	0.00	100.00
158.606	0.106	30.11	37.57	0.00	0.00	0.00	100.00

158.712	0.866	30.90	301.18	0.00	0.00	0.00	100.00
159.578	0.866	30.90	293.53	0.00	0.00	0.00	100.00
160.444	0.788	30.90	260.53	0.00	0.00	0.00	100.00
161.232	0.866	31.77	278.77	0.00	0.00	0.00	100.00
162.097	0.866	31.77	270.81	0.00	0.00	0.00	100.00
162.963	0.703	31.77	214.08	0.00	0.00	0.00	100.00
163.666	0.834	32.65	246.97	0.00	0.00	0.00	100.00
164.500	0.866	32.65	248.04	0.00	0.00	0.00	100.00
165.366	0.674	32.65	187.16	0.00	0.00	0.00	100.00
166.040	0.866	33.54	232.44	0.00	0.00	0.00	100.00
166.905	0.866	33.54	223.43	0.00	0.00	0.00	100.00
167.771	0.673	33.54	167.43	0.00	0.00	0.00	100.00
168.444	0.866	34.64	207.20	0.00	0.00	0.00	100.00
169.310	0.866	34.64	197.76	0.00	0.00	0.00	100.00
170.175	0.866	34.64	188.32	0.00	0.00	0.00	100.00
171.041	0.045	34.64	9.63	0.00	0.00	0.00	100.00
171.086	0.866	35.51	178.22	0.00	0.00	0.00	100.00
171.952	0.866	35.51	168.43	0.00	0.00	0.00	100.00
172.818	0.866	35.51	158.65	0.00	0.00	0.00	100.00

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
alpha(°) : Angolo pendenza base concio
W(kN/m) : Forza peso concio
ru(-) : Coefficiente locale pressione interstiziale
U(kPa) : Pressione totale dei pori base concio
phi'(°) : Angolo di attrito efficace base concio
c'/Cu (kPa) : Coesione efficace o Resistenza al taglio in condizioni non drenate

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TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	ht (m)	yt (m)	yt' (--)	E(x) (kN/m)	T(x) (kN/m)	E' (kN)	rho(x) (--)	FS_qFEM (--)	FS_srmFEM (--)		
69.814	0.000	224.059	-0.456	0.0000000000E+000	0.0000000000E+000	8.7479308320E+000	0.054	4.191	5.199		
70.679	0.193	223.662	-0.456	2.3424493688E+001	1.8378630743E-002	4.5371113726E+001	0.054	4.191	5.199		
71.545	0.390	223.270	-0.480	7.8552411689E+001	3.5636502780E-001	1.0126162663E+002	0.054	2.224	2.752		
72.411	0.542	222.831	-0.464	1.9874187804E+002	2.2132298164E+000	1.3816301872E+002	0.054	1.673	2.065		
73.276	0.766	222.466	-0.394	3.1775831684E+002	5.3219282224E+000	1.3674137029E+002	0.054	1.497	1.844		
74.142	1.039	222.149	-0.369	4.3548643932E+002	9.8536690939E+000	1.4994173524E+002	0.054	1.434	1.761		
74.500	1.148	222.014	-0.394	4.9120915279E+002	1.2481559256E+001	1.6300899517E+002	0.054	1.424	1.745		
75.366	1.390	221.666	-0.379	6.4761185770E+002	2.0838495475E+001	1.7851147855E+002	0.068	1.424	1.733		
76.231	1.672	221.358	-0.356	8.0027159369E+002	3.0212347558E+001	1.7519883906E+002	0.084	1.442	1.741		
77.097	1.954	221.051	-0.347	9.5093902344E+002	3.9667002047E+001	1.7850707017E+002	0.096	1.448	1.735		
77.963	2.251	220.757	-0.331	1.1093264022E+003	5.0801157196E+001	1.8663871324E+002	0.110	1.483	1.759		
78.828	2.560	220.477	-0.319	1.2740723970E+003	6.3748411719E+001	1.9090456270E+002	0.124	1.542	1.804		
79.034	2.639	220.415	-0.317	1.3134347709E+003	6.7136162005E+001	1.9545582997E+002	0.127	1.560	1.818		
79.900	2.923	220.138	-0.325	1.4986740934E+003	8.4127619254E+001	2.2757586878E+002	0.146	1.656	1.891		
80.766	3.199	219.852	-0.311	1.7074439072E+003	1.0522463759E+002	2.3775224276E+002	0.168	1.795	1.990		
81.631	3.507	219.600	-0.293	1.9103019006E+003	1.2763082935E+002	2.4777026736E+002	0.189	1.970	2.104		
82.497	3.813	219.344	-0.284	2.1364162301E+003	1.5493112120E+002	2.5994858403E+002	0.213	2.232	2.253		
83.266	4.102	219.135	-0.260	2.3353472630E+003	1.8033156914E+002	2.5670022539E+002	0.234	2.547	2.407		
84.131	4.381	218.920	-0.240	2.5554823346E+003	2.0989618796E+002	2.5580970354E+002	0.257	3.014	2.605		
84.997	4.677	218.721	-0.206	2.7782385102E+003	2.4151264014E+002	2.4116629069E+002	0.280	3.661	2.843		
85.863	5.013	218.562	-0.180	2.9730209885E+003	2.7059186465E+002	2.1911879370E+002	0.298	4.438	3.085		
86.009	5.073	218.539	-0.147	3.0049092470E+003	2.7556143549E+002	2.1728181539E+002	0.301	4.587	3.128		
86.874	5.353	218.413	-0.131	3.1886852882E+003	3.0518395200E+002	2.0356944569E+002	0.319	5.510	3.397		
87.740	5.658	218.312	-0.110	3.3573553210E+003	3.3358326988E+002	1.8981627362E+002	0.335	6.469	3.674		
88.199	5.828	218.267	-0.091	3.4432255922E+003	3.4868455145E+002	1.8420249265E+002	0.343	6.907	3.822		
88.500	5.907	218.242	-0.072	3.4980995621E+003	3.5870948606E+002	1.8011733730E+002	0.349	7.072	3.919		
89.366	6.144	218.183	-0.057	3.6486685446E+003	3.8701467480E+002	1.6728986276E+002	0.364	7.195	4.191		
90.231	6.400	218.144	-0.043	3.7877336727E+003	4.1456882299E+002	1.5871297485E+002	0.378	6.868	4.436		
90.443	6.465	218.137	-0.019	3.8211899325E+003	4.2139800899E+002	1.5671072735E+002	0.381	6.748	4.493		

91.308	6.661	218.123	-0.005	3.9514250321E+003	4.4937044288E+002	1.4697977404E+002	0.396	6.108	4.671
92.174	6.875	218.127	0.007	4.0756605587E+003	4.7750744081E+002	1.3780077608E+002	0.411	5.451	4.786
92.364	6.924	218.131	0.034	4.1016333895E+003	4.8362081998E+002	1.3322075246E+002	0.414	5.314	4.797
93.230	7.078	218.163	0.050	4.2038604582E+003	5.0914880136E+002	1.1742004439E+002	0.427	4.751	4.770
94.096	7.254	218.219	0.068	4.3049263420E+003	5.3594355225E+002	1.1024261643E+002	0.441	4.277	4.643
94.525	7.347	218.251	0.087	4.3508927742E+003	5.4861273103E+002	1.0161229738E+002	0.447	4.088	4.557
95.391	7.477	218.331	0.101	4.4294310886E+003	5.7159174657E+002	8.7287972356E+001	0.459	3.831	4.326
96.257	7.622	218.426	0.122	4.5020171390E+003	5.9372695442E+002	8.3655953579E+001	0.469	3.641	4.064
96.898	7.748	218.515	0.140	4.5556315249E+003	6.1057631774E+002	7.7163506088E+001	0.477	3.532	3.838
97.764	7.871	218.637	0.150	4.6150189074E+003	6.2991407308E+002	6.7056620410E+001	0.486	3.430	3.559
98.630	8.011	218.774	0.158	4.6717287246E+003	6.4863701997E+002	5.9855722657E+001	0.495	3.344	3.290
99.495	8.147	218.910	0.155	4.7186489703E+003	6.6418683993E+002	5.0508118671E+001	0.501	3.277	3.061
99.942	8.217	218.978	0.153	4.7403731338E+003	6.7135704746E+002	4.7652568348E+001	0.503	3.245	2.959
100.808	8.340	219.110	0.149	4.7800341018E+003	6.8438440066E+002	4.2493208070E+001	0.507	3.185	2.779
101.674	8.457	219.236	0.143	4.8139429385E+003	6.9539043090E+002	3.7203791725E+001	0.509	3.129	2.628
102.539	8.569	219.357	0.140	4.8444461765E+003	7.0526122916E+002	3.4394372650E+001	0.511	3.071	2.499
102.649	8.584	219.373	0.135	4.8482141190E+003	7.0648447195E+002	3.3886983257E+001	0.511	3.064	2.484
103.515	8.679	219.489	0.139	4.8748181578E+003	7.1516496107E+002	3.0390348407E+001	0.512	3.004	2.375
104.381	8.781	219.613	0.143	4.9008298686E+003	7.2383092048E+002	2.8481201469E+001	0.513	2.940	2.269
104.500	8.795	219.630	0.145	4.9042018675E+003	7.2497668082E+002	2.8238140471E+001	0.513	2.930	2.255
105.169	8.876	219.728	0.150	4.9229791703E+003	7.3144644390E+002	2.7678311447E+001	0.514	2.876	2.179
106.034	8.975	219.860	0.159	4.9464821022E+003	7.3986766120E+002	2.6288275190E+001	0.515	2.804	2.085
106.900	9.082	220.002	0.165	4.9684928738E+003	7.4826612832E+002	2.4321408075E+001	0.517	2.725	1.992
107.584	9.168	220.116	0.169	4.9845323938E+003	7.5468769134E+002	2.2628928176E+001	0.518	2.662	1.924
108.450	9.267	220.264	0.170	5.0032239036E+003	7.6260632403E+002	2.0147291271E+001	0.520	2.585	1.845
109.315	9.366	220.411	0.167	5.0194140220E+003	7.6998032742E+002	1.6657779402E+001	0.521	2.510	1.773
109.986	9.438	220.520	0.162	5.0295272078E+003	7.7502473247E+002	1.3738930689E+001	0.522	2.455	1.724
110.500	9.484	220.603	0.158	5.0360612797E+003	7.7858467627E+002	1.1655519487E+001	0.522	2.415	1.689
111.366	9.557	220.738	0.151	5.0446023423E+003	7.8386712499E+002	8.0677303893E+000	0.523	2.354	1.637
112.231	9.622	220.864	0.147	5.0500291907E+003	7.8815207774E+002	5.4252677087E+000	0.523	2.297	1.593
112.356	9.631	220.883	0.150	5.0506888094E+003	7.8874721113E+002	5.0308947881E+000	0.523	2.288	1.586
113.221	9.687	221.013	0.159	5.0533978460E+003	7.9239750925E+002	1.6557466141E+000	0.522	2.233	1.545
114.087	9.756	221.157	0.173	5.0535554547E+003	7.9560349464E+002	-1.3746804893E+000	0.522	2.175	1.503
114.779	9.821	221.282	0.187	5.0517427401E+003	7.9777398713E+002	-3.9436837298E+000	0.521	2.126	1.469
115.645	9.901	221.448	0.194	5.0468947357E+003	7.9992447683E+002	-7.1033365681E+000	0.520	2.065	1.428
116.510	9.983	221.618	0.190	5.0394445139E+003	8.0131762060E+002	-9.6742567806E+000	0.519	2.006	1.390
117.277	10.046	221.759	0.181	5.0312980702E+003	8.0182286830E+002	-1.1614847204E+001	0.517	1.958	1.361
118.143	10.103	221.914	0.176	5.0202720649E+003	8.0173645095E+002	-1.3942046198E+001	0.515	1.907	1.332
119.009	10.153	222.063	0.163	5.0071597746E+003	8.0084945810E+002	-1.5784526166E+001	0.512	1.860	1.307
119.874	10.187	222.195	0.152	4.9929438268E+003	7.9925835699E+002	-1.6506139128E+001	0.509	1.816	1.287
119.941	10.189	222.205	0.150	4.9918398465E+003	7.9911852855E+002	-1.6750687521E+001	0.509	1.813	1.285
120.807	10.203	222.336	0.152	4.9746711316E+003	7.9667272647E+002	-2.2643478586E+001	0.506	1.771	1.268
121.000	10.207	222.366	0.153	4.9701798679E+003	7.9596235527E+002	-2.3447261379E+001	0.505	1.761	1.264
121.866	10.222	222.498	0.155	4.9491945271E+003	7.9244160458E+002	-2.7040314125E+001	0.502	1.718	1.249
122.394	10.236	222.583	0.167	4.9340026956E+003	7.8971405705E+002	-3.0559625828E+001	0.500	1.690	1.240
123.260	10.248	222.731	0.179	4.9049800730E+003	7.8429039055E+002	-3.7114659559E+001	0.496	1.644	1.225
124.125	10.272	222.893	0.187	4.8697449383E+003	7.7741259855E+002	-4.2390915234E+001	0.491	1.597	1.211
124.771	10.291	223.014	0.188	4.8415588593E+003	7.7180657170E+002	-4.6293535634E+001	0.487	1.562	1.201
125.637	10.295	223.176	0.186	4.7984163190E+003	7.6314193765E+002	-5.1604497270E+001	0.482	1.517	1.189
126.502	10.296	223.336	0.184	4.7522143980E+003	7.5380316501E+002	-5.2894596039E+001	0.476	1.475	1.177
127.078	10.297	223.441	0.193	4.7219725455E+003	7.4767496582E+002	-5.3192652664E+001	0.472	1.450	1.171
127.943	10.289	223.613	0.188	4.6751242852E+003	7.3822840733E+002	-5.5298495976E+001	0.466	1.419	1.164
128.500	10.268	223.708	0.165	4.6439195006E+003	7.3196043625E+002	-5.6039408048E+001	0.463	1.400	1.160
129.366	10.227	223.848	0.160	4.5954324359E+003	7.2226844970E+002	-5.5779909819E+001	0.458	1.374	1.155
129.462	10.222	223.863	0.162	4.5900683489E+003	7.2120210580E+002	-5.6261901996E+001	0.457	1.371	1.155
130.328	10.161	224.004	0.167	4.5374098016E+003	7.1078686809E+002	-6.3728163029E+001	0.452	1.347	1.151
131.193	10.107	224.152	0.172	4.4797338103E+003	6.9937823901E+002	-6.8797359095E+001	0.447	1.324	1.148
131.783	10.071	224.254	0.177	4.4382603494E+003	6.9116865203E+002	-7.2205744899E+001	0.443	1.308	1.146
132.649	10.004	224.410	0.196	4.3733057607E+003	6.7829870455E+002	-8.2935193487E+001	0.436	1.288	1.144
133.515	9.963	224.593	0.217	4.2946720853E+003	6.6270682549E+002	-9.5077072269E+001	0.428	1.267	1.143
134.189	9.940	224.744	0.224	4.2283487369E+003	6.4957840233E+002	-9.8807535601E+001	0.421	1.251	1.143
135.054	9.890	224.937	0.223	4.1423390289E+003	6.3266074972E+002	-9.9668892753E+001	0.413	1.233	1.143
135.920	9.838	225.130	0.212	4.0557889019E+003	6.1585800465E+002	-9.5465892720E+001	0.404	1.218	1.143
136.702	9.775	225.286	0.198	3.9843696193E+003	6.0223015053E+002	-9.0677058051E+001	0.397	1.206	1.145
137.567	9.683	225.456	0.192	3.9065571333E+003	5.8772056932E+002	-8.8871307347E+001	0.390	1.194	1.147
138.433	9.585	225.620	0.186	3.8305039777E+003	5.7393952256E+002	-8.6481693733E+001	0.383	1.184	1.149

139.299	9.481	225.777	0.180	3.7568287036E+003	5.6089033059E+002	-8.1224688864E+001	0.377	1.173	1.152
139.467	9.459	225.806	0.171	3.7432595341E+003	5.5852458329E+002	-8.0701316594E+001	0.376	1.171	1.153
139.500	9.454	225.812	0.190	3.7406163728E+003	5.5806578341E+002	-8.1102175580E+001	0.375	1.171	1.153
140.366	9.332	225.977	0.196	3.6622682167E+003	5.4459830632E+002	-9.3121303075E+001	0.369	1.161	1.157
141.231	9.219	226.150	0.203	3.5793925823E+003	5.3050290943E+002	-9.7550261282E+001	0.363	1.150	1.161
141.937	9.131	226.296	0.219	3.5095449496E+003	5.1866060970E+002	-1.0418967312E+002	0.357	1.140	1.165
142.802	9.012	226.494	0.234	3.4138677792E+003	5.0240895889E+002	-1.1308925275E+002	0.349	1.129	1.171
143.668	8.903	226.701	0.246	3.3137500305E+003	4.8533431523E+002	-1.1987199811E+002	0.340	1.118	1.177
144.301	8.832	226.862	0.268	3.2358749630E+003	4.7199855940E+002	-1.2749176588E+002	0.333	1.109	1.181
145.167	8.723	227.102	0.280	3.1201453314E+003	4.5213619423E+002	-1.3474232594E+002	0.323	1.098	1.189
146.033	8.619	227.347	0.268	3.0025914090E+003	4.3193798621E+002	-1.2358147976E+002	0.312	1.088	1.196
146.567	8.533	227.477	0.257	2.9405916695E+003	4.2129187192E+002	-1.1989846260E+002	0.306	1.083	1.200
147.433	8.382	227.707	0.269	2.8313917416E+003	4.0262434281E+002	-1.2698026149E+002	0.297	1.076	1.207
148.298	8.236	227.943	0.268	2.7207468176E+003	3.8376974735E+002	-1.2445615300E+002	0.286	1.070	1.215
148.936	8.122	228.111	0.276	2.6429942770E+003	3.7057477125E+002	-1.2577295365E+002	0.279	1.066	1.221
149.801	7.955	228.357	0.286	2.5296613223E+003	3.5140779606E+002	-1.3065201192E+002	0.269	1.063	1.229
150.500	7.821	228.558	0.290	2.4385330569E+003	3.3603428912E+002	-1.3065097791E+002	0.260	1.060	1.237
151.203	7.691	228.764	0.298	2.3465403878E+003	3.2058434015E+002	-1.3184311597E+002	0.251	1.059	1.244
152.069	7.507	229.026	0.322	2.2313683859E+003	3.0133850603E+002	-1.3970969654E+002	0.241	1.058	1.254
152.934	7.356	229.322	0.338	2.1046566715E+003	2.8036758104E+002	-1.4215911803E+002	0.228	1.059	1.266
153.559	7.241	229.530	0.338	2.0177751715E+003	2.6614186061E+002	-1.3956978538E+002	0.219	1.061	1.274
154.424	7.061	229.825	0.346	1.8964119664E+003	2.4651031868E+002	-1.4016791510E+002	0.207	1.064	1.286
155.290	6.888	230.128	0.345	1.7750981273E+003	2.2722079758E+002	-1.3543026887E+002	0.195	1.069	1.299
156.009	6.736	230.372	0.343	1.6805579960E+003	2.1250019497E+002	-1.3140585991E+002	0.185	1.073	1.309
156.875	6.534	230.672	0.345	1.5669233898E+003	1.9517427075E+002	-1.2777835528E+002	0.174	1.079	1.322
157.740	6.328	230.968	0.341	1.4593313797E+003	1.7922781865E+002	-1.2198161279E+002	0.164	1.087	1.335
158.606	6.121	231.263	0.339	1.3557328529E+003	1.6420463880E+002	-1.1145329298E+002	0.154	1.094	1.349
158.712	6.093	231.298	0.345	1.3439747496E+003	1.6252625065E+002	-1.1116878306E+002	0.153	1.095	1.350
159.578	5.877	231.599	0.353	1.2426251175E+003	1.4816368415E+002	-1.1631475197E+002	0.143	1.104	1.364
160.444	5.668	231.908	0.362	1.1425954240E+003	1.3418559656E+002	-1.1513402028E+002	0.133	1.114	1.380
161.232	5.485	232.197	0.371	1.0521774585E+003	1.2164380726E+002	-1.1437028657E+002	0.123	1.124	1.395
162.097	5.274	232.522	0.378	9.5353526359E+002	1.0803497753E+002	-1.1276154821E+002	0.113	1.137	1.414
162.963	5.067	232.851	0.382	8.5694990441E+002	9.4755312567E+001	-1.1042350807E+002	0.102	1.152	1.435
163.666	4.902	233.121	0.386	7.7997114525E+002	8.4202114250E+001	-1.0866526376E+002	0.093	1.165	1.456
164.500	4.691	233.445	0.399	6.9016802558E+002	7.1956375733E+001	-1.0800055067E+002	0.082	1.184	1.483
165.366	4.491	233.800	0.400	5.9639449605E+002	5.9420334665E+001	-1.0226459845E+002	0.070	1.210	1.519
166.040	4.320	234.061	0.382	5.3063298192E+002	5.0856968076E+001	-9.4341512705E+001	0.061	1.232	1.550
166.905	4.073	234.387	0.367	4.5252514812E+002	4.1014675036E+001	-8.7350217893E+001	0.054	1.260	1.589
167.771	3.808	234.696	0.361	3.7940084955E+002	3.1846397015E+001	-8.4854084340E+001	0.054	1.292	1.634
168.444	3.608	234.942	0.362	3.2211092320E+002	2.4750466787E+001	-8.2129827079E+001	0.054	1.321	1.674
169.310	3.321	235.254	0.361	2.5437923660E+002	1.6962200519E+001	-7.5103130960E+001	0.054	1.367	1.737
170.175	3.038	235.568	0.360	1.9208255101E+002	1.0573133139E+001	-6.7203590157E+001	0.054	1.420	1.808
171.041	2.748	235.876	0.354	1.3802758359E+002	5.8769397872E+000	-4.9913136320E+001	0.054	1.477	1.883
171.086	2.730	235.890	0.366	1.3578806962E+002	5.7093712231E+000	-4.9238589900E+001	0.054	1.479	1.886
171.952	2.432	236.210	0.491	9.3434572824E+001	3.3836476122E+000	-5.6736296085E+001	0.054	1.547	1.978
172.818	2.345	236.741	0.491	3.7558766400E+001	1.1051015899E+000	-5.3966906151E+001	0.054	1.674	2.135

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
ht(m) : Altezza linea di thrust da nodo sinistro base concio
yt(m) : coordinata Y linea di trust
yt'(-) : gradiente pendenza locale linea di trust
E(x)(kN/m) : Forza Normale interconcio
T(x)(kN/m) : Forza Tangenziale interconcio
E' (kN) : derivata Forza normale interconcio
Rho(x) (-) : fattore mobilizzazione resistenza al taglio verticale interconcio ZhU et al.(2003)
FS_qFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by qFEM
FS_srmFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by SRM Procedure

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TABELLA SFORZI DI TAGLIO DISTRIBUITI LUNGO SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	dl (m)	alpha (°)	TauStress (kPa)	TauF (kN/m)	TauStrength (kPa)	TauS (kN/m)

69.814	0.866	1.048	-34.272	-3.455	-3.619	100.016	104.771
70.679	0.866	1.048	-34.272	-10.365	-10.858	100.295	105.063
71.545	0.866	1.048	-34.272	-17.275	-18.097	101.622	106.453
72.411	0.866	1.048	-34.272	-24.185	-25.335	102.715	107.598
73.276	0.866	1.048	-34.272	-31.095	-32.574	103.958	108.900
74.142	0.358	0.433	-34.272	-35.979	-15.581	105.552	45.710
74.500	0.866	1.048	-34.272	-41.173	-43.131	107.299	112.400
75.366	0.866	1.048	-34.272	-48.705	-51.021	108.187	113.330
76.231	0.866	1.048	-34.272	-56.238	-58.911	108.257	113.404
77.097	0.866	1.048	-34.272	-63.770	-66.802	109.724	114.941
77.963	0.866	1.048	-34.272	-71.302	-74.692	111.307	116.599
78.828	0.206	0.249	-34.272	-75.965	-18.940	112.431	28.032
79.034	0.866	1.032	-32.956	-78.743	-81.238	114.556	118.185
79.900	0.866	1.032	-32.956	-85.859	-88.579	118.073	121.814
80.766	0.866	1.032	-32.956	-92.976	-95.921	119.195	122.971
81.631	0.866	1.032	-32.956	-100.092	-103.263	123.388	127.296
82.497	0.769	0.916	-32.956	-106.809	-97.832	124.509	114.045
83.266	0.866	0.997	-29.736	-106.017	-105.693	123.897	123.519
84.131	0.866	0.997	-29.736	-112.131	-111.788	125.556	125.172
84.997	0.866	0.997	-29.736	-118.244	-117.883	123.505	123.128
85.863	0.146	0.168	-29.736	-121.817	-20.510	123.786	20.841
86.009	0.866	0.956	-25.130	-110.024	-105.201	121.375	116.055
86.874	0.866	0.956	-25.130	-114.763	-109.733	120.492	115.211
87.740	0.459	0.507	-25.130	-118.389	-59.999	120.559	61.099
88.199	0.301	0.318	-18.862	-92.870	-29.546	116.551	37.080
88.500	0.866	0.915	-18.862	-94.944	-86.854	116.252	106.346
89.366	0.866	0.915	-18.862	-98.036	-89.683	115.821	105.952
90.231	0.211	0.223	-18.862	-99.959	-22.333	116.055	25.929
90.443	0.866	0.891	-13.610	-72.418	-64.501	112.006	99.761
91.308	0.866	0.891	-13.610	-74.277	-66.157	112.077	99.824
92.174	0.190	0.196	-13.610	-75.412	-14.759	111.942	21.908
92.364	0.866	0.874	-7.954	-40.099	-35.049	106.566	93.147
93.230	0.866	0.874	-7.954	-40.890	-35.741	106.892	93.432
94.096	0.430	0.434	-7.954	-41.482	-17.991	106.567	46.219
94.525	0.866	0.867	-3.325	-9.411	-8.160	102.497	88.878
95.391	0.866	0.867	-3.325	-9.555	-8.285	102.405	88.798
96.257	0.642	0.643	-3.325	-9.680	-6.225	102.469	65.895
96.898	0.866	0.866	-0.106	14.104	12.209	100.067	86.625
97.764	0.866	0.866	-0.106	14.278	12.360	100.065	86.623
98.630	0.866	0.866	-0.106	14.453	12.512	100.054	86.614
99.495	0.447	0.447	-0.106	14.586	6.520	100.048	44.721
99.942	0.866	0.866	0.589	20.103	17.403	99.749	86.353
100.808	0.866	0.866	0.589	20.332	17.602	99.788	86.387
101.674	0.866	0.866	0.589	20.561	17.800	99.810	86.406
102.539	0.110	0.110	0.589	20.690	2.274	99.814	10.969
102.649	0.866	0.866	1.413	27.410	23.735	99.598	86.245
103.515	0.866	0.866	1.413	27.696	23.983	99.599	86.246
104.381	0.119	0.119	1.413	27.860	3.325	99.615	11.888
104.500	0.669	0.669	1.413	27.973	18.708	99.612	66.617
105.169	0.866	0.866	2.289	35.379	30.650	99.369	86.089
106.034	0.866	0.866	2.289	35.664	30.898	99.371	86.091
106.900	0.684	0.685	2.289	35.920	24.590	99.391	68.042
107.584	0.866	0.867	3.208	43.848	38.018	99.170	85.982
108.450	0.866	0.867	3.208	44.169	38.296	99.227	86.032
109.315	0.671	0.672	3.208	44.454	29.873	99.318	66.742
109.986	0.514	0.515	4.077	52.041	26.806	99.202	51.098
110.500	0.866	0.868	4.077	52.290	45.381	99.297	86.176
111.366	0.866	0.868	4.077	52.585	45.637	99.430	86.291
112.231	0.124	0.125	4.077	52.754	6.577	99.449	12.399
112.356	0.866	0.869	4.937	60.279	52.376	99.413	86.379
113.221	0.866	0.869	4.937	60.583	52.640	99.484	86.441
114.087	0.692	0.695	4.937	60.856	42.274	99.563	69.162
114.779	0.866	0.870	5.756	68.193	59.331	99.597	86.655
115.645	0.866	0.870	5.756	68.497	59.596	99.739	86.778
116.510	0.767	0.771	5.756	68.785	53.029	99.893	77.011
117.277	0.866	0.871	6.501	75.534	65.810	100.018	87.143

118.143	0.866	0.871	6.501	75.833	66.071	100.187	87.290
119.009	0.866	0.871	6.501	76.133	66.332	100.336	87.419
119.874	0.067	0.067	6.501	76.294	5.134	100.382	6.755
119.941	0.866	0.873	7.673	86.651	75.688	100.607	87.879
120.807	0.193	0.195	7.673	86.821	16.908	100.791	19.629
121.000	0.866	0.873	7.673	86.926	75.929	100.874	88.113
121.866	0.528	0.533	7.673	87.046	46.414	101.110	53.913
122.394	0.866	0.876	8.985	98.473	86.303	101.570	89.018
123.260	0.866	0.876	8.985	98.563	86.383	101.991	89.387
124.125	0.646	0.654	8.985	98.642	64.487	102.176	66.798
124.771	0.866	0.880	10.375	110.516	97.260	102.881	90.540
125.637	0.866	0.880	10.375	110.524	97.267	103.105	90.738
126.502	0.575	0.585	10.375	110.531	64.633	103.066	60.267
127.078	0.866	0.884	11.749	121.962	107.838	103.534	91.544
127.943	0.557	0.569	11.749	121.886	69.301	103.647	58.931
128.500	0.866	0.884	11.749	121.683	107.591	103.626	91.625
129.366	0.096	0.098	11.749	121.491	11.939	103.590	10.180
129.462	0.866	0.889	13.132	132.458	117.744	104.325	92.736
130.328	0.866	0.889	13.132	131.967	117.307	104.737	93.102
131.193	0.590	0.606	13.132	131.554	79.720	105.001	63.629
131.783	0.866	0.894	14.485	141.668	126.664	105.850	94.639
132.649	0.866	0.894	14.485	141.016	126.080	107.087	95.745
133.515	0.674	0.696	14.485	140.435	97.784	107.662	74.964
134.189	0.866	0.899	15.732	149.159	134.146	108.286	97.388
135.054	0.866	0.899	15.732	148.342	133.412	108.230	97.337
135.920	0.781	0.812	15.732	147.565	119.806	107.394	87.192
136.702	0.866	0.904	16.806	154.459	139.675	107.537	97.244
137.567	0.866	0.904	16.806	153.488	138.797	107.159	96.902
138.433	0.866	0.904	16.806	152.518	137.920	106.778	96.558
139.299	0.169	0.176	16.806	151.938	26.764	106.309	18.726
139.467	0.033	0.034	18.333	162.273	5.596	106.799	3.683
139.500	0.866	0.912	18.333	161.607	147.377	107.547	98.077
140.366	0.866	0.912	18.333	160.319	146.203	107.898	98.398
141.231	0.705	0.743	18.333	159.151	118.256	108.144	80.356
141.937	0.866	0.922	20.093	169.074	155.848	109.841	101.248
142.802	0.866	0.922	20.093	167.481	154.379	110.339	101.707
143.668	0.633	0.674	20.093	166.102	112.018	111.037	74.883
144.301	0.866	0.933	21.970	175.570	163.887	112.934	105.418
145.167	0.866	0.933	21.970	173.621	162.067	113.152	105.623
146.033	0.534	0.576	21.970	172.045	99.119	111.232	64.083
146.567	0.866	0.946	23.797	180.029	170.326	112.935	106.848
147.433	0.866	0.946	23.797	177.705	168.127	113.064	106.970
148.298	0.637	0.697	23.797	175.688	122.390	112.417	78.313
148.936	0.866	0.960	25.563	181.925	174.575	114.003	109.397
149.801	0.699	0.774	25.563	179.476	138.996	113.916	88.223
150.500	0.703	0.779	25.563	177.243	138.112	113.900	88.753
151.203	0.866	0.974	27.283	181.788	177.066	114.715	111.735
152.069	0.866	0.974	27.283	178.580	173.941	116.034	113.020
152.934	0.625	0.703	27.283	175.819	123.546	115.077	80.863
153.559	0.866	0.988	28.818	178.554	176.417	115.560	114.177
154.424	0.866	0.988	28.818	174.970	172.875	115.289	113.909
155.290	0.719	0.820	28.818	171.689	140.859	114.051	93.572
156.009	0.866	1.001	30.112	172.403	172.526	114.112	114.194
156.875	0.866	1.001	30.112	168.489	168.609	112.988	113.069
157.740	0.866	1.001	30.112	164.575	164.692	112.236	112.317
158.606	0.106	0.123	30.112	162.377	19.984	111.115	13.675
158.712	0.866	1.009	30.904	162.288	163.733	111.879	112.875
159.578	0.866	1.009	30.904	158.167	159.576	111.561	112.554
160.444	0.788	0.918	30.904	154.232	141.633	111.396	102.296
161.232	0.866	1.018	31.766	152.285	155.054	111.432	113.458
162.097	0.866	1.018	31.766	147.935	150.626	111.155	113.177
162.963	0.703	0.827	31.766	143.995	119.075	110.915	91.721
163.666	0.834	0.990	32.654	141.883	140.531	110.838	109.782
164.500	0.866	1.028	32.654	137.272	141.140	110.688	113.806
165.366	0.674	0.801	32.654	133.002	106.499	109.375	87.579
166.040	0.866	1.039	33.536	130.176	135.194	108.506	112.688

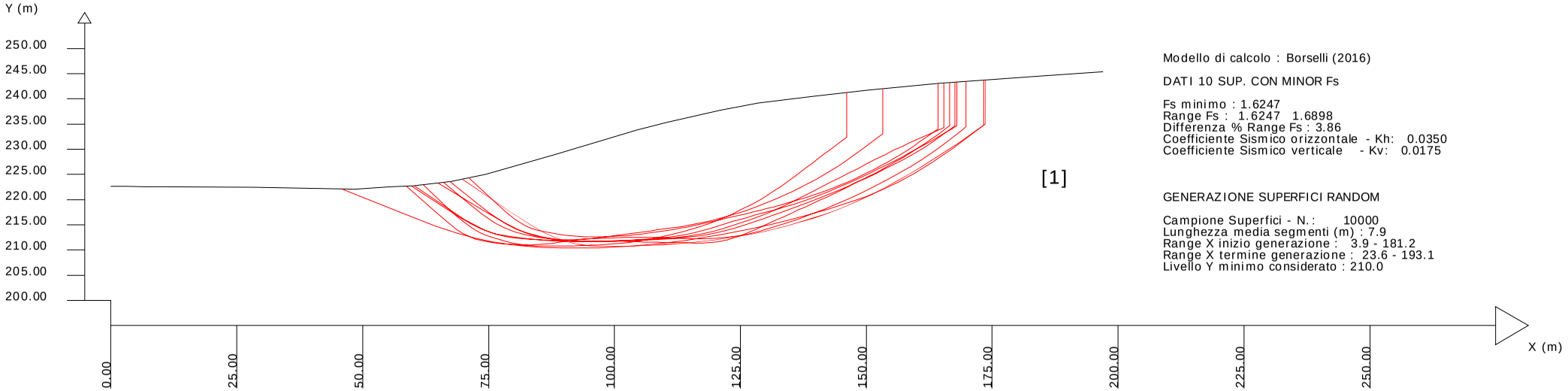
166.905	0.866	1.039	33.536	125.131	129.953	107.924	112.083
167.771	0.673	0.807	33.536	120.647	97.382	107.891	87.085
168.444	0.866	1.052	34.643	117.612	123.753	106.836	112.414
169.310	0.866	1.052	34.643	112.254	118.115	105.608	111.122
170.175	0.866	1.052	34.643	106.896	112.477	104.122	109.559
171.041	0.045	0.055	34.643	104.076	5.752	102.800	5.681
171.086	0.866	1.063	35.512	102.116	108.597	102.064	108.542
171.952	0.866	1.063	35.512	96.509	102.635	102.022	108.498
172.818	0.866	1.063	35.512	90.903	96.673	100.981	107.390

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
dl(m) : lunghezza base concio
alpha(°) : Angolo pendenza base concio
TauStress(kPa) : Sforzo di taglio su base concio
TauF (kN/m) : Forza di taglio su base concio
TauStrength(kPa) : Resistenza al taglio su base concio
TauS (kN/m) : Forza resistente al taglio su base concio

SSAP 5.0.2 (2021) - Slope Stability Analysis Program
Software by Dr.Geol. L.Borselli - www.lorenzo-borselli.eu
SSAP/DXF generator rel. 2.0 (2020)

Data : 18/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Borselli (2016)

DATI 10 SUP. CON MINOR Fs

Fs minimo : 1.6247
Range Fs : 1.6247 1.6898
Differenza % Range Fs : 3.86
Coefficiente Sismico orizzontale - Kh: 0.0350
Coefficiente Sismico verticale - Kv: 0.0175

GENERAZIONE SUPERFICI RANDOM

Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 7.9
Range X inizio generazione : 3.9 - 181.2
Range X termine generazione : 23.6 - 193.1
Livello Y minimo considerato : 210.0

Parametri Geotecnici degli strati # ----------

N.	phi`	C`	Cu	Gamm	GammSat	sgci	GSI	mi	D
..	deg	kPa	kPa	kN/m3	kN/m3	MPa	..	..	..
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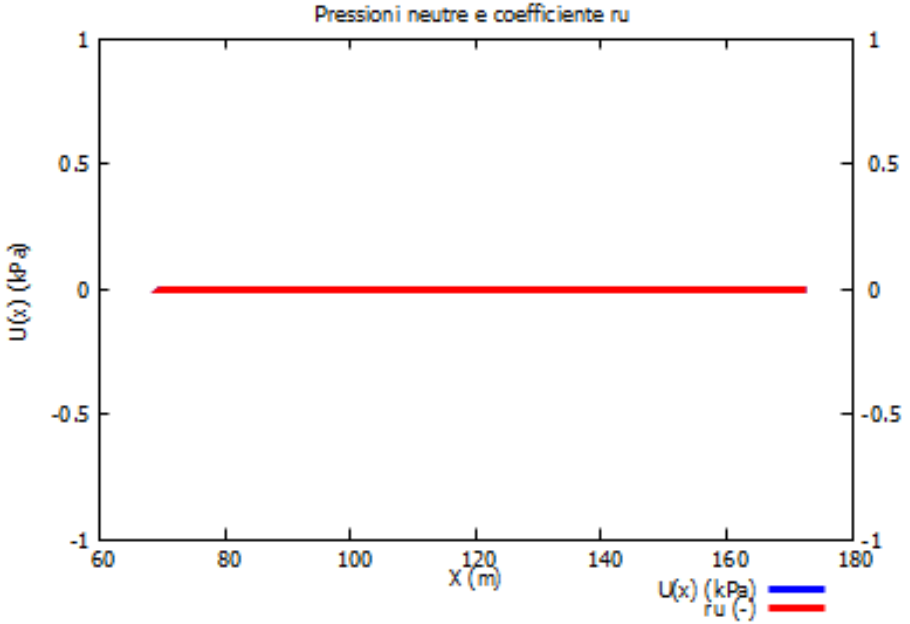
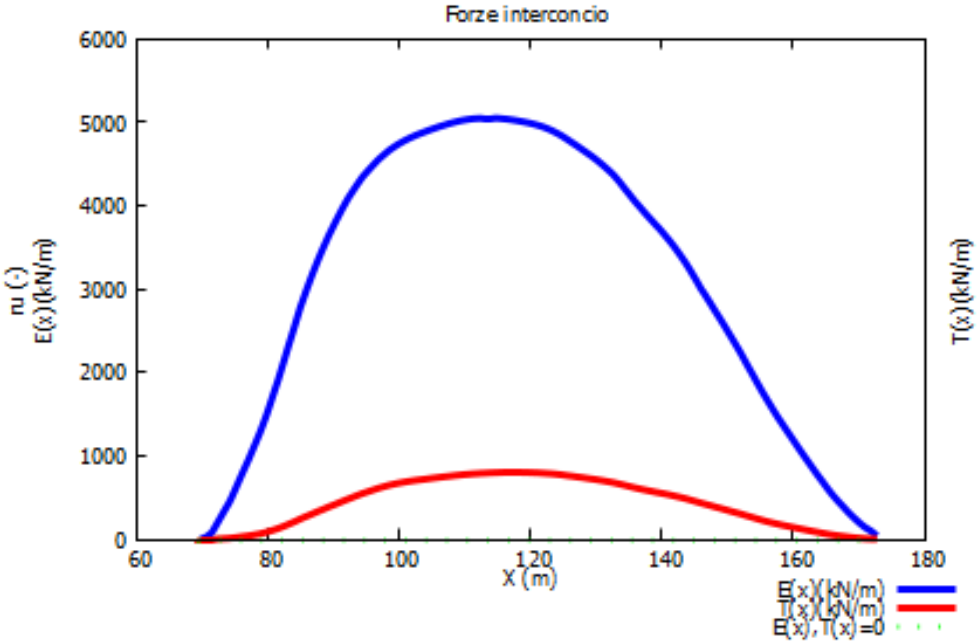
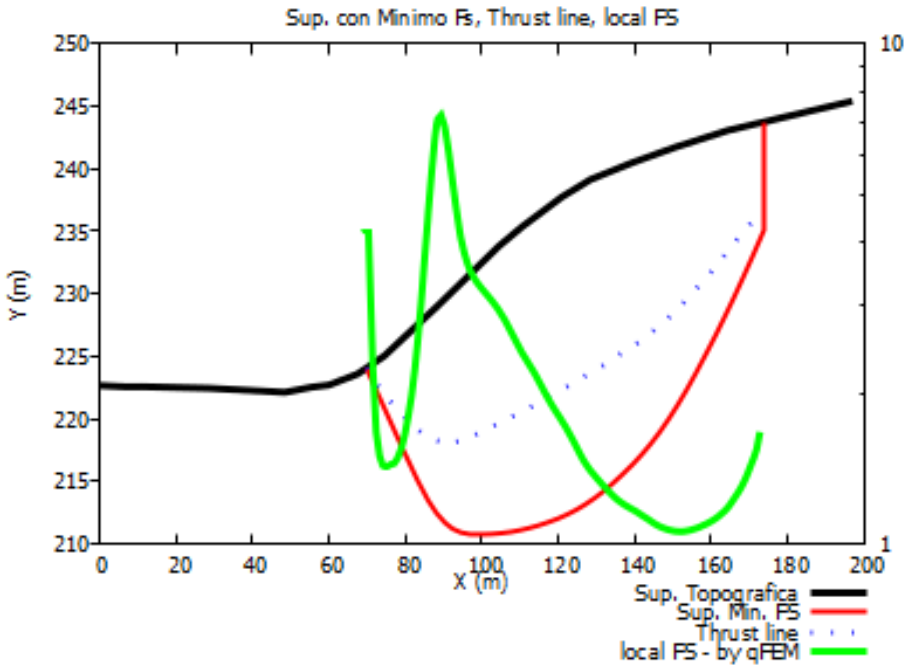
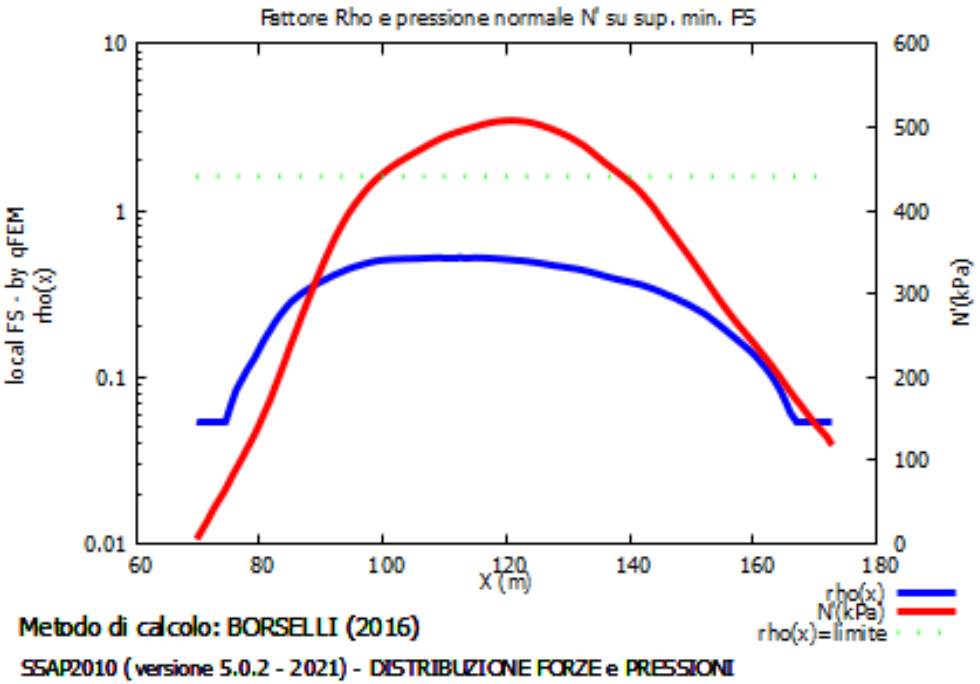




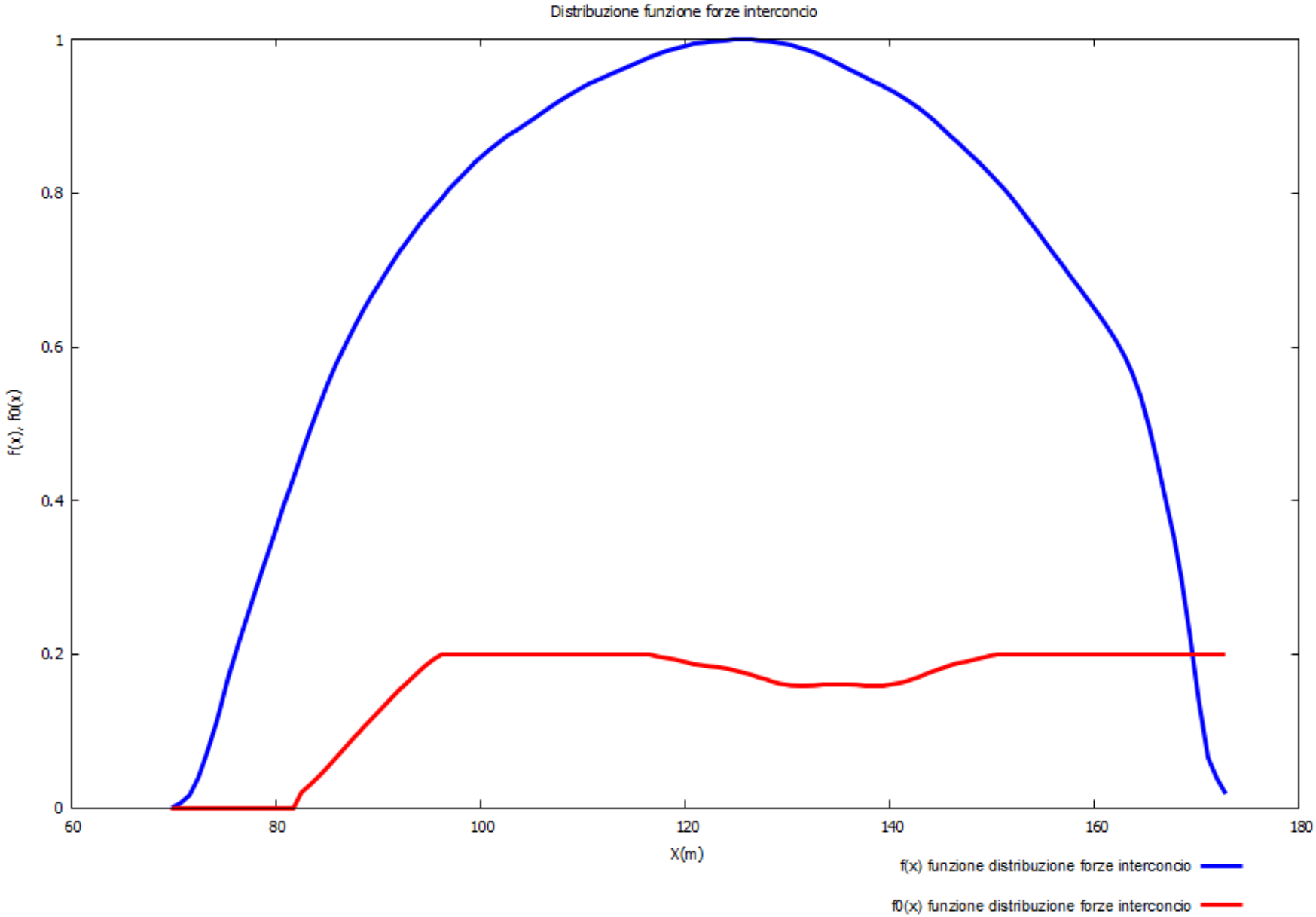


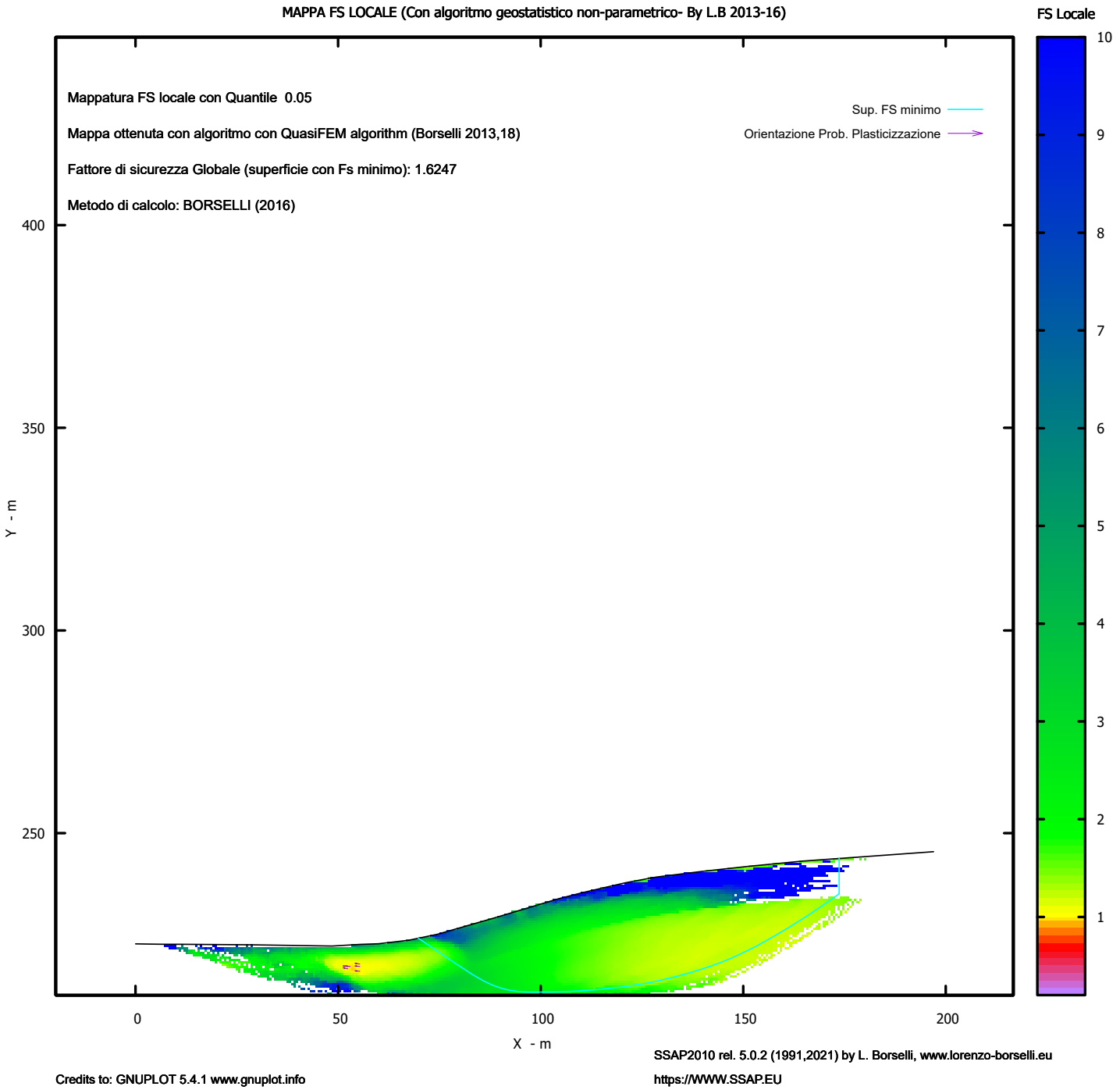


Metodo di calcolo: BORSELLI (2016)

SSAP2010 (versione 5.0.2 - 2021) - DISTRIBUZIONE FORZE e PRESSIONI

18/11/21 14:17

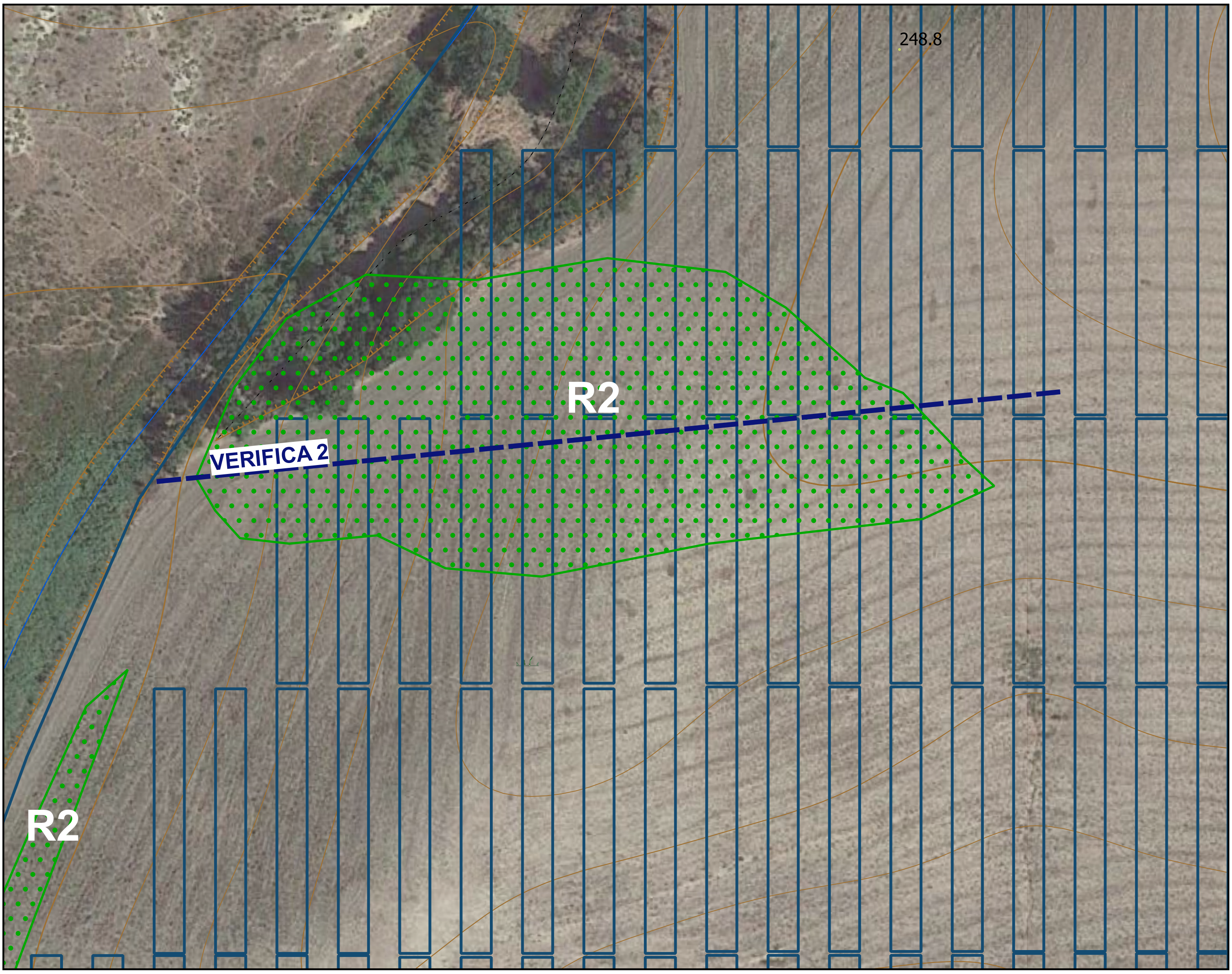


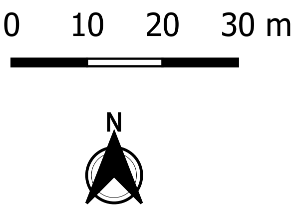

MAPPA FS LOCALE (Con algoritmo geostatistico non-parametrico- By L.B 2013-16)
FS Locale
Mappatura FS locale con Quantile 0.05
Mappa ottenuta con algoritmo con QuasiFEM algorithm (Borselli 2013,18)
Fattore di sicurezza Globale (superficie con Fs minimo): 1.6247
Metodo di calcolo: BORSELLI (2016)
Sup. FS minimo
Orientazione Prob. Plasticizzazione
Y - m
X - m
400
350
300
250
0
50
100
150
200
10
9
8
7
6
5
4
3
2
1
Credits to: GNUPLOT 5.4.1 www.gnuplot.info
SSAP2010 rel. 5.0.2 (1991,2021) by L. Borselli, www.lorenzo-borselli.eu
https://WWW.SSAP.EU

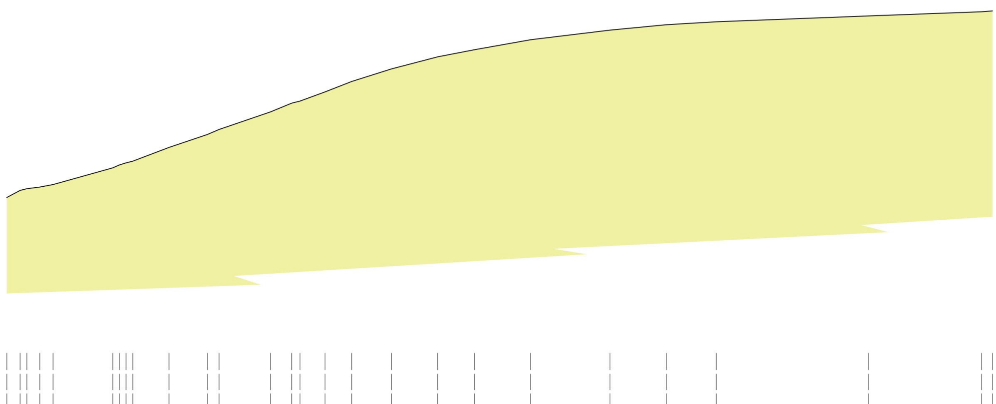
VERIFICA DI STABILITA' SEZIONE 2

CONDIZIONE DRENATA

SEZIONE DI VERIFICA N. 2







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PICCHETTO	DISTANZE PROGRESSIVE	DISTANZE PARZIALI	QUOTE
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		2	
2	2		225.19
		1	
3	3		225.45
		2	
4	5		225.68
		2	
5	7		226.09
		9	
6	16		228.58
		1	
7	17		229.02
		1	
8	18		229.36
		1	
9	19		229.59
		5.5	
10	24.5		231.65
		5.74	
11	30.24		233.63
		1.76	
12	32		234.34
		7.79	
13	39.79		237
		3.21	
14	43		238.32
		1.2	
15	44.2		238.62
		3.8	
16	48		240.01
		4	
17	52		241.62
		6	
18	58		243.5
		7	
19	65		245.31
		5.5	
20	70.5		246.41
		8.5	
21	79		247.92
		12	
22	91		249.32
		8.5	
23	99.5		250.13
		7.5	
24	107		250.62
		23	
25	130		251.48
		17	
26	147		252.09
		1.68	
27	148.68		252.26

Report elaborazioni

SSAP 5.0.2 - Slope Stability Analysis Program (1991,2021)
WWW.SSAP.EU
Build No. 11893
BY
Dr. Geol. LORENZO BORSELLI *,**
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** Gia' Ricercatore CNR-IRPI fino a Luglio 2011

Ultima Revisione struttura tabelle del report: 21 Febbraio 2021

File report: C:\SSAP2010\CRACO SERRACARUSO CAP\VERIFICA 2\DRENATA\MORG\MORG.txt
Data: 18/11/2021
Localita' :
Descrizione:
Modello pendio: DRENATA.mod

---------- PARAMETRI DEL MODELLO DEL PENDIO ----------

__ PARAMETRI GEOMETRICI - Coordinate X Y (in m) __

SUP T.		SUP 2		SUP 3		SUP 4	
X	Y	X	Y	X	Y	X	Y
0.00	224.12	-	-	-	-	-	-
2.00	225.19	-	-	-	-	-	-
3.00	225.45	-	-	-	-	-	-
5.00	225.68	-	-	-	-	-	-
7.00	226.09	-	-	-	-	-	-
16.00	228.58	-	-	-	-	-	-
17.00	229.02	-	-	-	-	-	-
18.00	229.36	-	-	-	-	-	-
19.00	229.59	-	-	-	-	-	-
24.50	231.65	-	-	-	-	-	-
30.24	233.63	-	-	-	-	-	-
32.00	234.34	-	-	-	-	-	-
39.79	237.00	-	-	-	-	-	-
43.00	238.32	-	-	-	-	-	-
44.20	238.62	-	-	-	-	-	-
48.00	240.01	-	-	-	-	-	-
52.00	241.62	-	-	-	-	-	-
58.00	243.50	-	-	-	-	-	-
65.00	245.31	-	-	-	-	-	-
70.50	246.41	-	-	-	-	-	-
79.00	247.92	-	-	-	-	-	-
91.00	249.32	-	-	-	-	-	-
99.50	250.13	-	-	-	-	-	-
107.00	250.62	-	-	-	-	-	-
130.00	251.48	-	-	-	-	-	-
147.00	252.09	-	-	-	-	-	-
148.68	252.26	-	-	-	-	-	-

ASSENZA DI FALDA

------- PARAMETRI GEOMECCANICI -------

	fi`	C`	Cu	Gamm	Gamm_sat	STR_IDX	sgci	GSI	mi	D
STRATO 1	26.00	19.50	0.00	20.00	22.00	2.279	0.00	0.00	0.00	0.00

LEGENDA: fi`_____ Angolo di attrito interno efficace(in gradi)
C` _____ Coesione efficace (in Kpa)

Cu _____ Resistenza al taglio Non drenata (in Kpa)
Gamm _____ Peso di volume terreno fuori falda (in KN/m^3)
Gamm_sat __ Peso di volume terreno immerso (in KN/m^3)
STR_IDX ___ Indice di resistenza (usato in solo in 'SNIFF SEARCH) (adimensionale)
---- SOLO Per AMMASSI ROCCIOSI FRATTURATI - Parametri Criterio di Rottura di Hoek (2002)-
sigci _____ Resistenza Compressione Uniassiale Roccia Intatta (in MPa)
GSI _____ Geological Strenght Index ammasso(adimensionale)
mi _____ Indice litologico ammasso(adimensionale)
D _____ Fattore di disturbo ammasso(adimensionale)
Fattore di riduzione NTC2018: gammaPHI=1.25 e gammaC=1.25 - DISATTIVATO (solo per ROCCE)
Uso CRITERIO DI ROTTURA Hoek et al.(2002,2006) - non-lineare - Generalizzato, secondo Lei et al.(2016)

---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
MOTORE DI RICERCA: RANDOM SEARCH - Siegel (1981)
FILTRAGGIO SUPERFICI : ATTIVATO
COORDINATE X1,X2,Y OSTACOLO : 0.00 0.00 0.00
LUNGHEZZA MEDIA SEGMENTI (m)*: 5.9 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 2.97 136.79
LIVELLO MINIMO CONSIDERATO (Ymin): 198.79
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 17.84 145.71
TOTALE SUPERFICI GENERATE : 10000
*NOTA IMPORTANTE: La lunghezza media dei segmenti non viene cosiderata nel caso
di uso del motore di recerca NEW RANOM SEARCH

---------- INFORMAZIONI PARAMETRI DI CALCOLO ----------
METODO DI CALCOLO : MORGENSTERN - PRICE (Morgenstern & Price, 1965)
METODO DI ESPLORAZIONE CAMPO VALORI (lambda0,Fs0) ADOTTATO : A (rapido)
COEFFICIENTE SISMICO UTILIZZATO Kh : 0.0350
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0175
COEFFICIENTE c=Kv/Kh UTILIZZATO : 0.5000
FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00

N.B. Le forze orizzontali addizionali in testa e alla base sono poste uguali a 0
durante le tutte le verifiche globali.
I valori >0 impostati dall'utente sono utilizzati solo in caso di verifica singola

---------- RISULTATO FINALE ELABORAZIONI ----------
---
* DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *

Fattore di sicurezza (FS) 1.8946 - Min. - X Y Lambda= 0.3735
9.87 226.88
13.95 224.63
15.81 223.66
17.02 223.11
17.99 222.77
18.98 222.54
19.83 222.42
20.80 222.38
21.86 222.42
23.22 222.53
24.41 222.66
25.51 222.80
26.55 222.95
27.61 223.14
28.62 223.34
29.66 223.57
30.73 223.83
31.86 224.13
32.97 224.43
34.06 224.72
35.15 225.00
36.22 225.28

37.30 225.57
38.39 225.85
39.49 226.14
40.60 226.43
41.67 226.72
42.72 227.02
43.76 227.34
44.82 227.68
45.87 228.04
46.94 228.41
48.04 228.82
49.20 229.27
50.29 229.71
51.34 230.16
52.36 230.63
53.42 231.14
54.44 231.66
55.49 232.22
56.56 232.82
57.71 233.49
58.81 234.14
59.89 234.79
60.96 235.45
62.03 236.11
63.09 236.78
64.17 237.46
65.25 238.16
66.36 238.89
67.44 239.61
68.51 240.34
69.57 241.07
70.63 241.82
71.82 242.68
73.15 243.67
74.23 244.48
74.23 247.07

Fattore di sicurezza (FS) 1.8955 - N.2 -- X Y Lambda= 0.3662
5.32 225.75
8.60 223.82
10.13 222.97
11.13 222.48
11.94 222.15
12.76 221.91
13.48 221.76
14.28 221.66
15.17 221.61
16.29 221.61
17.24 221.63
18.11 221.68
18.94 221.75
19.79 221.87
20.59 222.00
21.43 222.17
22.29 222.37
23.25 222.62
24.17 222.87
25.06 223.11
25.95 223.35
26.82 223.60
27.69 223.84
28.56 224.10
29.44 224.35
30.32 224.62
31.20 224.88

32.08 225.14
32.97 225.41
33.84 225.67
34.72 225.93
35.60 226.19
36.49 226.46
37.37 226.72
38.25 226.99
39.12 227.26
39.99 227.53
40.86 227.81
41.73 228.10
42.61 228.39
43.49 228.69
44.40 229.01
45.28 229.32
46.15 229.63
47.01 229.96
47.88 230.29
48.74 230.63
49.61 230.99
50.50 231.35
51.41 231.74
52.29 232.12
53.16 232.51
54.03 232.90
54.90 233.30
55.77 233.71
56.66 234.14
57.57 234.58
58.53 235.06
59.40 235.53
60.24 236.01
61.06 236.51
61.91 237.07
62.73 237.65
63.57 238.28
64.45 238.97
65.41 239.76
66.32 240.50
67.20 241.20
68.07 241.88
68.94 242.55
69.91 243.27
70.46 243.68
70.46 246.40

Fattore di sicurezza (FS) 1.8980 - N.3 -- X Y Lambda= 0.3721
9.30 226.73
13.22 224.63
15.02 223.72
16.19 223.21
17.14 222.88
18.11 222.65
18.95 222.53
19.89 222.47
20.94 222.49
22.26 222.57
23.39 222.67
24.44 222.79
25.43 222.94
26.44 223.12
27.41 223.33
28.41 223.58
29.44 223.86

30.58 224.20
31.66 224.52
32.71 224.81
33.74 225.10
34.77 225.37
35.79 225.63
36.83 225.88
37.89 226.13
39.00 226.38
40.04 226.63
41.06 226.90
42.06 227.18
43.08 227.49
44.08 227.81
45.10 228.16
46.14 228.54
47.26 228.96
48.32 229.37
49.35 229.79
50.37 230.22
51.40 230.66
52.42 231.11
53.45 231.59
54.51 232.09
55.62 232.63
56.66 233.15
57.69 233.69
58.69 234.24
59.71 234.83
60.71 235.43
61.74 236.06
62.80 236.74
63.94 237.49
64.99 238.21
66.01 238.94
67.00 239.68
68.03 240.48
69.14 241.40
70.41 242.48
72.08 243.97
72.08 246.69

Fattore di sicurezza (FS) 1.9026 - N.4 -- X Y Lambda= 0.3635
4.50 225.62
10.10 222.87
12.64 221.70
14.29 221.06
15.59 220.69
16.94 220.46
18.10 220.37
19.40 220.41
20.83 220.55
22.66 220.84
24.30 221.11
25.83 221.38
27.29 221.67
28.74 221.97
30.18 222.29
31.64 222.63
33.13 223.00
34.70 223.41
36.18 223.82
37.63 224.24
39.05 224.68
40.50 225.16

41.93 225.65
43.39 226.17
44.89 226.73
46.49 227.36
47.97 227.97
49.41 228.60
50.81 229.25
52.26 229.95
53.67 230.67
55.13 231.45
56.65 232.31
58.30 233.27
59.79 234.19
61.21 235.14
62.58 236.11
64.01 237.20
65.54 238.46
67.31 240.00
69.87 242.35
71.60 243.98
71.60 246.61

Fattore di sicurezza (FS) 1.9038 - N.5 -- X Y Lambda= 0.3678
8.38 226.47
14.26 223.27
16.84 221.95
18.45 221.28
19.65 220.94
20.97 220.78
22.03 220.80
23.28 220.99
24.70 221.34
26.61 221.93
28.34 222.47
29.94 222.98
31.48 223.47
32.97 223.95
34.46 224.44
35.96 224.93
37.48 225.43
39.03 225.95
40.51 226.47
41.97 227.01
43.41 227.56
44.88 228.15
46.32 228.75
47.80 229.39
49.30 230.07
50.89 230.82
52.40 231.55
53.88 232.29
55.33 233.04
56.80 233.82
58.24 234.62
59.71 235.46
61.19 236.33
62.73 237.27
64.25 238.19
65.75 239.11
67.24 240.03
68.73 240.95
70.40 241.99
72.25 243.16
73.93 244.22
73.93 247.02

Fattore di sicurezza (FS) 1.9065 - N.6 -- X Y Lambda= 0.3700

8.69	226.56
13.63	223.74
15.87	222.54
17.30	221.88
18.42	221.49
19.59	221.24
20.59	221.13
21.73	221.13
23.02	221.24
24.71	221.47
26.14	221.70
27.45	221.95
28.68	222.23
29.93	222.55
31.13	222.90
32.36	223.30
33.64	223.76
35.03	224.29
36.37	224.81
37.68	225.32
38.98	225.83
40.26	226.33
41.55	226.85
42.85	227.38
44.17	227.92
45.52	228.48
46.80	229.03
48.06	229.61
49.29	230.19
50.56	230.83
51.79	231.47
53.05	232.16
54.34	232.88
55.69	233.68
57.01	234.44
58.31	235.19
59.59	235.91
60.87	236.63
62.15	237.34
63.44	238.05
64.74	238.75
66.06	239.46
67.35	240.16
68.63	240.87
69.90	241.58
71.18	242.32
72.61	243.15
74.21	244.10
74.77	244.44
74.77	247.17

Fattore di sicurezza (FS) 1.9068 - N.7 -- X Y Lambda= 0.3638

4.47	225.62
11.40	223.56
14.60	222.69
16.70	222.26
18.40	222.03
20.13	221.98
21.66	222.04
23.34	222.25
25.16	222.58
27.40	223.10

29.42 223.59
31.32 224.09
33.15 224.59
34.97 225.12
36.77 225.67
38.61 226.26
40.49 226.90
42.48 227.59
44.35 228.28
46.17 228.99
47.95 229.72
49.76 230.51
51.55 231.32
53.37 232.19
55.25 233.12
57.26 234.15
59.13 235.16
60.96 236.18
62.74 237.22
64.56 238.33
66.55 239.60
68.81 241.10
72.04 243.33
73.19 244.13
73.19 246.89

Fattore di sicurezza (FS) 1.9068 - N.8 -- X Y Lambda= 0.3690
8.32 226.46
14.29 223.78
16.96 222.67
18.65 222.10
19.95 221.81
21.34 221.70
22.50 221.73
23.83 221.92
25.31 222.26
27.24 222.81
28.99 223.31
30.62 223.76
32.20 224.20
33.74 224.61
35.28 225.02
36.84 225.42
38.42 225.83
40.06 226.24
41.59 226.66
43.08 227.11
44.54 227.58
46.05 228.11
47.52 228.66
49.03 229.26
50.59 229.92
52.29 230.68
53.86 231.42
55.38 232.16
56.86 232.92
58.38 233.74
59.85 234.58
61.35 235.46
62.88 236.40
64.50 237.43
66.08 238.43
67.63 239.40
69.18 240.37
70.71 241.31

72.44 242.37
74.35 243.54
76.08 244.58
76.08 247.40

Fattore di sicurezza (FS) 1.9076 - N.9 -- X Y Lambda= 0.3688
8.42 226.48
12.61 224.33
14.51 223.42
15.72 222.93
16.68 222.65
17.68 222.48
18.52 222.42
19.48 222.46
20.53 222.58
21.88 222.82
23.11 223.04
24.27 223.25
25.39 223.46
26.48 223.67
27.58 223.89
28.69 224.11
29.82 224.34
30.99 224.58
32.07 224.83
33.13 225.10
34.16 225.39
35.23 225.73
36.26 226.08
37.31 226.47
38.39 226.90
39.56 227.38
40.69 227.86
41.80 228.32
42.91 228.77
44.00 229.22
45.09 229.67
46.19 230.11
47.29 230.56
48.40 231.00
49.50 231.43
50.58 231.85
51.67 232.26
52.76 232.67
53.85 233.07
54.95 233.47
56.08 233.87
57.25 234.28
58.34 234.68
59.40 235.11
60.43 235.55
61.50 236.04
62.55 236.55
63.62 237.10
64.74 237.71
65.96 238.40
67.08 239.07
68.15 239.74
69.19 240.43
70.26 241.18
71.43 242.05
72.75 243.09
74.40 244.43
74.40 247.10

Fattore di sicurezza (FS) 1.9086 - N.10 -- X Y Lambda= 0.3758

10.79	227.14
14.58	224.98
16.27	224.07
17.34	223.59
18.16	223.32
19.03	223.16
19.75	223.12
20.59	223.17
21.53	223.32
22.79	223.59
23.90	223.82
24.92	224.02
25.90	224.20
26.87	224.36
27.82	224.51
28.80	224.65
29.80	224.78
30.86	224.91
31.84	225.05
32.78	225.20
33.70	225.38
34.65	225.60
35.57	225.82
36.52	226.09
37.50	226.38
38.57	226.73
39.57	227.07
40.54	227.41
41.49	227.76
42.45	228.14
43.40	228.52
44.35	228.93
45.33	229.36
46.36	229.83
47.35	230.28
48.33	230.70
49.29	231.11
50.25	231.51
51.22	231.91
52.21	232.30
53.23	232.69
54.33	233.10
55.29	233.50
56.21	233.92
57.09	234.38
58.03	234.91
58.91	235.46
59.84	236.09
60.80	236.79
61.88	237.61
62.91	238.41
63.90	239.19
64.87	239.96
65.84	240.74
66.92	241.63
68.13	242.64
69.13	243.48
69.13	246.14

---------- ANALISI DEFICIT DI RESISTENZA ----------
DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *
Analisi Deficit in riferimento a FS(progetto) = 1.100

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	1.895	6679.3	3525.5	2801.2	Surplus
2	1.896	6278.5	3312.2	2635.0	Surplus
3	1.898	6419.0	3382.0	2698.8	Surplus
4	1.903	7555.2	3971.1	3187.0	Surplus
5	1.904	6880.9	3614.3	2905.1	Surplus
6	1.906	6854.2	3595.2	2899.4	Surplus
7	1.907	6665.0	3495.5	2820.0	Surplus
8	1.907	6999.2	3670.7	2961.4	Surplus
9	1.908	6301.7	3303.4	2668.0	Surplus
10	1.909	5617.3	2943.1	2379.9	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 2379.9

Note: FTR --> Forza totale Resistente lungo la superficie
di scivolamento
FTA --> Forza totale Agente lungo la superficie
di scivolamento

IMPORTANTE! : Il Deficit o il Surplus di resistenza viene espresso in kN
per metro di LARGHEZZA rispetto al fronte della scarpata

TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (°)	W (kN/m)	ru (-)	U (kPa)	phi' (°)	(c',Cu) (kPa)
9.873	0.541	-28.95	2.47	0.00	0.00	26.00	19.50
10.414	0.541	-28.95	7.41	0.00	0.00	26.00	19.50
10.955	0.541	-28.95	12.36	0.00	0.00	26.00	19.50
11.496	0.541	-28.95	17.30	0.00	0.00	26.00	19.50
12.037	0.541	-28.95	22.24	0.00	0.00	26.00	19.50
12.578	0.541	-28.95	27.18	0.00	0.00	26.00	19.50
13.119	0.541	-28.95	32.13	0.00	0.00	26.00	19.50
13.660	0.287	-28.95	19.05	0.00	0.00	26.00	19.50
13.947	0.541	-27.56	39.60	0.00	0.00	26.00	19.50
14.488	0.541	-27.56	44.35	0.00	0.00	26.00	19.50
15.029	0.541	-27.56	49.11	0.00	0.00	26.00	19.50
15.570	0.241	-27.56	23.44	0.00	0.00	26.00	19.50
15.811	0.189	-24.19	18.98	0.00	0.00	26.00	19.50
16.000	0.541	-24.19	57.77	0.00	0.00	26.00	19.50
16.541	0.459	-24.19	53.17	0.00	0.00	26.00	19.50
17.000	0.021	-24.19	2.52	0.00	0.00	26.00	19.50
17.021	0.541	-19.45	67.16	0.00	0.00	26.00	19.50
17.562	0.424	-19.45	55.56	0.00	0.00	26.00	19.50
17.986	0.014	-13.15	1.84	0.00	0.00	26.00	19.50
18.000	0.541	-13.15	73.93	0.00	0.00	26.00	19.50
18.541	0.438	-13.15	61.81	0.00	0.00	26.00	19.50
18.979	0.021	-7.93	3.08	0.00	0.00	26.00	19.50
19.000	0.541	-7.93	79.16	0.00	0.00	26.00	19.50
19.541	0.293	-7.93	44.17	0.00	0.00	26.00	19.50
19.834	0.541	-2.48	83.59	0.00	0.00	26.00	19.50
20.375	0.422	-2.48	66.97	0.00	0.00	26.00	19.50
20.797	0.541	1.90	87.80	0.00	0.00	26.00	19.50
21.338	0.523	1.90	86.81	0.00	0.00	26.00	19.50
21.861	0.541	4.91	91.64	0.00	0.00	26.00	19.50
22.402	0.541	4.91	93.36	0.00	0.00	26.00	19.50
22.943	0.280	4.91	48.97	0.00	0.00	26.00	19.50
23.223	0.541	5.94	95.91	0.00	0.00	26.00	19.50
23.764	0.541	5.94	97.52	0.00	0.00	26.00	19.50
24.305	0.105	5.94	19.17	0.00	0.00	26.00	19.50
24.411	0.089	7.20	16.33	0.00	0.00	26.00	19.50
24.500	0.541	7.20	99.54	0.00	0.00	26.00	19.50

25.041	0.469	7.20	87.27	0.00	0.00	26.00	19.50
25.510	0.541	8.55	101.90	0.00	0.00	26.00	19.50
26.051	0.502	8.55	95.66	0.00	0.00	26.00	19.50
26.553	0.541	9.96	104.06	0.00	0.00	26.00	19.50
27.094	0.513	9.96	99.54	0.00	0.00	26.00	19.50
27.607	0.541	11.26	105.95	0.00	0.00	26.00	19.50
28.148	0.475	11.26	93.82	0.00	0.00	26.00	19.50
28.623	0.541	12.56	107.51	0.00	0.00	26.00	19.50
29.164	0.499	12.56	99.88	0.00	0.00	26.00	19.50
29.663	0.541	13.77	108.85	0.00	0.00	26.00	19.50
30.204	0.036	13.77	7.18	0.00	0.00	26.00	19.50
30.240	0.485	13.77	98.32	0.00	0.00	26.00	19.50
30.725	0.541	14.86	110.44	0.00	0.00	26.00	19.50
31.266	0.541	14.86	111.26	0.00	0.00	26.00	19.50
31.807	0.050	14.86	10.33	0.00	0.00	26.00	19.50
31.857	0.143	14.83	29.50	0.00	0.00	26.00	19.50
32.000	0.541	14.83	112.20	0.00	0.00	26.00	19.50
32.541	0.429	14.83	89.20	0.00	0.00	26.00	19.50
32.970	0.541	14.79	113.02	0.00	0.00	26.00	19.50
33.511	0.541	14.79	113.48	0.00	0.00	26.00	19.50
34.052	0.010	14.79	2.17	0.00	0.00	26.00	19.50
34.062	0.541	14.76	113.95	0.00	0.00	26.00	19.50
34.603	0.541	14.76	114.41	0.00	0.00	26.00	19.50
35.144	0.004	14.76	0.95	0.00	0.00	26.00	19.50
35.148	0.541	14.72	114.88	0.00	0.00	26.00	19.50
35.689	0.531	14.72	113.30	0.00	0.00	26.00	19.50
36.221	0.541	14.68	115.82	0.00	0.00	26.00	19.50
36.762	0.541	14.68	116.29	0.00	0.00	26.00	19.50
37.303	0.001	14.68	0.27	0.00	0.00	26.00	19.50
37.304	0.541	14.65	116.77	0.00	0.00	26.00	19.50
37.845	0.541	14.65	117.24	0.00	0.00	26.00	19.50
38.386	0.004	14.65	0.84	0.00	0.00	26.00	19.50
38.390	0.541	14.61	117.73	0.00	0.00	26.00	19.50
38.931	0.541	14.61	118.21	0.00	0.00	26.00	19.50
39.472	0.017	14.61	3.81	0.00	0.00	26.00	19.50
39.489	0.301	14.57	65.89	0.00	0.00	26.00	19.50
39.790	0.541	14.57	119.18	0.00	0.00	26.00	19.50
40.331	0.269	14.57	59.49	0.00	0.00	26.00	19.50
40.600	0.541	15.35	120.49	0.00	0.00	26.00	19.50
41.141	0.526	15.35	117.82	0.00	0.00	26.00	19.50
41.666	0.541	16.16	122.05	0.00	0.00	26.00	19.50
42.207	0.512	16.16	116.14	0.00	0.00	26.00	19.50
42.719	0.281	17.00	64.04	0.00	0.00	26.00	19.50
43.000	0.541	17.00	123.25	0.00	0.00	26.00	19.50
43.541	0.217	17.00	49.28	0.00	0.00	26.00	19.50
43.758	0.442	17.82	100.37	0.00	0.00	26.00	19.50
44.200	0.541	17.82	122.74	0.00	0.00	26.00	19.50
44.741	0.078	17.82	17.63	0.00	0.00	26.00	19.50
44.819	0.541	18.65	122.99	0.00	0.00	26.00	19.50
45.360	0.506	18.65	115.22	0.00	0.00	26.00	19.50
45.866	0.541	19.47	123.27	0.00	0.00	26.00	19.50
46.407	0.528	19.47	120.45	0.00	0.00	26.00	19.50
46.935	0.541	20.25	123.37	0.00	0.00	26.00	19.50
47.476	0.524	20.25	119.46	0.00	0.00	26.00	19.50
48.000	0.035	20.25	8.08	0.00	0.00	26.00	19.50
48.035	0.541	20.95	123.42	0.00	0.00	26.00	19.50
48.576	0.541	20.95	123.53	0.00	0.00	26.00	19.50
49.117	0.087	20.95	19.78	0.00	0.00	26.00	19.50
49.204	0.541	22.06	123.60	0.00	0.00	26.00	19.50
49.745	0.541	22.06	123.58	0.00	0.00	26.00	19.50
50.286	0.001	22.06	0.22	0.00	0.00	26.00	19.50
50.287	0.541	23.28	123.49	0.00	0.00	26.00	19.50
50.828	0.511	23.28	116.60	0.00	0.00	26.00	19.50
51.339	0.541	24.55	123.09	0.00	0.00	26.00	19.50
51.880	0.120	24.55	27.15	0.00	0.00	26.00	19.50
52.000	0.364	24.55	82.41	0.00	0.00	26.00	19.50

52.364	0.541	25.79	121.78	0.00	0.00	26.00	19.50
52.905	0.514	25.79	114.70	0.00	0.00	26.00	19.50
53.418	0.541	27.00	119.73	0.00	0.00	26.00	19.50
53.959	0.482	27.00	105.78	0.00	0.00	26.00	19.50
54.442	0.541	28.18	117.44	0.00	0.00	26.00	19.50
54.983	0.507	28.18	108.82	0.00	0.00	26.00	19.50
55.490	0.541	29.28	114.80	0.00	0.00	26.00	19.50
56.031	0.532	29.28	111.51	0.00	0.00	26.00	19.50
56.563	0.541	30.26	111.81	0.00	0.00	26.00	19.50
57.104	0.541	30.26	110.20	0.00	0.00	26.00	19.50
57.645	0.063	30.26	12.66	0.00	0.00	26.00	19.50
57.708	0.292	30.63	58.75	0.00	0.00	26.00	19.50
58.000	0.541	30.63	107.32	0.00	0.00	26.00	19.50
58.541	0.272	30.63	53.11	0.00	0.00	26.00	19.50
58.813	0.541	31.01	104.31	0.00	0.00	26.00	19.50
59.354	0.540	31.01	102.15	0.00	0.00	26.00	19.50
59.894	0.541	31.39	100.20	0.00	0.00	26.00	19.50
60.435	0.528	31.39	95.71	0.00	0.00	26.00	19.50
60.963	0.541	31.78	96.04	0.00	0.00	26.00	19.50
61.504	0.527	31.78	91.40	0.00	0.00	26.00	19.50
62.030	0.541	32.15	91.77	0.00	0.00	26.00	19.50
62.571	0.523	32.15	86.65	0.00	0.00	26.00	19.50
63.094	0.541	32.53	87.41	0.00	0.00	26.00	19.50
63.635	0.531	32.53	83.59	0.00	0.00	26.00	19.50
64.166	0.541	32.89	82.91	0.00	0.00	26.00	19.50
64.707	0.293	32.89	43.90	0.00	0.00	26.00	19.50
65.000	0.252	32.89	37.25	0.00	0.00	26.00	19.50
65.252	0.541	33.24	77.90	0.00	0.00	26.00	19.50
65.793	0.541	33.24	75.19	0.00	0.00	26.00	19.50
66.334	0.030	33.24	4.04	0.00	0.00	26.00	19.50
66.364	0.541	33.73	72.29	0.00	0.00	26.00	19.50
66.905	0.539	33.73	69.28	0.00	0.00	26.00	19.50
67.444	0.541	34.24	66.69	0.00	0.00	26.00	19.50
67.985	0.525	34.24	62.03	0.00	0.00	26.00	19.50
68.511	0.541	34.76	61.01	0.00	0.00	26.00	19.50
69.052	0.516	34.76	55.42	0.00	0.00	26.00	19.50
69.567	0.541	35.26	55.22	0.00	0.00	26.00	19.50
70.108	0.392	35.26	38.10	0.00	0.00	26.00	19.50
70.500	0.134	35.26	12.62	0.00	0.00	26.00	19.50
70.634	0.541	35.92	49.12	0.00	0.00	26.00	19.50
71.175	0.541	35.92	45.86	0.00	0.00	26.00	19.50
71.716	0.104	35.92	8.43	0.00	0.00	26.00	19.50
71.819	0.541	36.45	41.94	0.00	0.00	26.00	19.50
72.360	0.541	36.45	38.60	0.00	0.00	26.00	19.50
72.901	0.247	36.45	16.53	0.00	0.00	26.00	19.50
73.149	0.541	36.93	33.69	0.00	0.00	26.00	19.50
73.690	0.541	36.93	30.27	0.00	0.00	26.00	19.50

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
alpha(°) : Angolo pendenza base concio
W(kN/m) : Forza peso concio
ru(-) : Coefficiente locale pressione interstiziale
U(kPa) : Pressione totale dei pori base concio
phi'(°) : Angolo di attrito efficace base concio
c'/Cu (kPa) : Coesione efficace o Resistenza al taglio in condizioni non drenate

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TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X	ht	yt	yt'	E(x)	T(x)	E'	rho(x)	FS_qFEM	FS_srmFEM
(m)	(m)	(m)	(--)	(kN/m)	(kN/m)	(kN)	(--)	(--)	(--)
9.873	0.000	226.885	-0.343	0.0000000000E+000	0.0000000000E+000	8.3384446698E-001	0.063	9.600	8.648

10.414	0.113	226.698	-0.343	1.1542948050E+000	2.5789702968E-003	3.4333699543E+000	0.063	9.600	8.648
10.955	0.228	226.514	-0.334	3.7149491078E+000	4.6022678873E-002	7.8997828996E+000	0.063	6.612	6.020
11.496	0.350	226.337	-0.332	9.7019584200E+000	4.0196813829E-001	1.5331567884E+001	0.063	7.497	6.650
12.037	0.467	226.155	-0.317	2.0303896758E+001	2.2389914248E+000	2.5568589821E+001	0.094	10.479	6.329
12.578	0.605	225.993	-0.297	3.7367491470E+001	5.7096556310E+000	4.5624257433E+001	0.174	14.096	5.489
13.119	0.744	225.833	-0.287	6.9669912277E+001	1.2005864735E+001	7.0615447202E+001	0.263	16.284	4.749
13.660	0.893	225.683	-0.265	1.1377428598E+002	2.0658853183E+001	7.9377344165E+001	0.335	15.269	4.266
13.947	0.983	225.614	-0.240	1.3623192840E+002	2.5076551425E+001	7.9793030785E+001	0.359	14.472	4.111
14.488	1.136	225.485	-0.221	1.8098505832E+002	3.3959407611E+001	8.4279332313E+001	0.396	12.626	3.880
15.029	1.308	225.374	-0.192	2.2742321700E+002	4.3338997984E+001	8.9748015246E+001	0.424	10.785	3.705
15.570	1.494	225.278	-0.170	2.7809353006E+002	5.3930744551E+001	9.2346671244E+001	0.450	8.918	3.564
15.811	1.583	225.241	-0.147	3.0023897503E+002	5.8669227776E+001	9.2976343776E+001	0.460	8.218	3.513
16.000	1.641	225.214	-0.125	3.1797650627E+002	6.2533912351E+001	9.3361136751E+001	0.469	7.712	3.476
16.541	1.820	225.150	-0.107	3.6760801679E+002	7.3588385761E+001	9.0387569783E+001	0.487	6.496	3.389
17.000	1.983	225.107	-0.093	4.0856898178E+002	8.3041870364E+001	9.2633075028E+001	0.501	5.694	3.328
17.021	1.991	225.105	-0.068	4.1051186855E+002	8.3501550097E+001	9.2535854354E+001	0.501	5.660	3.325
17.562	2.145	225.069	-0.056	4.5705221387E+002	9.4803596157E+001	8.1940316131E+001	0.520	4.910	3.262
17.986	2.278	225.051	-0.041	4.9046197128E+002	1.0339647298E+002	7.6682395253E+001	0.533	4.455	3.217
18.000	2.280	225.051	-0.015	4.9151386108E+002	1.0368326771E+002	7.6591056312E+001	0.533	4.442	3.216
18.541	2.399	225.043	-0.005	5.3241954846E+002	1.1506610847E+002	7.5374810313E+001	0.555	3.981	3.155
18.979	2.504	225.046	0.008	5.6531563479E+002	1.2481683355E+002	6.6985782934E+001	0.572	3.664	3.101
19.000	2.508	225.047	0.046	5.6674415086E+002	1.2525698224E+002	6.6940218542E+001	0.573	3.651	3.098
19.541	2.609	225.072	0.055	6.0782193741E+002	1.3870934634E+002	7.3156681620E+001	0.598	3.325	3.019
19.834	2.670	225.093	0.091	6.2882594017E+002	1.4605037549E+002	6.9901994237E+001	0.611	3.177	2.974
20.375	2.749	225.148	0.128	6.6489311460E+002	1.5982968844E+002	7.0266952944E+001	0.638	2.949	2.888
20.797	2.835	225.216	0.178	6.9574807979E+002	1.7260522481E+002	6.9994214745E+001	0.663	2.785	2.808
21.338	2.921	225.320	0.204	7.3147863922E+002	1.8857885291E+002	6.3912754335E+001	0.695	2.622	2.710
21.861	3.017	225.433	0.217	7.6382714527E+002	2.0378820991E+002	5.6003569395E+001	0.724	2.495	2.622
22.402	3.088	225.551	0.221	7.9085255011E+002	2.1725500757E+002	4.7330497359E+001	0.749	2.402	2.547
22.943	3.163	225.672	0.214	8.1503933367E+002	2.2957444781E+002	3.7610133969E+001	0.771	2.329	2.483
23.223	3.193	225.727	0.203	8.2453755828E+002	2.3450657520E+002	3.3657748800E+001	0.779	2.302	2.458
23.764	3.249	225.839	0.201	8.4245256432E+002	2.4379094229E+002	3.0459092900E+001	0.793	2.256	2.413
24.305	3.299	225.944	0.195	8.5749467665E+002	2.5157939329E+002	2.5518892265E+001	0.805	2.221	2.377
24.411	3.308	225.965	0.193	8.6013513191E+002	2.5294654334E+002	2.4917628325E+001	0.806	2.215	2.370
24.500	3.314	225.982	0.201	8.6235170890E+002	2.5409462845E+002	2.4741856207E+001	0.808	2.209	2.365
25.041	3.355	226.091	0.209	8.7559687943E+002	2.6097453564E+002	2.4226039493E+001	0.818	2.180	2.334
25.510	3.397	226.193	0.226	8.8684469831E+002	2.6689740369E+002	2.3850229864E+001	0.826	2.156	2.309
26.051	3.443	226.320	0.251	8.9965181378E+002	2.7382474370E+002	2.3885450754E+001	0.836	2.128	2.279
26.553	3.502	226.455	0.288	9.1175122529E+002	2.8064889552E+002	2.4128378630E+001	0.847	2.100	2.249
27.094	3.573	226.620	0.305	9.2483128939E+002	2.8840091076E+002	2.2603610135E+001	0.859	2.068	2.215
27.607	3.638	226.776	0.320	9.3565505851E+002	2.9517591633E+002	2.0561386517E+001	0.869	2.039	2.184
28.148	3.712	226.957	0.335	9.4646435506E+002	3.0234311493E+002	1.7770728108E+001	0.881	2.009	2.152
28.623	3.776	227.116	0.322	9.5398950031E+002	3.0779763732E+002	1.3939398065E+001	0.890	1.985	2.126
29.164	3.824	227.284	0.299	9.6036715180E+002	3.1283655773E+002	1.0337996827E+001	0.899	1.963	2.102
29.663	3.856	227.427	0.280	9.6486086029E+002	3.1665615339E+002	8.0104817353E+000	0.905	1.945	2.083
30.204	3.872	227.576	0.276	9.6861505637E+002	3.2014122307E+002	6.2057287750E+000	0.911	1.929	2.065
30.240	3.874	227.586	0.289	9.6883404324E+002	3.2036507475E+002	6.0932535902E+000	0.911	1.928	2.064
30.725	3.894	227.726	0.284	9.7136565165E+002	3.2308961943E+002	4.6528638959E+000	0.915	1.915	2.049
31.266	3.903	227.878	0.287	9.7354298883E+002	3.2573940854E+002	3.5971353020E+000	0.919	1.902	2.034
31.807	3.918	228.037	0.293	9.7525779691E+002	3.2816732584E+002	2.8367753015E+000	0.923	1.891	2.020
31.857	3.919	228.052	0.295	9.7539815285E+002	3.2838105087E+002	2.7928777614E+000	0.924	1.890	2.019
32.000	3.924	228.094	0.287	9.7579123229E+002	3.2898442157E+002	2.6537384168E+000	0.924	1.887	2.015
32.541	3.935	228.248	0.283	9.7701821386E+002	3.3106408688E+002	2.0588008737E+000	0.928	1.878	2.002
32.970	3.942	228.368	0.290	9.7782955374E+002	3.3259231846E+002	1.8678118200E+000	0.931	1.872	1.993
33.511	3.960	228.529	0.309	9.7882277667E+002	3.3456575750E+002	1.8452021931E+000	0.935	1.864	1.979
34.052	3.991	228.703	0.321	9.7982608552E+002	3.3662068041E+002	1.9535243229E+000	0.939	1.856	1.965
34.062	3.991	228.706	0.305	9.7984625438E+002	3.3666177710E+002	1.9507407901E+000	0.939	1.856	1.964
34.603	4.013	228.871	0.313	9.8076906992E+002	3.3855134014E+002	1.7677972727E+000	0.942	1.849	1.950
35.144	4.045	229.045	0.322	9.8175903307E+002	3.4052182898E+002	1.9560585403E+000	0.946	1.841	1.935
35.148	4.045	229.046	0.334	9.8176782444E+002	3.4053916453E+002	1.9569647591E+000	0.946	1.841	1.935
35.689	4.084	229.227	0.332	9.8281732456E+002	3.4257475395E+002	1.9535969400E+000	0.950	1.834	1.919
36.221	4.120	229.403	0.324	9.8386260098E+002	3.4452963565E+002	1.9429513010E+000	0.953	1.828	1.903
36.762	4.149	229.574	0.312	9.8490047821E+002	3.4642994412E+002	1.8972721171E+000	0.957	1.822	1.888
37.303	4.174	229.740	0.307	9.8591547307E+002	3.4825563917E+002	1.9212369679E+000	0.960	1.816	1.874
37.304	4.174	229.741	0.303	9.8591790709E+002	3.4826004655E+002	1.9211086775E+000	0.960	1.816	1.874
37.845	4.196	229.905	0.291	9.8690319245E+002	3.5004004705E+002	1.7090586879E+000	0.963	1.810	1.860

38.386	4.206	230.056	0.280	9.8776712991E+002	3.5165413604E+002	1.5149013921E+000	0.966	1.805	1.848
38.390	4.206	230.057	0.279	9.8777301138E+002	3.5166586128E+002	1.5134555387E+000	0.966	1.805	1.847
38.931	4.216	230.208	0.278	9.8852720890E+002	3.5322257995E+002	1.1848156897E+000	0.968	1.799	1.835
39.472	4.226	230.358	0.278	9.8905499674E+002	3.5468064370E+002	8.1523516337E-001	0.971	1.793	1.822
39.489	4.226	230.363	0.274	9.8906910094E+002	3.5472523705E+002	7.9615731514E-001	0.971	1.793	1.822
39.790	4.230	230.445	0.298	9.8923618981E+002	3.5547199377E+002	3.5833714037E-001	0.972	1.789	1.815
40.331	4.257	230.614	0.319	9.8923770656E+002	3.5685891619E+002	-4.1473141012E-001	0.974	1.779	1.800
40.600	4.278	230.704	0.352	9.8907067932E+002	3.5753359176E+002	-9.1524868991E-001	0.975	1.774	1.792
41.141	4.324	230.898	0.362	9.8825588741E+002	3.5879648840E+002	-2.1537820277E+000	0.976	1.761	1.775
41.666	4.371	231.089	0.367	9.8679337537E+002	3.5972873938E+002	-3.3702117080E+000	0.978	1.748	1.759
42.207	4.415	231.290	0.358	9.8464300329E+002	3.6041010932E+002	-4.5291770184E+000	0.980	1.734	1.742
42.719	4.443	231.467	0.341	9.8205629141E+002	3.6065913852E+002	-5.5035031239E+000	0.980	1.721	1.727
43.000	4.450	231.560	0.334	9.8043997868E+002	3.6065838753E+002	-6.1780114761E+000	0.981	1.715	1.719
43.541	4.466	231.741	0.327	9.7665246289E+002	3.6029189533E+002	-7.6862895574E+000	0.983	1.701	1.705
43.758	4.466	231.808	0.299	9.7492710625E+002	3.5996806826E+002	-8.2285906791E+000	0.984	1.697	1.700
44.200	4.455	231.938	0.314	9.7104627971E+002	3.5908031320E+002	-9.7555335220E+000	0.985	1.687	1.691
44.741	4.460	232.117	0.330	9.6511950243E+002	3.5738379922E+002	-1.1941134260E+001	0.984	1.676	1.679
44.819	4.460	232.142	0.332	9.6418185550E+002	3.5709285445E+002	-1.2181362383E+001	0.983	1.674	1.677
45.360	4.457	232.322	0.351	9.5721907096E+002	3.5483347207E+002	-1.4285742172E+001	0.982	1.663	1.666
45.866	4.474	232.509	0.367	9.4931812101E+002	3.5209832012E+002	-1.6386034988E+001	0.979	1.651	1.654
46.407	4.480	232.707	0.362	9.4000452121E+002	3.4877077062E+002	-1.8796959621E+001	0.976	1.639	1.642
46.935	4.483	232.896	0.363	9.2925822014E+002	3.4484244913E+002	-2.0427025112E+001	0.973	1.627	1.629
47.476	4.482	233.095	0.368	9.1815965244E+002	3.4073878951E+002	-2.0159778791E+001	0.969	1.615	1.617
48.000	4.481	233.288	0.369	9.0777731452E+002	3.3687626811E+002	-2.1406131743E+001	0.965	1.605	1.606
48.035	4.482	233.301	0.390	9.0701476683E+002	3.3659180301E+002	-2.1617240984E+001	0.965	1.604	1.606
48.576	4.486	233.513	0.391	8.9446471022E+002	3.3189668032E+002	-2.2801620770E+001	0.960	1.592	1.595
49.117	4.490	233.724	0.391	8.8234312880E+002	3.2734420337E+002	-2.3310710714E+001	0.955	1.582	1.587
49.204	4.491	233.758	0.402	8.8031287741E+002	3.2657902707E+002	-2.3436768276E+001	0.954	1.580	1.585
49.745	4.490	233.977	0.395	8.6769684386E+002	3.2181106535E+002	-2.3798142394E+001	0.950	1.569	1.578
50.286	4.479	234.185	0.385	8.5456299056E+002	3.1677644559E+002	-2.6017161933E+001	0.944	1.559	1.571
50.287	4.479	234.185	0.361	8.5453812268E+002	3.1676681798E+002	-2.6021385426E+001	0.944	1.559	1.571
50.828	4.442	234.381	0.368	8.4010853699E+002	3.1109305457E+002	-2.7893818094E+001	0.938	1.548	1.564
51.339	4.414	234.573	0.386	8.2525043479E+002	3.0507714800E+002	-3.0529189252E+001	0.931	1.537	1.559
51.880	4.381	234.787	0.392	8.0788704260E+002	2.9781903403E+002	-3.1171587704E+001	0.922	1.525	1.553
52.000	4.371	234.831	0.373	8.0418567022E+002	2.9623484696E+002	-3.1338399560E+001	0.920	1.523	1.551
52.364	4.341	234.967	0.391	7.9237599934E+002	2.9104283371E+002	-3.3910234418E+001	0.914	1.516	1.548
52.905	4.297	235.185	0.405	7.7286879119E+002	2.8224613570E+002	-3.7134715404E+001	0.904	1.506	1.543
53.418	4.258	235.395	0.426	7.5326596110E+002	2.7312463742E+002	-4.0440636282E+001	0.891	1.497	1.538
53.959	4.222	235.634	0.466	7.3008674492E+002	2.6213160325E+002	-4.6212071844E+001	0.876	1.489	1.534
54.442	4.214	235.872	0.485	7.0634469109E+002	2.5079694266E+002	-4.9046232587E+001	0.858	1.483	1.532
54.983	4.183	236.130	0.482	6.7991265857E+002	2.3820735076E+002	-4.9728132069E+001	0.838	1.479	1.530
55.490	4.158	236.377	0.479	6.5429490369E+002	2.2618371815E+002	-5.0055725140E+001	0.818	1.476	1.530
56.031	4.110	236.632	0.442	6.2749646417E+002	2.1387377693E+002	-4.6595632190E+001	0.798	1.476	1.531
56.563	4.030	236.851	0.403	6.0423251063E+002	2.0353780506E+002	-4.2969066651E+001	0.780	1.477	1.535
57.104	3.928	237.065	0.385	5.8139012742E+002	1.9369907093E+002	-4.1167637497E+001	0.764	1.481	1.540
57.645	3.816	237.268	0.376	5.5968861346E+002	1.8460691831E+002	-4.1201063884E+001	0.749	1.486	1.545
57.708	3.803	237.292	0.372	5.5709828650E+002	1.8353202469E+002	-4.0983338533E+001	0.748	1.486	1.546
58.000	3.738	237.400	0.370	5.4558957023E+002	1.7880375094E+002	-3.9446905998E+001	0.740	1.490	1.550
58.541	3.619	237.601	0.376	5.2418209462E+002	1.7009641389E+002	-4.0364629674E+001	0.726	1.496	1.556
58.813	3.562	237.705	0.393	5.1311334618E+002	1.6559232952E+002	-4.1088031662E+001	0.718	1.500	1.560
59.354	3.452	237.920	0.408	4.9053475059E+002	1.5637322536E+002	-4.2541299996E+001	0.702	1.508	1.567
59.894	3.353	238.146	0.432	4.6711169459E+002	1.4671521029E+002	-4.4412250437E+001	0.683	1.517	1.574
60.435	3.264	238.387	0.459	4.4250749544E+002	1.3645028140E+002	-4.6440810774E+001	0.660	1.526	1.580
60.963	3.192	238.637	0.511	4.1750870074E+002	1.2593078944E+002	-5.0440624661E+001	0.635	1.535	1.584
61.504	3.153	238.933	0.532	3.8852180159E+002	1.1380261094E+002	-5.1332733326E+001	0.603	1.546	1.589
62.030	3.098	239.205	0.510	3.6264555782E+002	1.0310330674E+002	-4.8040818383E+001	0.572	1.555	1.591
62.571	3.031	239.478	0.500	3.3726956024E+002	9.2899895328E+001	-4.5800048028E+001	0.541	1.564	1.593
63.094	2.962	239.737	0.482	3.1386728205E+002	8.3939001102E+001	-4.3146911441E+001	0.513	1.573	1.595
63.635	2.870	239.991	0.456	2.9141093495E+002	7.5699874800E+001	-3.9922802822E+001	0.486	1.583	1.598
64.166	2.767	240.226	0.432	2.7104009735E+002	6.8573942593E+001	-3.7036316845E+001	0.462	1.592	1.601
64.707	2.645	240.454	0.417	2.5173653356E+002	6.2145381912E+001	-3.4403228890E+001	0.440	1.601	1.606
65.000	2.575	240.573	0.402	2.4186618707E+002	5.8976784235E+001	-3.2947569731E+001	0.429	1.606	1.609
65.252	2.512	240.673	0.401	2.3372076294E+002	5.6431368167E+001	-3.2268272178E+001	0.420	1.611	1.611
65.793	2.376	240.892	0.404	2.1628760558E+002	5.1110695024E+001	-3.1716005721E+001	0.402	1.620	1.616
66.334	2.240	241.110	0.405	1.9940364922E+002	4.6076873787E+001	-3.2174424905E+001	0.383	1.629	1.621
66.364	2.233	241.123	0.447	1.9844904473E+002	4.5793349009E+001	-3.2259781153E+001	0.382	1.629	1.622

66.905	2.114	241.365	0.466	1.8067549669E+002	4.0565749788E+001	-3.3483066271E+001	0.360	1.638	1.625
67.444	2.015	241.626	0.496	1.6228199213E+002	3.5203641003E+001	-3.4227876088E+001	0.334	1.646	1.628
67.985	1.921	241.901	0.528	1.4370121607E+002	2.9837566565E+001	-3.4921827342E+001	0.304	1.653	1.629
68.511	1.852	242.190	0.545	1.2505783602E+002	2.4543152568E+001	-3.4426399915E+001	0.271	1.660	1.628
69.052	1.769	242.482	0.530	1.0702106472E+002	1.9524605541E+001	-3.1521241222E+001	0.235	1.668	1.627
69.567	1.679	242.749	0.511	9.1659042662E+001	1.5452736493E+001	-2.8593334326E+001	0.202	1.676	1.626
70.108	1.568	243.021	0.478	7.6868006183E+001	1.1718542072E+001	-2.5152424892E+001	0.167	1.683	1.624
70.500	1.465	243.195	0.436	6.7635755374E+001	9.4293308364E+000	-2.2576542864E+001	0.144	1.688	1.622
70.634	1.426	243.251	0.421	6.4665448384E+001	8.6936239229E+000	-2.2037132915E+001	0.136	1.689	1.622
71.175	1.263	243.479	0.427	5.3183983655E+001	6.0666329789E+000	-2.0542726841E+001	0.104	1.698	1.623
71.716	1.104	243.712	0.433	4.2437961756E+001	3.9617674491E+000	-1.9041573152E+001	0.076	1.713	1.631
71.819	1.074	243.758	0.520	4.0476060465E+001	3.6180822620E+000	-1.9329475077E+001	0.071	1.717	1.634
72.360	0.964	244.048	0.529	2.8763205196E+001	1.7618531081E+000	-1.9838163979E+001	0.063	1.750	1.661
72.901	0.848	244.330	0.522	1.9010919640E+001	6.2249874107E-001	-1.6685656367E+001	0.063	1.809	1.714
73.149	0.794	244.459	0.603	1.5037075935E+001	2.9492463457E-001	-1.6110985676E+001	0.063	1.826	1.733
73.690	0.734	244.806	0.603	6.2760069001E+000	4.0974142848E-002	-1.3897322202E+001	0.063	1.961	1.859

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
ht(m) : Altezza linea di thrust da nodo sinistro base concio
yt(m) : coordinata Y linea di trust
yt'(-) : gradiente pendenza locale linea di trust
E(x)(kN/m) : Forza Normale interconcio
T(x)(kN/m) : Forza Tangenziale interconcio
E' (kN) : derivata Forza normale interconcio
Rho(x) (-) : fattore mobilizzazione resistenza al taglio verticale interconcio ZhU et al.(2003)
FS_qFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by qFEM
FS_srmFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by SRM Procedure

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TABELLA SFORZI DI TAGLIO DISTRIBUITI LUNGO SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	dl (m)	alpha (°)	TauStress (kPa)	TauF (kN/m)	TauStrength (kPa)	TauS (kN/m)
9.873	0.541	0.618	-28.948	-1.812	-1.120	21.245	13.134
10.414	0.541	0.618	-28.948	-5.437	-3.361	24.811	15.340
10.955	0.541	0.618	-28.948	-9.061	-5.602	28.968	17.910
11.496	0.541	0.618	-28.948	-12.686	-7.843	35.666	22.050
12.037	0.541	0.618	-28.948	-16.310	-10.084	42.694	26.396
12.578	0.541	0.618	-28.948	-19.934	-12.325	52.314	32.343
13.119	0.541	0.618	-28.948	-23.559	-14.565	60.914	37.660
13.660	0.287	0.328	-28.948	-26.333	-8.638	62.866	20.621
13.947	0.541	0.610	-27.564	-28.011	-17.095	67.121	40.962
14.488	0.541	0.610	-27.564	-31.376	-19.148	71.618	43.707
15.029	0.541	0.610	-27.564	-34.742	-21.202	77.650	47.388
15.570	0.241	0.272	-27.564	-37.175	-10.120	80.197	21.833
15.811	0.189	0.207	-24.193	-34.639	-7.171	83.721	17.333
16.000	0.541	0.593	-24.193	-36.807	-21.830	86.279	51.172
16.541	0.459	0.503	-24.193	-39.926	-20.091	90.190	45.383
17.000	0.021	0.023	-24.193	-41.416	-0.951	93.483	2.146
17.021	0.541	0.574	-19.448	-35.110	-20.144	95.483	54.783
17.562	0.424	0.450	-19.448	-37.036	-16.666	97.814	44.016
17.986	0.014	0.014	-13.151	-25.243	-0.356	100.416	1.416
18.000	0.541	0.556	-13.151	-25.739	-14.300	101.776	56.545
18.541	0.438	0.449	-13.151	-26.608	-11.956	105.027	47.191
18.979	0.021	0.022	-7.933	-14.679	-0.318	103.576	2.244
19.000	0.541	0.546	-7.933	-14.977	-8.181	108.182	59.093
19.541	0.293	0.296	-7.933	-15.423	-4.565	110.411	32.677
19.834	0.541	0.542	-2.480	-1.282	-0.694	109.319	59.198
20.375	0.422	0.423	-2.480	-1.316	-0.556	114.039	48.195
20.797	0.541	0.541	1.900	11.051	5.982	111.003	60.086
21.338	0.523	0.523	1.900	11.303	5.915	112.613	58.929
21.861	0.541	0.543	4.906	20.318	11.033	109.297	59.348
22.402	0.541	0.543	4.906	20.700	11.240	110.147	59.809

22.943	0.280	0.281	4.906	20.989	5.896	109.649	30.800
23.223	0.541	0.544	5.939	24.385	13.263	109.665	59.649
23.764	0.541	0.544	5.939	24.794	13.486	110.301	59.996
24.305	0.105	0.106	5.939	25.039	2.651	110.750	11.726
24.411	0.089	0.090	7.195	28.975	2.612	109.896	9.906
24.500	0.541	0.545	7.195	29.201	15.924	110.550	60.283
25.041	0.469	0.472	7.195	29.558	13.960	111.605	52.711
25.510	0.541	0.547	8.553	34.148	18.682	111.398	60.945
26.051	0.502	0.508	8.553	34.523	17.539	112.532	57.173
26.553	0.541	0.549	9.961	39.301	21.587	112.098	61.574
27.094	0.513	0.521	9.961	39.672	20.650	112.784	58.707
27.607	0.541	0.552	11.257	44.089	24.320	112.148	61.863
28.148	0.475	0.485	11.257	44.428	21.535	112.662	54.609
28.623	0.541	0.554	12.556	48.796	27.046	111.710	61.917
29.164	0.499	0.512	12.556	49.113	25.125	112.202	57.400
29.663	0.541	0.557	13.770	53.154	29.608	111.418	62.062
30.204	0.036	0.037	13.770	53.309	1.952	111.682	4.089
30.240	0.485	0.500	13.770	53.525	26.745	112.040	55.984
30.725	0.541	0.560	14.865	57.292	32.069	111.579	62.455
31.266	0.541	0.560	14.865	57.719	32.307	112.271	62.842
31.807	0.050	0.052	14.865	57.952	2.999	112.649	5.830
31.857	0.143	0.148	14.830	57.919	8.547	112.809	16.647
32.000	0.541	0.560	14.830	58.094	32.512	113.096	63.294
32.541	0.429	0.443	14.830	58.306	25.850	113.441	50.293
32.970	0.541	0.560	14.793	58.406	32.682	113.822	63.689
33.511	0.541	0.560	14.793	58.645	32.815	114.205	63.904
34.052	0.010	0.011	14.793	58.766	0.627	114.398	1.220
34.062	0.541	0.559	14.757	58.774	32.882	114.641	64.137
34.603	0.541	0.559	14.757	59.014	33.016	115.027	64.353
35.144	0.004	0.005	14.757	59.134	0.275	115.221	0.535
35.148	0.541	0.559	14.720	59.139	33.080	115.459	64.584
35.689	0.531	0.549	14.720	59.378	32.624	115.848	63.650
36.221	0.541	0.559	14.683	59.501	33.277	116.279	65.032
36.762	0.541	0.559	14.683	59.744	33.413	116.676	65.253
37.303	0.001	0.001	14.683	59.865	0.078	116.873	0.153
37.304	0.541	0.559	14.646	59.871	33.478	117.114	65.487
37.845	0.541	0.559	14.646	60.116	33.615	117.515	65.712
38.386	0.004	0.004	14.646	60.239	0.242	117.716	0.473
38.390	0.541	0.559	14.610	60.245	33.682	117.958	65.948
38.931	0.541	0.559	14.610	60.491	33.820	118.361	66.174
39.472	0.017	0.018	14.610	60.618	1.091	118.570	2.133
39.489	0.301	0.311	14.574	60.574	18.813	118.727	36.874
39.790	0.541	0.559	14.574	60.873	34.028	119.216	66.641
40.331	0.269	0.277	14.574	61.217	16.986	119.780	33.235
40.600	0.541	0.561	15.348	64.092	35.957	119.474	67.026
41.141	0.526	0.545	15.348	64.519	35.160	120.157	65.481
41.666	0.541	0.563	16.161	67.594	38.073	119.905	67.538
42.207	0.512	0.533	16.161	67.984	36.229	120.528	64.230
42.719	0.281	0.294	16.997	70.983	20.863	120.037	35.280
43.000	0.541	0.566	16.997	70.982	40.156	120.092	67.938
43.541	0.217	0.227	16.997	70.848	16.056	119.971	27.189
43.758	0.442	0.465	17.820	73.320	34.061	118.917	55.243
44.200	0.541	0.568	17.820	73.295	41.651	119.007	67.628
44.741	0.078	0.082	17.820	73.385	5.982	119.197	9.716
44.819	0.541	0.571	18.653	76.036	43.416	118.433	67.625
45.360	0.506	0.534	18.653	76.136	40.672	118.731	63.426
45.866	0.541	0.574	19.471	78.696	45.158	118.059	67.745
46.407	0.528	0.560	19.471	78.742	44.123	118.324	66.302
46.935	0.541	0.577	20.247	81.065	46.745	117.548	67.782
47.476	0.524	0.558	20.247	81.053	45.263	117.494	65.613
48.000	0.035	0.038	20.247	81.052	3.062	117.614	4.443
48.035	0.541	0.579	20.951	83.141	48.164	117.035	67.799
48.576	0.541	0.579	20.951	83.220	48.210	117.071	67.820
49.117	0.087	0.093	20.951	83.265	7.717	117.212	10.864
49.204	0.541	0.584	22.063	86.401	50.437	115.970	67.698
49.745	0.541	0.584	22.063	86.389	50.430	116.076	67.760

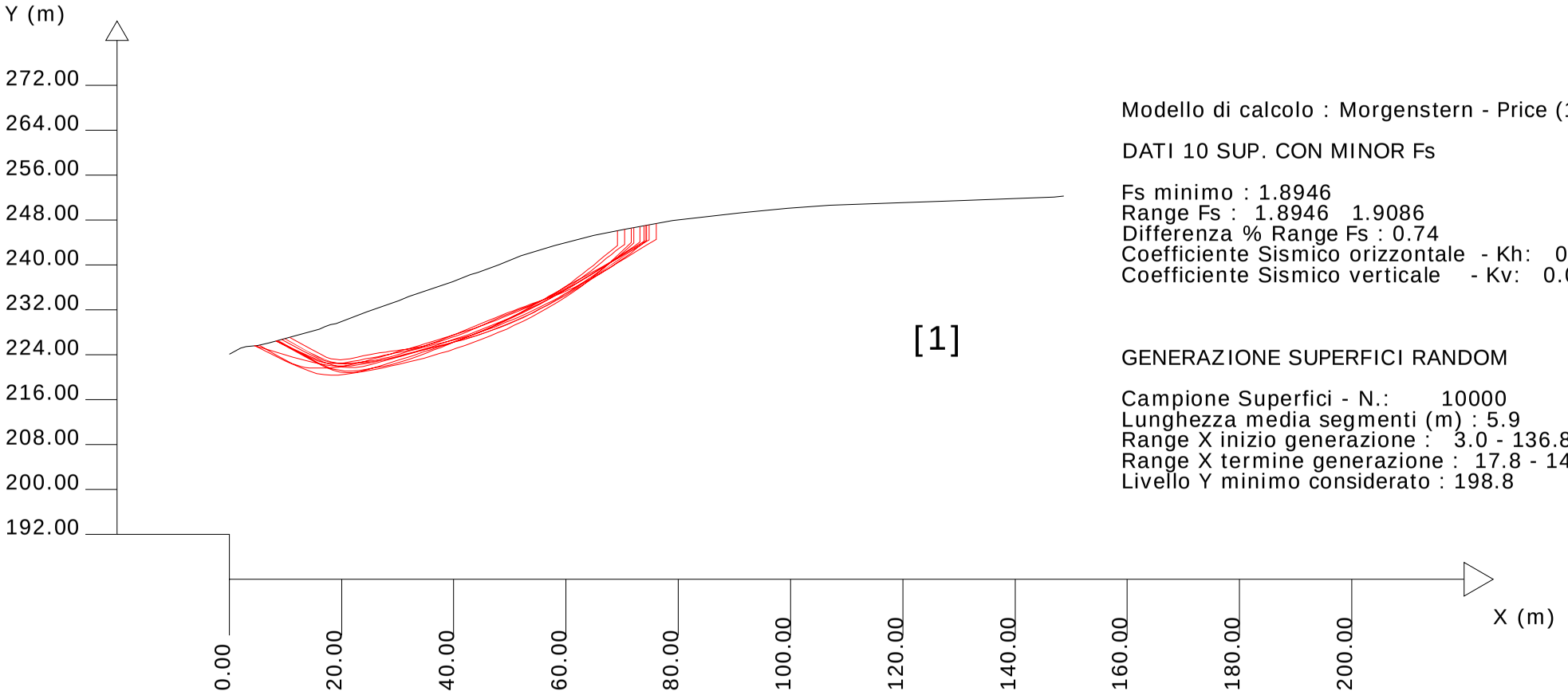
50.286	0.001	0.001	22.063	86.383	0.089	116.255	0.120
50.287	0.541	0.589	23.281	89.616	52.780	114.923	67.685
50.828	0.511	0.557	23.281	89.499	49.835	115.155	64.120
51.339	0.541	0.595	24.549	92.574	55.061	114.039	67.827
51.880	0.120	0.131	24.549	92.426	12.145	113.844	14.959
52.000	0.364	0.400	24.549	92.183	36.864	113.925	45.558
52.364	0.541	0.601	25.790	94.566	56.820	112.639	67.679
52.905	0.514	0.571	25.790	93.800	53.519	112.449	64.159
53.418	0.541	0.607	26.997	95.663	58.084	111.371	67.621
53.959	0.482	0.541	26.997	94.780	51.315	111.798	60.529
54.442	0.541	0.614	28.185	96.275	59.092	109.750	67.363
54.983	0.507	0.575	28.185	95.222	54.755	109.053	62.708
55.490	0.541	0.620	29.284	96.178	59.656	106.636	66.143
56.031	0.532	0.610	29.284	94.953	57.949	104.194	63.589
56.563	0.541	0.626	30.264	95.357	59.729	101.540	63.602
57.104	0.541	0.626	30.264	93.984	58.869	99.844	62.539
57.645	0.063	0.073	30.264	93.218	6.765	99.410	7.214
57.708	0.292	0.340	30.626	93.336	31.698	98.192	33.348
58.000	0.541	0.629	30.626	92.099	57.903	97.210	61.117
58.541	0.272	0.316	30.626	90.819	28.658	96.467	30.440
58.813	0.541	0.631	31.005	90.083	56.859	95.279	60.139
59.354	0.540	0.630	31.005	88.322	55.681	94.356	59.485
59.894	0.541	0.634	31.390	87.076	55.185	93.162	59.043
60.435	0.528	0.618	31.390	85.279	52.710	92.302	57.051
60.963	0.541	0.636	31.776	83.960	53.432	91.827	58.438
61.504	0.527	0.619	31.776	82.106	50.853	89.436	55.392
62.030	0.541	0.639	32.154	80.686	51.560	87.002	55.596
62.571	0.523	0.618	32.154	78.780	48.683	84.759	52.377
63.094	0.541	0.642	32.528	77.267	49.580	82.067	52.659
63.635	0.531	0.630	32.528	75.289	47.413	79.739	50.215
64.166	0.541	0.644	32.892	73.661	47.459	77.186	49.730
64.707	0.293	0.349	32.892	72.079	25.132	75.528	26.335
65.000	0.252	0.300	32.892	70.972	21.322	74.373	22.344
65.252	0.541	0.647	33.240	69.542	44.982	72.689	47.018
65.793	0.541	0.647	33.240	67.120	43.416	70.738	45.756
66.334	0.030	0.035	33.240	65.843	2.332	69.997	2.479
66.364	0.541	0.651	33.733	64.946	42.250	68.716	44.702
66.905	0.539	0.648	33.733	62.447	40.490	67.174	43.555
67.444	0.541	0.654	34.242	60.289	39.455	65.044	42.567
67.985	0.525	0.636	34.242	57.738	36.698	63.433	40.318
68.511	0.541	0.658	34.756	55.481	36.534	60.902	40.103
69.052	0.516	0.628	34.756	52.869	33.185	58.425	36.673
69.567	0.541	0.663	35.264	50.500	33.461	55.789	36.965
70.108	0.392	0.480	35.264	48.119	23.085	53.662	25.744
70.500	0.134	0.164	35.264	46.763	7.650	52.602	8.605
70.634	0.541	0.668	35.925	45.221	30.211	50.620	33.818
71.175	0.541	0.668	35.925	42.222	28.208	48.183	32.190
71.716	0.104	0.128	35.925	40.434	5.188	46.726	5.995
71.819	0.541	0.673	36.446	38.799	26.094	45.355	30.504
72.360	0.541	0.673	36.446	35.708	24.015	42.675	28.701
72.901	0.247	0.307	36.446	33.457	10.283	40.832	12.550
73.149	0.541	0.677	36.931	31.302	21.185	38.677	26.177
73.690	0.541	0.677	36.931	28.125	19.035	36.524	24.719

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
dl(m) : lunghezza base concio
alpha(°) : Angolo pendenza base concio
TauStress(kPa) : Sforzo di taglio su base concio
TauF (kN/m) : Forza di taglio su base concio
TauStrength(kPa) : Resistenza al taglio su base concio
TauS (kN/m) : Forza resistente al taglio su base concio

SSAP 5.0.2 (2021) - Slope Stability Analysis Program
Software by Dr.Geol. L.Borselli - www.lorenzo-borselli.eu
SSAP/DXF generator rel. 2.0 (2020)

Data : 18/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Morgenstern - Price (1965)

DATI 10 SUP. CON MINOR Fs

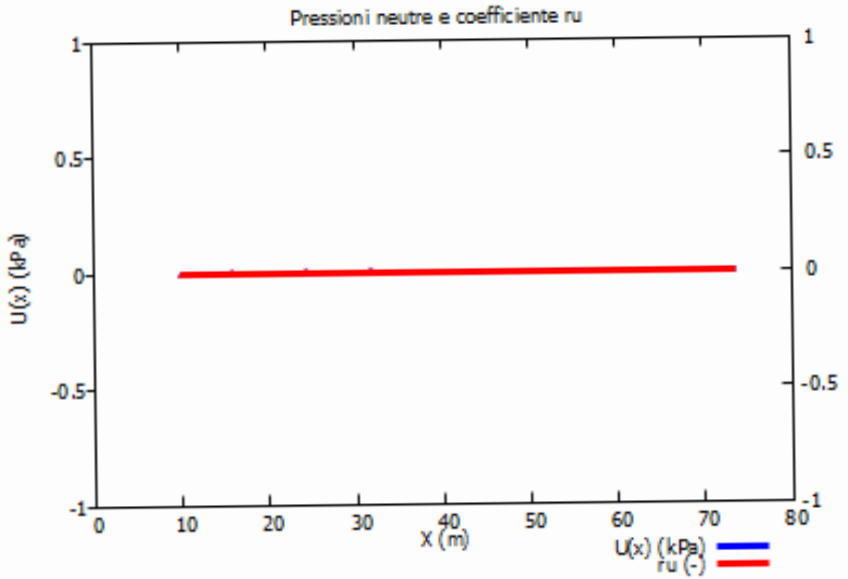
Fs minimo : 1.8946
Range Fs : 1.8946 1.9086
Differenza % Range Fs : 0.74
Coefficiente Sismico orizzontale - Kh: 0.0350
Coefficiente Sismico verticale - Kv: 0.0175

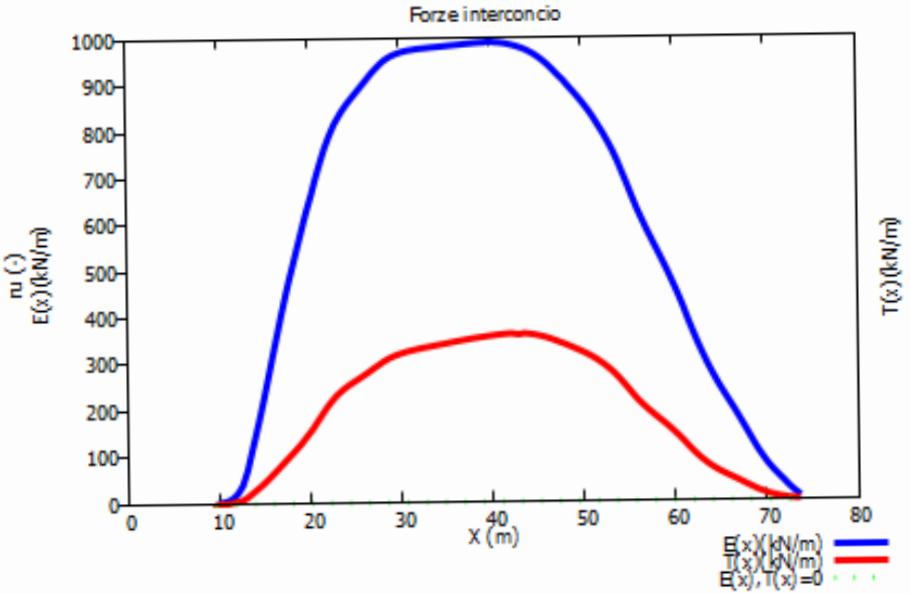
GENERAZIONE SUPERFICI RANDOM

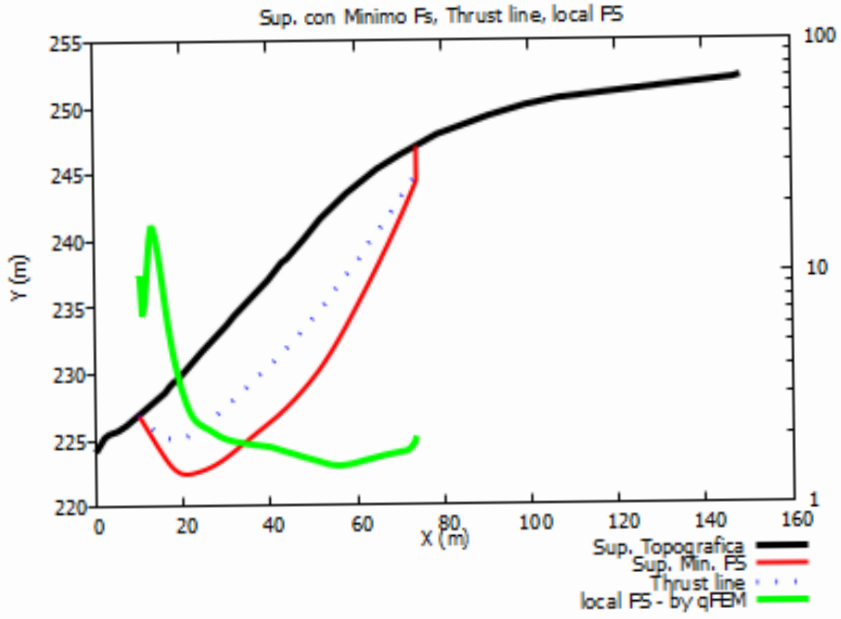
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 5.9
Range X inizio generazione : 3.0 - 136.8
Range X termine generazione : 17.8 - 145.7
Livello Y minimo considerato : 198.8

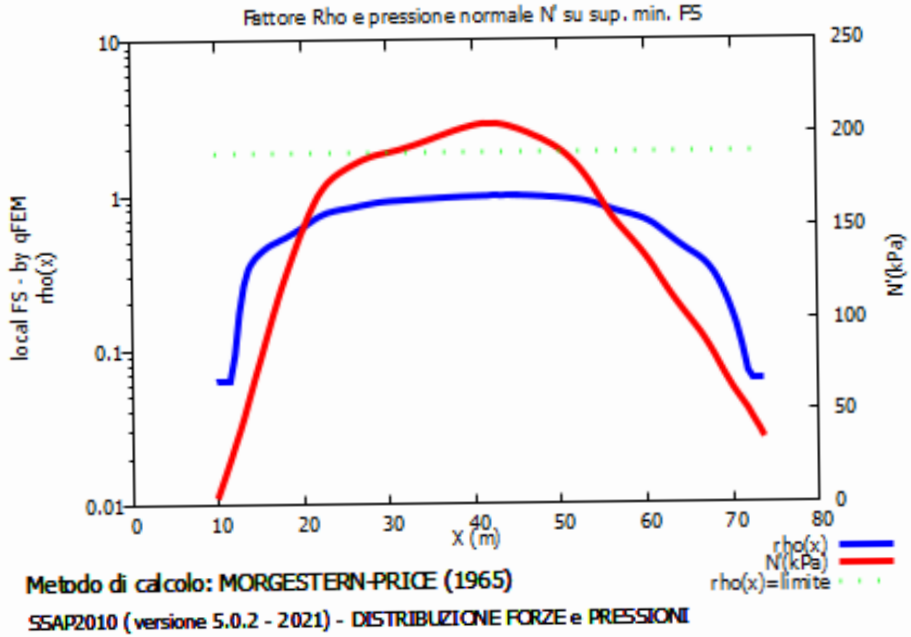
Parametri Geotecnici degli strati # ----------

N.	phi`	C`	Cu	Gamm	GammSat	sgci	GSI	mi	D
..	deg	kPa	kPa	kN/m3	kN/m3	MPa	..	..	..
1	26.00	19.50	0	20.00	22.00	0	0	0	0





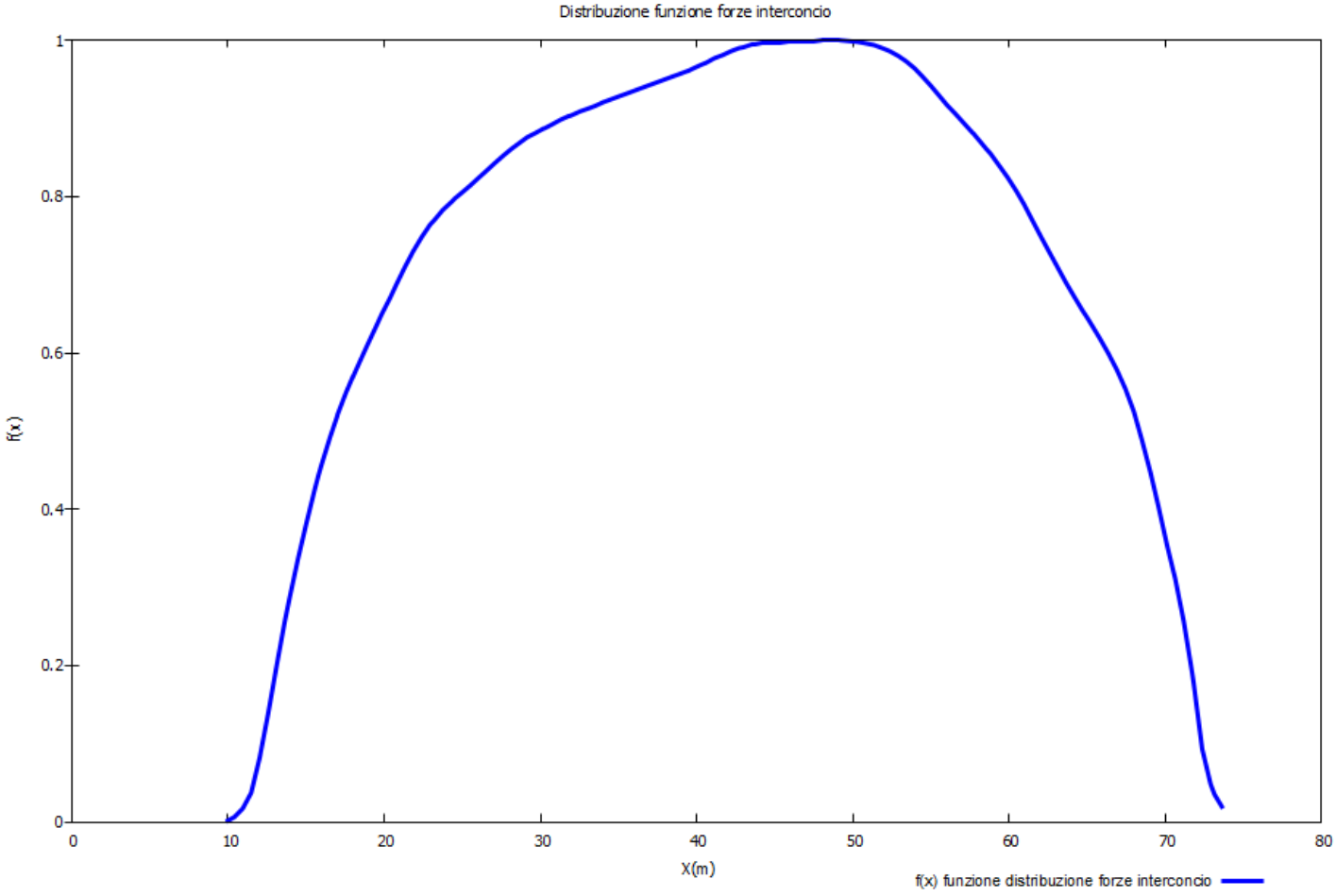




Metodo di calcolo: MORGESTERN-PRICE (1965)

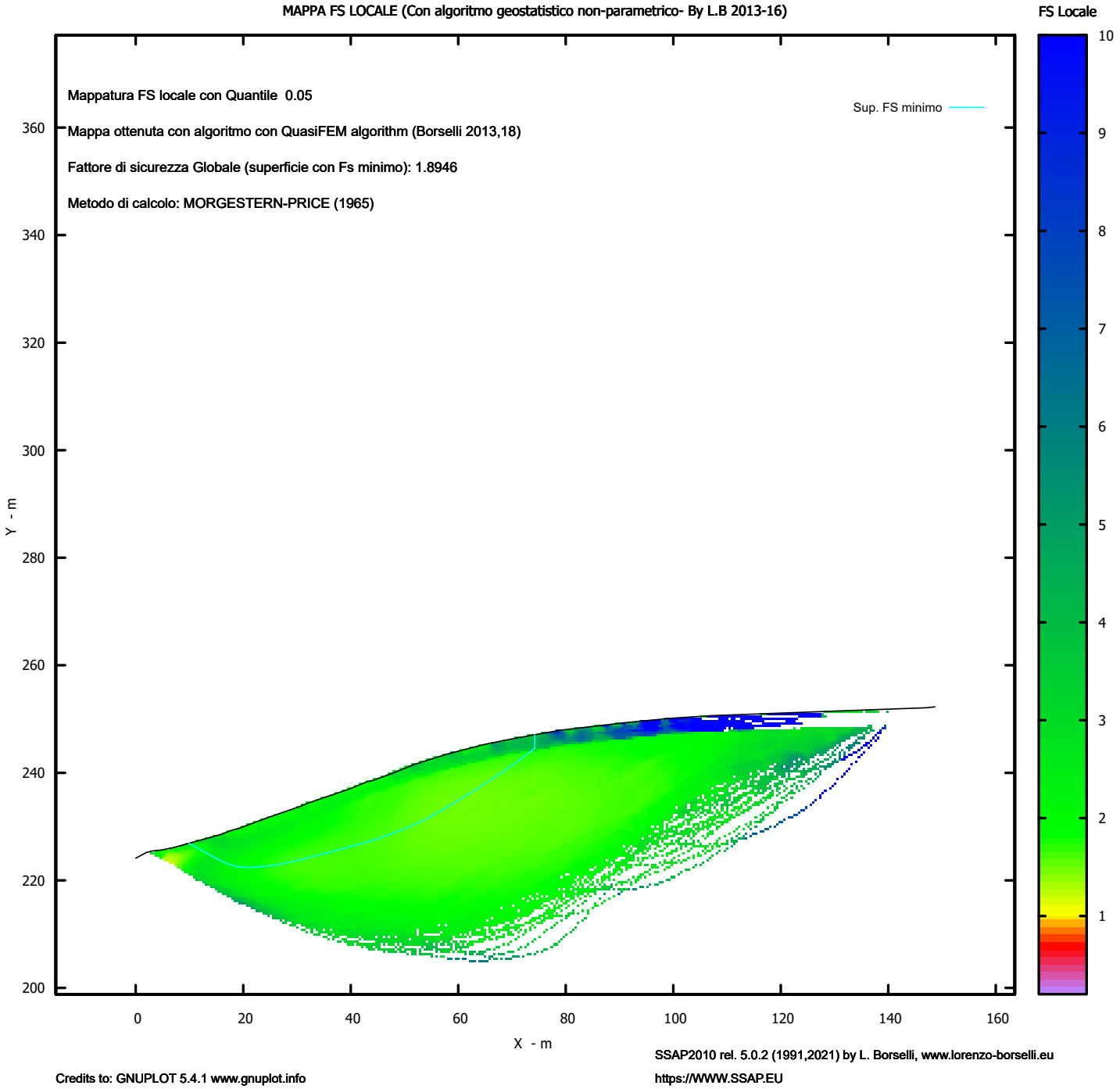
SSAP2010 (versione 5.0.2 - 2021) - DISTRIBUZIONE FORZE e PRESSIONI

18/11/21 14:26



Graphic rendering,Credits to: GNUPLOT 5.4.1 www.gnuplot.info

SSAP2010 rel. 5.0.2 (1991,2021) by L. Borselli - www.ssap.eu



Credits to: GNUPLOT 5.4.1 www.gnuplot.info

SSAP2010 rel. 5.0.2 (1991,2021) by L. Borselli, www.lorenzo-borselli.eu

https://WWW.SSAP.EU

Report elaborazioni

SSAP 5.0.2 - Slope Stability Analysis Program (1991,2021)
WWW.SSAP.EU
Build No. 11893
BY
Dr. Geol. LORENZO BORSELLI *,**
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e-mail: lborselli@gmail.com
CV e WEB page personale: WWW.LORENZO-BORSELLI.EU
** Gia' Ricercatore CNR-IRPI fino a Luglio 2011

Ultima Revisione struttura tabelle del report: 21 Febbraio 2021

File report: C:\SSAP2010\CRACO SERRACARUSO CAP\VERIFICA 2\DRENATA\BERSELLI\BERSELLI.txt
Data: 18/11/2021
Localita' :
Descrizione:
Modello pendio: DRENATA.mod

---------- PARAMETRI DEL MODELLO DEL PENDIO ----------

__ PARAMETRI GEOMETRICI - Coordinate X Y (in m) __

SUP T.		SUP 2		SUP 3		SUP 4	
X	Y	X	Y	X	Y	X	Y
0.00	224.12	-	-	-	-	-	-
2.00	225.19	-	-	-	-	-	-
3.00	225.45	-	-	-	-	-	-
5.00	225.68	-	-	-	-	-	-
7.00	226.09	-	-	-	-	-	-
16.00	228.58	-	-	-	-	-	-
17.00	229.02	-	-	-	-	-	-
18.00	229.36	-	-	-	-	-	-
19.00	229.59	-	-	-	-	-	-
24.50	231.65	-	-	-	-	-	-
30.24	233.63	-	-	-	-	-	-
32.00	234.34	-	-	-	-	-	-
39.79	237.00	-	-	-	-	-	-
43.00	238.32	-	-	-	-	-	-
44.20	238.62	-	-	-	-	-	-
48.00	240.01	-	-	-	-	-	-
52.00	241.62	-	-	-	-	-	-
58.00	243.50	-	-	-	-	-	-
65.00	245.31	-	-	-	-	-	-
70.50	246.41	-	-	-	-	-	-
79.00	247.92	-	-	-	-	-	-
91.00	249.32	-	-	-	-	-	-
99.50	250.13	-	-	-	-	-	-
107.00	250.62	-	-	-	-	-	-
130.00	251.48	-	-	-	-	-	-
147.00	252.09	-	-	-	-	-	-
148.68	252.26	-	-	-	-	-	-

ASSENZA DI FALDA

------- PARAMETRI GEOMECCANICI -------

	fi`	C`	Cu	Gamm	Gamm_sat	STR_IDX	sgci	GSI	mi	D
STRATO 1	26.00	19.50	0.00	20.00	22.00	2.279	0.00	0.00	0.00	0.00

LEGENDA: fi`_____ Angolo di attrito interno efficace(in gradi)
C` _____ Coesione efficace (in Kpa)

Cu _____ Resistenza al taglio Non drenata (in Kpa)
Gamm _____ Peso di volume terreno fuori falda (in KN/m^3)
Gamm_sat __ Peso di volume terreno immerso (in KN/m^3)
STR_IDX ___ Indice di resistenza (usato in solo in 'SNIFF SEARCH) (adimensionale)
---- SOLO Per AMMASSI ROCCIOSI FRATTURATI - Parametri Criterio di Rottura di Hoek (2002)-
sigci _____ Resistenza Compressione Uniassiale Roccia Intatta (in MPa)
GSI _____ Geological Strenght Index ammasso(adimensionale)
mi _____ Indice litologico ammasso(adimensionale)
D _____ Fattore di disturbo ammasso(adimensionale)
Fattore di riduzione NTC2018: gammaPHI=1.25 e gammaC=1.25 - DISATTIVATO (solo per ROCCE)
Uso CRITERIO DI ROTTURA Hoek et al.(2002,2006) - non-lineare - Generalizzato, secondo Lei et al.(2016)

---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
MOTORE DI RICERCA: RANDOM SEARCH - Siegel (1981)
FILTRAGGIO SUPERFICI : ATTIVATO
COORDINATE X1,X2,Y OSTACOLO : 0.00 0.00 0.00
LUNGHEZZA MEDIA SEGMENTI (m)*: 5.9 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 2.97 136.79
LIVELLO MINIMO CONSIDERATO (Ymin): 198.79
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 17.84 145.71
TOTALE SUPERFICI GENERATE : 10000
*NOTA IMPORTANTE: La lunghezza media dei segmenti non viene cosiderata nel caso
di uso del motore di recerca NEW RANOM SEARCH

---------- INFORMAZIONI PARAMETRI DI CALCOLO ----------
METODO DI CALCOLO : BORSELLI (Borselli, 2016)
METODO DI ESPLORAZIONE CAMPO VALORI (lambda0,Fs0) ADOTTATO : A (rapido)
COEFFICIENTE SISMICO UTILIZZATO Kh : 0.0350
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0175
COEFFICIENTE c=Kv/Kh UTILIZZATO : 0.5000
FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00

N.B. Le forze orizzontali addizionali in testa e alla base sono poste uguali a 0
durante le tutte le verifiche globali.
I valori >0 impostati dall'utente sono utilizzati solo in caso di verifica singola

---------- RISULTATO FINALE ELABORAZIONI ----------
---
* DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *

Fattore di sicurezza (FS) 1.8932 - Min. - X Y Lambda= 0.2766
5.52 225.79
10.43 223.30
12.65 222.23
14.09 221.66
15.22 221.32
16.40 221.11
17.39 221.04
18.52 221.06
19.76 221.19
21.33 221.44
22.77 221.67
24.13 221.90
25.44 222.12
26.72 222.34
28.01 222.57
29.30 222.81
30.62 223.05
31.97 223.30
33.24 223.57
34.50 223.85
35.73 224.15
36.99 224.48

38.23 224.83
39.50 225.22
40.81 225.64
42.22 226.12
43.52 226.59
44.78 227.07
46.01 227.57
47.27 228.12
48.49 228.69
49.75 229.30
51.05 229.96
52.45 230.70
53.76 231.42
55.04 232.15
56.28 232.89
57.55 233.66
58.79 234.44
60.05 235.26
61.33 236.12
62.67 237.05
63.98 237.96
65.27 238.86
66.56 239.77
67.84 240.67
69.28 241.70
70.88 242.85
72.56 244.08
72.56 246.78

Fattore di sicurezza (FS) 1.8941 - N.2 -- X Y Lambda= 0.2795
4.61 225.63
10.63 221.98
13.27 220.47
14.90 219.69
16.12 219.28
17.45 219.07
18.51 219.05
19.78 219.21
21.24 219.54
23.21 220.12
24.99 220.64
26.62 221.13
28.19 221.61
29.70 222.07
31.22 222.55
32.75 223.04
34.32 223.55
35.92 224.07
37.43 224.60
38.91 225.14
40.36 225.71
41.86 226.33
43.31 226.97
44.80 227.66
46.33 228.41
47.96 229.23
49.51 230.03
51.03 230.84
52.53 231.66
54.03 232.50
55.52 233.35
57.02 234.23
58.55 235.15
60.13 236.12
61.67 237.07

63.18 238.03
64.69 238.99
66.20 239.97
67.89 241.09
69.78 242.35
72.21 243.99
72.21 246.71

Fattore di sicurezza (FS) 1.8956 - N.3 -- X Y Lambda= 0.2744
5.51 225.78
12.01 222.28
14.89 220.83
16.70 220.07
18.08 219.67
19.57 219.46
20.78 219.44
22.21 219.60
23.82 219.93
25.97 220.49
27.87 221.01
29.63 221.51
31.30 222.01
32.95 222.53
34.58 223.06
36.23 223.61
37.91 224.21
39.67 224.84
41.35 225.47
43.00 226.12
44.61 226.78
46.26 227.47
47.88 228.18
49.53 228.92
51.22 229.71
52.99 230.57
54.67 231.41
56.31 232.26
57.93 233.12
59.57 234.03
61.18 234.96
62.82 235.93
64.50 236.96
66.25 238.06
67.94 239.10
69.60 240.10
71.24 241.06
72.88 242.01
74.71 243.03
76.76 244.15
78.60 245.12
78.60 247.85

Fattore di sicurezza (FS) 1.8972 - N.4 -- X Y Lambda= 0.2738
3.93 225.56
7.45 223.52
9.08 222.62
10.16 222.09
11.04 221.74
11.92 221.48
12.70 221.31
13.57 221.20
14.51 221.14
15.70 221.12
16.72 221.13

17.67 221.16
18.56 221.22
19.48 221.31
20.36 221.42
21.28 221.57
22.23 221.75
23.28 221.97
24.25 222.20
25.19 222.43
26.10 222.67
27.03 222.93
27.94 223.20
28.86 223.50
29.80 223.81
30.79 224.16
31.75 224.49
32.70 224.82
33.65 225.14
34.59 225.45
35.52 225.77
36.46 226.07
37.40 226.38
38.35 226.68
39.30 226.98
40.24 227.28
41.19 227.59
42.13 227.89
43.08 228.19
44.03 228.49
44.98 228.79
45.93 229.10
46.87 229.40
47.81 229.71
48.74 230.02
49.68 230.34
50.62 230.67
51.57 231.01
52.54 231.36
53.55 231.73
54.49 232.09
55.40 232.47
56.29 232.87
57.22 233.30
58.11 233.75
59.03 234.24
59.97 234.76
60.99 235.35
61.96 235.93
62.90 236.50
63.83 237.08
64.77 237.67
65.69 238.26
66.63 238.88
67.57 239.51
68.54 240.18
69.49 240.83
70.44 241.49
71.38 242.15
72.32 242.81
73.37 243.57
74.54 244.41
74.54 247.13

Fattore di sicurezza (FS) 1.8973 - N.5 -- X Y Lambda= 0.2741
6.84 226.06

12.24 222.73
14.65 221.34
16.15 220.61
17.29 220.19
18.52 219.95
19.52 219.88
20.70 219.94
22.02 220.15
23.80 220.53
25.39 220.89
26.86 221.23
28.27 221.56
29.64 221.90
31.01 222.25
32.39 222.62
33.80 223.00
35.27 223.41
36.65 223.81
38.00 224.24
39.33 224.68
40.69 225.16
42.03 225.65
43.39 226.18
44.79 226.75
46.29 227.39
47.69 228.00
49.05 228.63
50.39 229.28
51.75 229.96
53.10 230.66
54.48 231.41
55.92 232.22
57.48 233.12
58.86 233.98
60.19 234.88
61.45 235.80
62.80 236.86
64.22 238.10
65.87 239.62
68.28 241.97
69.86 243.55
69.86 246.28

Fattore di sicurezza (FS) 1.8976 - N.6 -- X Y Lambda= 0.2746
8.82 226.59
13.21 223.91
15.22 222.75
16.52 222.10
17.54 221.69
18.61 221.40
19.52 221.24
20.55 221.17
21.69 221.18
23.18 221.27
24.46 221.38
25.63 221.51
26.75 221.66
27.88 221.85
28.96 222.06
30.08 222.30
31.22 222.58
32.45 222.91
33.65 223.23
34.82 223.55
35.98 223.87

37.13 224.19
38.29 224.52
39.45 224.85
40.63 225.19
41.83 225.54
42.98 225.89
44.11 226.25
45.23 226.62
46.37 227.02
47.51 227.43
48.66 227.87
49.86 228.34
51.13 228.86
52.29 229.36
53.41 229.89
54.48 230.43
55.61 231.05
56.69 231.68
57.80 232.37
58.94 233.11
60.17 233.96
61.37 234.79
62.55 235.59
63.72 236.39
64.87 237.17
66.03 237.96
67.19 238.74
68.36 239.53
69.54 240.33
70.69 241.09
71.83 241.83
72.97 242.55
74.11 243.27
75.39 244.04
76.54 244.73
76.54 247.48

Fattore di sicurezza (FS) 1.8977 - N.7 -- X Y Lambda= 0.2722
5.29 225.74
9.69 223.18
11.66 222.10
12.89 221.54
13.84 221.22
14.85 221.03
15.69 220.98
16.66 221.04
17.77 221.21
19.26 221.53
20.55 221.79
21.72 222.00
22.83 222.17
23.94 222.32
25.02 222.43
26.15 222.53
27.33 222.61
28.62 222.67
29.76 222.76
30.85 222.89
31.88 223.05
32.97 223.26
34.00 223.50
35.07 223.80
36.18 224.14
37.42 224.56
38.61 224.97

39.77 225.38
40.91 225.77
42.04 226.17
43.17 226.57
44.31 226.97
45.46 227.38
46.62 227.79
47.75 228.20
48.86 228.63
49.96 229.06
51.08 229.52
52.18 229.99
53.30 230.47
54.44 230.98
55.62 231.52
56.76 232.06
57.89 232.60
59.01 233.15
60.13 233.70
61.26 234.28
62.41 234.87
63.61 235.50
64.89 236.18
65.99 236.83
67.06 237.52
68.06 238.25
69.15 239.11
70.29 240.12
71.63 241.40
73.60 243.41
74.73 244.60
74.73 247.16

Fattore di sicurezza (FS) 1.8985 - N.8 -- X Y Lambda= 0.2772
10.75 227.13
14.52 224.91
16.25 223.94
17.38 223.40
18.29 223.04
19.21 222.79
20.02 222.64
20.92 222.56
21.91 222.54
23.18 222.59
24.28 222.65
25.29 222.74
26.25 222.85
27.23 222.99
28.16 223.15
29.12 223.34
30.11 223.56
31.18 223.83
32.22 224.09
33.23 224.35
34.23 224.61
35.23 224.87
36.23 225.14
37.23 225.41
38.26 225.70
39.30 225.99
40.30 226.28
41.27 226.59
42.23 226.91
43.22 227.25
44.18 227.61

45.17 228.00
46.18 228.41
47.26 228.87
48.27 229.31
49.26 229.77
50.22 230.23
51.21 230.73
52.17 231.23
53.16 231.76
54.16 232.32
55.22 232.93
56.24 233.53
57.23 234.13
58.22 234.74
59.21 235.36
60.19 235.99
61.18 236.64
62.20 237.32
63.25 238.03
64.26 238.73
65.24 239.44
66.21 240.16
67.20 240.91
68.28 241.77
69.51 242.77
70.50 243.60
70.50 246.41

Fattore di sicurezza (FS) 1.8994 - N.9 -- X Y Lambda= 0.2775
3.18 225.47
6.94 223.65
8.71 222.83
9.90 222.35
10.89 222.02
11.86 221.77
12.74 221.60
13.69 221.48
14.71 221.41
15.94 221.38
17.04 221.37
18.07 221.38
19.06 221.42
20.06 221.48
21.03 221.56
22.03 221.66
23.06 221.79
24.18 221.95
25.22 222.11
26.24 222.29
27.24 222.47
28.25 222.67
29.24 222.88
30.25 223.11
31.27 223.36
32.33 223.63
33.38 223.90
34.40 224.17
35.43 224.45
36.44 224.72
37.47 225.01
38.50 225.30
39.56 225.60
40.65 225.91
41.67 226.23
42.66 226.56

43.62 226.92
44.62 227.31
45.59 227.72
46.58 228.16
47.61 228.65
48.71 229.20
49.76 229.74
50.79 230.27
51.80 230.81
52.82 231.35
53.83 231.91
54.85 232.48
55.88 233.07
56.95 233.69
57.98 234.30
58.99 234.91
59.99 235.54
61.00 236.18
62.01 236.83
63.02 237.51
64.04 238.20
65.10 238.93
66.14 239.66
67.16 240.38
68.18 241.10
69.20 241.84
70.34 242.67
71.61 243.61
72.18 244.03
72.18 246.71

Fattore di sicurezza (FS) 1.9010 - N.10 -- X Y Lambda= 0.2837
8.60 226.53
12.99 224.10
14.95 223.09
16.19 222.55
17.14 222.25
18.15 222.08
18.99 222.04
19.96 222.11
21.05 222.29
22.48 222.61
23.77 222.89
24.97 223.15
26.12 223.39
27.25 223.61
28.38 223.83
29.53 224.04
30.72 224.25
31.97 224.47
33.08 224.70
34.15 224.97
35.18 225.26
36.28 225.62
37.31 226.00
38.38 226.44
39.49 226.94
40.71 227.53
41.91 228.10
43.06 228.66
44.21 229.21
45.34 229.76
46.48 230.31
47.62 230.86
48.77 231.42

49.93	231.98
51.05	232.55
52.16	233.12
53.26	233.70
54.38	234.31
55.49	234.93
56.61	235.58
57.76	236.26
58.97	237.00
60.11	237.72
61.22	238.44
62.31	239.18
63.42	239.97
64.64	240.87
66.02	241.94
67.54	243.14
67.54	245.82

---------- ANALISI DEFICIT DI RESISTENZA ----------
DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *
Analisi Deficit in riferimento a FS(progetto) = 1.100

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	1.893	7150.5	3777.0	2995.8	Surplus
2	1.894	7440.5	3928.3	3119.3	Surplus
3	1.896	8167.7	4308.7	3428.2	Surplus
4	1.897	7051.3	3716.7	2962.9	Surplus
5	1.897	7338.1	3867.6	3083.7	Surplus
6	1.898	7611.6	4011.2	3199.3	Surplus
7	1.898	7631.8	4021.7	3207.9	Surplus
8	1.899	6212.4	3272.3	2612.9	Surplus
9	1.899	7099.9	3737.9	2988.2	Surplus
10	1.901	5657.0	2975.8	2383.5	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 2383.5

Note: FTR --> Forza totale Resistente lungo la superficie
di scivolamento
FTA --> Forza totale Agente lungo la superficie
di scivolamento

IMPORTANTE! : Il Deficit o il Surplus di resistenza viene espresso in kN
per metro di LARGHEZZA rispetto al fronte della scarpata

TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (°)	W (kN/m)	ru (-)	U (kPa)	phi' (°)	(c',Cu) (kPa)
5.523	0.561	-26.93	2.29	0.00	0.00	26.00	19.50
6.084	0.561	-26.93	6.86	0.00	0.00	26.00	19.50
6.646	0.354	-26.93	6.68	0.00	0.00	26.00	19.50
7.000	0.561	-26.93	14.55	0.00	0.00	26.00	19.50
7.561	0.561	-26.93	19.59	0.00	0.00	26.00	19.50
8.123	0.561	-26.93	24.62	0.00	0.00	26.00	19.50
8.684	0.561	-26.93	29.66	0.00	0.00	26.00	19.50
9.246	0.561	-26.93	34.69	0.00	0.00	26.00	19.50
9.807	0.561	-26.93	39.73	0.00	0.00	26.00	19.50
10.369	0.058	-26.93	4.42	0.00	0.00	26.00	19.50
10.427	0.561	-25.48	45.18	0.00	0.00	26.00	19.50
10.989	0.561	-25.48	50.01	0.00	0.00	26.00	19.50
11.550	0.561	-25.48	54.85	0.00	0.00	26.00	19.50

12.112	0.541	-25.48	57.42	0.00	0.00	26.00	19.50
12.653	0.561	-21.87	64.09	0.00	0.00	26.00	19.50
13.214	0.561	-21.87	68.44	0.00	0.00	26.00	19.50
13.776	0.311	-21.87	39.74	0.00	0.00	26.00	19.50
14.086	0.561	-16.72	74.88	0.00	0.00	26.00	19.50
14.648	0.561	-16.72	78.58	0.00	0.00	26.00	19.50
15.209	0.009	-16.72	1.32	0.00	0.00	26.00	19.50
15.218	0.561	-9.92	81.94	0.00	0.00	26.00	19.50
15.780	0.220	-9.92	32.91	0.00	0.00	26.00	19.50
16.000	0.395	-9.92	60.51	0.00	0.00	26.00	19.50
16.395	0.561	-4.41	88.96	0.00	0.00	26.00	19.50
16.957	0.043	-4.41	6.96	0.00	0.00	26.00	19.50
17.000	0.395	-4.41	64.58	0.00	0.00	26.00	19.50
17.395	0.561	1.35	93.77	0.00	0.00	26.00	19.50
17.956	0.044	1.35	7.36	0.00	0.00	26.00	19.50
18.000	0.521	1.35	88.62	0.00	0.00	26.00	19.50
18.521	0.479	5.90	82.39	0.00	0.00	26.00	19.50
19.000	0.561	5.90	97.74	0.00	0.00	26.00	19.50
19.561	0.194	5.90	34.23	0.00	0.00	26.00	19.50
19.756	0.561	9.00	99.90	0.00	0.00	26.00	19.50
20.317	0.561	9.00	101.29	0.00	0.00	26.00	19.50
20.879	0.450	9.00	82.14	0.00	0.00	26.00	19.50
21.329	0.561	9.19	103.78	0.00	0.00	26.00	19.50
21.890	0.561	9.19	105.14	0.00	0.00	26.00	19.50
22.451	0.321	9.19	60.76	0.00	0.00	26.00	19.50
22.773	0.561	9.40	107.28	0.00	0.00	26.00	19.50
23.334	0.561	9.40	108.62	0.00	0.00	26.00	19.50
23.896	0.232	9.40	45.18	0.00	0.00	26.00	19.50
24.127	0.373	9.62	73.23	0.00	0.00	26.00	19.50
24.500	0.561	9.62	111.28	0.00	0.00	26.00	19.50
25.061	0.381	9.62	76.06	0.00	0.00	26.00	19.50
25.442	0.561	9.85	113.15	0.00	0.00	26.00	19.50
26.003	0.561	9.85	114.25	0.00	0.00	26.00	19.50
26.565	0.155	9.85	31.80	0.00	0.00	26.00	19.50
26.720	0.561	10.07	115.64	0.00	0.00	26.00	19.50
27.282	0.561	10.07	116.72	0.00	0.00	26.00	19.50
27.843	0.162	10.07	33.93	0.00	0.00	26.00	19.50
28.006	0.561	10.29	118.09	0.00	0.00	26.00	19.50
28.567	0.561	10.29	119.14	0.00	0.00	26.00	19.50
29.128	0.172	10.29	36.66	0.00	0.00	26.00	19.50
29.300	0.561	10.50	120.49	0.00	0.00	26.00	19.50
29.862	0.378	10.50	81.76	0.00	0.00	26.00	19.50
30.240	0.378	10.50	82.22	0.00	0.00	26.00	19.50
30.618	0.561	10.70	123.32	0.00	0.00	26.00	19.50
31.179	0.561	10.70	124.70	0.00	0.00	26.00	19.50
31.741	0.227	10.70	50.72	0.00	0.00	26.00	19.50
31.967	0.033	11.65	7.31	0.00	0.00	26.00	19.50
32.000	0.561	11.65	126.45	0.00	0.00	26.00	19.50
32.561	0.561	11.65	127.32	0.00	0.00	26.00	19.50
33.123	0.122	11.65	27.67	0.00	0.00	26.00	19.50
33.244	0.561	12.67	128.31	0.00	0.00	26.00	19.50
33.806	0.561	12.67	129.06	0.00	0.00	26.00	19.50
34.367	0.131	12.67	30.17	0.00	0.00	26.00	19.50
34.498	0.561	13.73	129.92	0.00	0.00	26.00	19.50
35.060	0.561	13.73	130.54	0.00	0.00	26.00	19.50
35.621	0.107	13.73	24.93	0.00	0.00	26.00	19.50
35.728	0.561	14.78	131.22	0.00	0.00	26.00	19.50
36.290	0.561	14.78	131.72	0.00	0.00	26.00	19.50
36.851	0.141	14.78	33.04	0.00	0.00	26.00	19.50
36.992	0.561	15.83	132.28	0.00	0.00	26.00	19.50
37.553	0.561	15.83	132.65	0.00	0.00	26.00	19.50
38.115	0.116	15.83	27.34	0.00	0.00	26.00	19.50
38.230	0.561	16.87	133.04	0.00	0.00	26.00	19.50
38.792	0.561	16.87	133.28	0.00	0.00	26.00	19.50
39.353	0.147	16.87	35.05	0.00	0.00	26.00	19.50
39.500	0.290	17.84	68.84	0.00	0.00	26.00	19.50

39.790	0.561	17.84	133.82	0.00	0.00	26.00	19.50
40.351	0.461	17.84	110.19	0.00	0.00	26.00	19.50
40.812	0.561	18.71	134.81	0.00	0.00	26.00	19.50
41.373	0.561	18.71	135.28	0.00	0.00	26.00	19.50
41.935	0.285	18.71	68.91	0.00	0.00	26.00	19.50
42.220	0.561	19.80	135.91	0.00	0.00	26.00	19.50
42.782	0.218	19.80	52.93	0.00	0.00	26.00	19.50
43.000	0.521	19.80	126.16	0.00	0.00	26.00	19.50
43.521	0.561	21.01	135.12	0.00	0.00	26.00	19.50
44.083	0.117	21.01	28.10	0.00	0.00	26.00	19.50
44.200	0.561	21.01	134.45	0.00	0.00	26.00	19.50
44.761	0.021	21.01	5.00	0.00	0.00	26.00	19.50
44.782	0.561	22.27	134.25	0.00	0.00	26.00	19.50
45.344	0.561	22.27	133.97	0.00	0.00	26.00	19.50
45.905	0.103	22.27	24.48	0.00	0.00	26.00	19.50
46.008	0.561	23.51	133.55	0.00	0.00	26.00	19.50
46.570	0.561	23.51	133.11	0.00	0.00	26.00	19.50
47.131	0.137	23.51	32.49	0.00	0.00	26.00	19.50
47.268	0.561	24.73	132.48	0.00	0.00	26.00	19.50
47.830	0.170	24.73	40.04	0.00	0.00	26.00	19.50
48.000	0.495	24.73	116.16	0.00	0.00	26.00	19.50
48.495	0.561	25.92	131.39	0.00	0.00	26.00	19.50
49.056	0.561	25.92	130.86	0.00	0.00	26.00	19.50
49.618	0.137	25.92	31.77	0.00	0.00	26.00	19.50
49.754	0.561	27.02	130.12	0.00	0.00	26.00	19.50
50.316	0.561	27.02	129.43	0.00	0.00	26.00	19.50
50.877	0.175	27.02	40.26	0.00	0.00	26.00	19.50
51.053	0.561	27.99	128.45	0.00	0.00	26.00	19.50
51.614	0.386	27.99	87.81	0.00	0.00	26.00	19.50
52.000	0.449	27.99	101.50	0.00	0.00	26.00	19.50
52.449	0.561	28.79	125.59	0.00	0.00	26.00	19.50
53.011	0.561	28.79	124.08	0.00	0.00	26.00	19.50
53.572	0.189	28.79	41.39	0.00	0.00	26.00	19.50
53.761	0.561	29.65	121.99	0.00	0.00	26.00	19.50
54.322	0.561	29.65	120.35	0.00	0.00	26.00	19.50
54.884	0.153	29.65	32.43	0.00	0.00	26.00	19.50
55.036	0.561	30.54	118.19	0.00	0.00	26.00	19.50
55.598	0.561	30.54	116.42	0.00	0.00	26.00	19.50
56.159	0.125	30.54	25.68	0.00	0.00	26.00	19.50
56.284	0.561	31.42	114.18	0.00	0.00	26.00	19.50
56.846	0.561	31.42	112.27	0.00	0.00	26.00	19.50
57.407	0.144	31.42	28.47	0.00	0.00	26.00	19.50
57.551	0.449	32.26	87.93	0.00	0.00	26.00	19.50
58.000	0.561	32.26	108.00	0.00	0.00	26.00	19.50
58.561	0.231	32.26	43.78	0.00	0.00	26.00	19.50
58.793	0.561	33.10	104.56	0.00	0.00	26.00	19.50
59.354	0.561	33.10	102.04	0.00	0.00	26.00	19.50
59.916	0.137	33.10	24.51	0.00	0.00	26.00	19.50
60.053	0.561	33.89	98.84	0.00	0.00	26.00	19.50
60.614	0.561	33.89	96.19	0.00	0.00	26.00	19.50
61.176	0.157	33.89	26.43	0.00	0.00	26.00	19.50
61.333	0.561	34.61	92.74	0.00	0.00	26.00	19.50
61.894	0.561	34.61	89.97	0.00	0.00	26.00	19.50
62.456	0.213	34.61	33.33	0.00	0.00	26.00	19.50
62.668	0.561	34.79	86.13	0.00	0.00	26.00	19.50
63.230	0.561	34.79	83.34	0.00	0.00	26.00	19.50
63.791	0.189	34.79	27.39	0.00	0.00	26.00	19.50
63.980	0.561	34.97	79.58	0.00	0.00	26.00	19.50
64.541	0.459	34.97	62.91	0.00	0.00	26.00	19.50
65.000	0.273	34.97	36.49	0.00	0.00	26.00	19.50
65.273	0.561	35.15	72.69	0.00	0.00	26.00	19.50
65.834	0.561	35.15	69.45	0.00	0.00	26.00	19.50
66.396	0.163	35.15	19.55	0.00	0.00	26.00	19.50
66.559	0.561	35.33	65.26	0.00	0.00	26.00	19.50
67.120	0.561	35.33	62.00	0.00	0.00	26.00	19.50
67.682	0.156	35.33	16.66	0.00	0.00	26.00	19.50

67.838	0.561	35.56	57.81	0.00	0.00	26.00	19.50
68.399	0.561	35.56	54.50	0.00	0.00	26.00	19.50
68.961	0.316	35.56	29.22	0.00	0.00	26.00	19.50
69.277	0.561	35.75	49.33	0.00	0.00	26.00	19.50
69.838	0.561	35.75	45.99	0.00	0.00	26.00	19.50
70.400	0.100	35.75	7.87	0.00	0.00	26.00	19.50
70.500	0.377	35.75	28.56	0.00	0.00	26.00	19.50
70.877	0.561	35.93	39.64	0.00	0.00	26.00	19.50
71.438	0.561	35.93	36.13	0.00	0.00	26.00	19.50
72.000	0.561	35.93	32.62	0.00	0.00	26.00	19.50

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
alpha(°) : Angolo pendenza base concio
W(kN/m) : Forza peso concio
ru(-) : Coefficiente locale pressione interstiziale
U(kPa) : Pressione totale dei pori base concio
phi'(°) : Angolo di attrito efficace base concio
c'/Cu (kPa) : Coesione efficace o Resistenza al taglio in condizioni non drenate
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TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	ht (m)	yt (m)	yt' (--)	E(x) (kN/m)	T(x) (kN/m)	E' (kN)	rho(x) (--)	FS_qFEM (--)	FS_srmFEM (--)	
5.523	0.000	225.787	-0.342	0.0000000000E+000	0.0000000000E+000	4.6575282168E-001	0.063	26.684	23.582	
6.084	0.100	225.602	-0.342	1.4208506265E+000	2.3796644768E-003	4.5953800407E+000	0.063	26.684	23.582	
6.646	0.186	225.403	-0.318	5.1603850660E+000	5.3333337817E-002	8.2164729900E+000	0.063	15.467	14.469	
7.000	0.274	225.311	-0.268	8.4197463721E+000	1.5960390485E-001	1.1493676176E+001	0.063	14.548	13.730	
7.561	0.406	225.157	-0.284	1.6915124213E+001	7.6943345380E-001	1.9290493889E+001	0.063	14.979	12.312	
8.123	0.526	224.992	-0.292	3.0082019285E+001	2.4773768408E+000	3.0388608863E+001	0.090	16.465	9.763	
8.684	0.649	224.830	-0.264	5.1040032700E+001	5.3748997507E+000	4.2725693386E+001	0.143	17.760	7.697	
9.246	0.799	224.695	-0.229	7.8060865023E+001	9.3481836668E+000	5.1138647637E+001	0.190	18.051	6.388	
9.807	0.963	224.573	-0.222	1.0846621100E+002	1.4177079617E+001	5.8776390627E+001	0.231	17.229	5.560	
10.369	1.121	224.446	-0.225	1.4406385188E+002	2.0141887026E+001	6.6489265843E+001	0.268	15.828	4.941	
10.427	1.138	224.434	-0.208	1.4796071350E+002	2.0812767889E+001	6.7724270582E+001	0.271	15.656	4.886	
10.989	1.289	224.317	-0.202	1.9092687569E+002	2.8539616150E+001	8.4892883397E+001	0.310	13.754	4.397	
11.550	1.447	224.207	-0.190	2.4329123324E+002	3.8853397182E+001	9.9786462661E+001	0.353	11.442	3.982	
12.112	1.611	224.104	-0.176	3.0298215015E+002	5.1471226004E+001	1.1057997255E+002	0.397	9.296	3.646	
12.653	1.779	224.014	-0.153	3.6503563968E+002	6.5449232813E+001	1.1583337386E+002	0.437	7.568	3.391	
13.214	1.926	223.935	-0.125	4.3073729606E+002	8.1147371165E+001	1.1689109378E+002	0.475	6.242	3.189	
13.776	2.089	223.873	-0.100	4.9629857100E+002	9.7754298548E+001	1.1295523425E+002	0.510	5.226	3.033	
14.086	2.188	223.847	-0.063	5.3073274420E+002	1.0693179304E+002	1.0837493823E+002	0.528	4.783	2.964	
14.648	2.327	223.818	-0.035	5.8907405681E+002	1.2327842548E+002	9.4284411455E+001	0.558	4.145	2.863	
15.209	2.487	223.809	-0.016	6.3660948660E+002	1.3749255659E+002	7.5724721119E+001	0.581	3.701	2.792	
15.218	2.489	223.809	0.015	6.3730586135E+002	1.3770874690E+002	7.5550764610E+001	0.582	3.695	2.791	
15.780	2.596	223.817	0.022	6.7879173029E+002	1.5097945147E+002	7.1839374667E+001	0.604	3.358	2.735	
16.000	2.643	223.826	0.048	6.9442835361E+002	1.5626485613E+002	6.8915323344E+001	0.613	3.243	2.714	
16.395	2.733	223.846	0.063	7.2017628843E+002	1.6523295653E+002	6.2748707349E+001	0.625	3.068	2.680	
16.957	2.816	223.887	0.073	7.5353051887E+002	1.7751749251E+002	5.6271242551E+001	0.644	2.868	2.636	
17.000	2.824	223.890	0.095	7.5594190200E+002	1.7844842642E+002	5.5845834386E+001	0.645	2.854	2.632	
17.395	2.892	223.928	0.109	7.7732620925E+002	1.8693996927E+002	5.2774345840E+001	0.659	2.741	2.602	
17.956	2.945	223.994	0.119	8.0586284237E+002	1.9906949850E+002	4.7871582363E+001	0.679	2.606	2.558	
18.000	2.950	224.000	0.142	8.0793939941E+002	2.0000551106E+002	4.7346131825E+001	0.681	2.597	2.555	
18.521	3.012	224.074	0.161	8.3075104430E+002	2.1078202516E+002	4.3944775437E+001	0.701	2.504	2.515	
19.000	3.049	224.161	0.193	8.5187320859E+002	2.2157224218E+002	4.2332618352E+001	0.722	2.424	2.474	
19.561	3.105	224.276	0.206	8.7449809844E+002	2.3400807277E+002	3.7862992793E+001	0.745	2.348	2.426	
19.756	3.127	224.317	0.235	8.8169188880E+002	2.3816605721E+002	3.6415052545E+001	0.752	2.325	2.410	
20.317	3.174	224.453	0.258	9.0115468018E+002	2.5014155648E+002	3.3890757098E+001	0.775	2.266	2.363	
20.879	3.239	224.607	0.275	9.1974953697E+002	2.6212760446E+002	3.1233356152E+001	0.797	2.211	2.316	
21.329	3.292	224.732	0.280	9.3311945611E+002	2.7091948390E+002	2.8622003678E+001	0.813	2.175	2.282	
21.890	3.360	224.890	0.275	9.4841789558E+002	2.8095441219E+002	2.5506113623E+001	0.830	2.134	2.244	
22.451	3.420	225.041	0.268	9.6176156333E+002	2.8946336830E+002	2.3145223021E+001	0.843	2.100	2.213	

22.773	3.454	225.127	0.271	9.6908118567E+002	2.9392572499E+002	2.2683382528E+001	0.850	2.083	2.198
23.334	3.514	225.279	0.266	9.8171220723E+002	3.0130691691E+002	2.1853103937E+001	0.860	2.056	2.172
23.896	3.567	225.426	0.260	9.9362114324E+002	3.0796201689E+002	2.0866487690E+001	0.869	2.034	2.150
24.127	3.588	225.485	0.255	9.9841937646E+002	3.1052133202E+002	2.0520122277E+001	0.872	2.026	2.142
24.500	3.619	225.580	0.253	1.0059475689E+003	3.1449470189E+002	2.0140434452E+001	0.876	2.014	2.130
25.061	3.666	225.722	0.258	1.0172136133E+003	3.2037031408E+002	2.0534187727E+001	0.883	1.999	2.112
25.442	3.703	225.823	0.263	1.0251487549E+003	3.2453832541E+002	2.0627671680E+001	0.888	1.989	2.100
26.003	3.752	225.970	0.264	1.0365447334E+003	3.3058738864E+002	2.0343002006E+001	0.895	1.976	2.083
26.565	3.804	226.119	0.268	1.0479929425E+003	3.3681513082E+002	2.0578377695E+001	0.902	1.963	2.065
26.720	3.820	226.162	0.262	1.0511973320E+003	3.3860500094E+002	2.0365082543E+001	0.904	1.960	2.060
27.282	3.866	226.307	0.259	1.0620928593E+003	3.4479585901E+002	1.9272376312E+001	0.911	1.949	2.043
27.843	3.912	226.453	0.266	1.0728392597E+003	3.5105180697E+002	2.0459666094E+001	0.919	1.938	2.026
28.006	3.930	226.500	0.287	1.0762211208E+003	3.5305392474E+002	2.0695232416E+001	0.921	1.935	2.021
28.567	3.988	226.660	0.278	1.0875574438E+003	3.5989825776E+002	1.9429843480E+001	0.930	1.924	2.002
29.128	4.039	226.813	0.274	1.0980398764E+003	3.6630640374E+002	1.8797378465E+001	0.937	1.914	1.984
29.300	4.056	226.861	0.279	1.1012756799E+003	3.6828827027E+002	1.8690977513E+001	0.940	1.911	1.979
29.862	4.108	227.017	0.276	1.1115031056E+003	3.7455742680E+002	1.7782259536E+001	0.947	1.900	1.961
30.240	4.141	227.120	0.284	1.1181194259E+003	3.7860534288E+002	1.7805323071E+001	0.952	1.894	1.950
30.618	4.182	227.231	0.282	1.1249662886E+003	3.8277534529E+002	1.7284912150E+001	0.956	1.886	1.938
31.179	4.230	227.385	0.272	1.1339748149E+003	3.8822145777E+002	1.5521327474E+001	0.961	1.876	1.922
31.741	4.276	227.537	0.276	1.1423959736E+003	3.9329775012E+002	1.5047790569E+001	0.966	1.866	1.906
31.967	4.299	227.603	0.289	1.1458104855E+003	3.9537155413E+002	1.3857665624E+001	0.967	1.861	1.900
32.000	4.301	227.612	0.266	1.1462561952E+003	3.9564193248E+002	1.3625438396E+001	0.968	1.860	1.899
32.561	4.334	227.761	0.272	1.1533423793E+003	3.9996805084E+002	1.2288024452E+001	0.972	1.849	1.885
33.123	4.375	227.918	0.282	1.1600550404E+003	4.0417447486E+002	1.1516228282E+001	0.976	1.837	1.870
33.244	4.386	227.953	0.280	1.1614431462E+003	4.0507068644E+002	1.1119355108E+001	0.977	1.834	1.867
33.806	4.415	228.109	0.284	1.1669035331E+003	4.0872162620E+002	9.1126704470E+000	0.981	1.822	1.854
34.367	4.452	228.272	0.290	1.1716762256E+003	4.1213896740E+002	7.3969772469E+000	0.985	1.809	1.840
34.498	4.461	228.310	0.294	1.1726099881E+003	4.1286586264E+002	6.9535846200E+000	0.986	1.806	1.837
35.060	4.489	228.476	0.303	1.1760648897E+003	4.1578182429E+002	5.4838492768E+000	0.989	1.792	1.824
35.621	4.527	228.651	0.316	1.1787680803E+003	4.1847061793E+002	4.1853137882E+000	0.992	1.779	1.810
35.728	4.537	228.687	0.325	1.1792028206E+003	4.1897257124E+002	3.7427229278E+000	0.993	1.776	1.808
36.290	4.570	228.868	0.316	1.1803526972E+003	4.2103430406E+002	1.0511609651E+000	0.996	1.762	1.795
36.851	4.596	229.042	0.312	1.1803832225E+003	4.2251672759E+002	-8.4265776488E-001	0.999	1.749	1.783
36.992	4.603	229.087	0.306	1.1802332834E+003	4.2282070314E+002	-1.2745107362E+000	0.999	1.746	1.780
37.553	4.614	229.257	0.301	1.1790523843E+003	4.2367501405E+002	-2.8562830077E+000	1.001	1.734	1.769
38.115	4.623	229.425	0.303	1.1770258185E+003	4.2408474292E+002	-4.7702169438E+000	1.003	1.723	1.758
38.230	4.628	229.462	0.316	1.1764471063E+003	4.2410612092E+002	-5.1756010160E+000	1.003	1.721	1.756
38.792	4.634	229.639	0.325	1.1730867532E+003	4.2389210558E+002	-7.0760668207E+000	1.004	1.710	1.745
39.353	4.652	229.827	0.335	1.1685010323E+003	4.2311248874E+002	-8.6670076264E+000	1.004	1.699	1.734
39.500	4.656	229.876	0.346	1.1672034797E+003	4.2285344385E+002	-9.2686013067E+000	1.004	1.696	1.732
39.790	4.666	229.979	0.350	1.1642526288E+003	4.2217817541E+002	-1.0643630212E+001	1.004	1.691	1.726
40.351	4.680	230.174	0.361	1.1577846790E+003	4.2042626306E+002	-1.2839033210E+001	1.003	1.681	1.715
40.812	4.705	230.347	0.378	1.1513735091E+003	4.1851002444E+002	-1.4991714360E+001	1.001	1.672	1.706
41.373	4.728	230.560	0.373	1.1422232703E+003	4.1553729744E+002	-1.6712327072E+001	0.999	1.662	1.695
41.935	4.744	230.766	0.368	1.1326063903E+003	4.1226579567E+002	-1.9266581551E+001	0.996	1.652	1.685
42.220	4.752	230.871	0.376	1.1268000021E+003	4.1021770605E+002	-1.9980943992E+001	0.994	1.646	1.679
42.782	4.764	231.085	0.381	1.1159926065E+003	4.0629181889E+002	-1.9140365176E+001	0.991	1.637	1.671
43.000	4.768	231.168	0.335	1.1118236513E+003	4.0475339314E+002	-2.0024113325E+001	0.989	1.633	1.668
43.521	4.745	231.332	0.323	1.1002321654E+003	4.0040761031E+002	-2.2008512825E+001	0.987	1.624	1.660
44.083	4.715	231.518	0.330	1.0880117925E+003	3.9573403194E+002	-2.3229454785E+001	0.985	1.616	1.654
44.200	4.709	231.557	0.369	1.0852533783E+003	3.9467070458E+002	-2.3592168737E+001	0.985	1.614	1.653
44.761	4.705	231.768	0.377	1.0718537230E+003	3.8947796463E+002	-2.4259552262E+001	0.980	1.606	1.648
44.782	4.705	231.776	0.391	1.0713461507E+003	3.8928081532E+002	-2.4299057900E+001	0.980	1.606	1.648
45.344	4.695	231.996	0.379	1.0573286954E+003	3.8381576185E+002	-2.6398602227E+001	0.976	1.598	1.643
45.905	4.671	232.202	0.370	1.0417018228E+003	3.7767809031E+002	-3.0166459641E+001	0.971	1.590	1.638
46.008	4.669	232.242	0.377	1.0385589210E+003	3.7643885797E+002	-3.0544431673E+001	0.970	1.588	1.637
46.570	4.634	232.452	0.384	1.0215599250E+003	3.6971247030E+002	-3.1522634215E+001	0.964	1.580	1.632
47.131	4.611	232.673	0.395	1.0031605580E+003	3.6238885422E+002	-3.3840642335E+001	0.958	1.572	1.626
47.268	4.606	232.728	0.408	9.9847783289E+002	3.6051603885E+002	-3.4371334535E+001	0.956	1.570	1.625
47.830	4.578	232.958	0.415	9.7856208855E+002	3.5253001527E+002	-3.7307774894E+001	0.950	1.562	1.619
48.000	4.573	233.031	0.436	9.7211772280E+002	3.4993494647E+002	-3.8202398237E+001	0.947	1.559	1.617
48.495	4.561	233.248	0.435	9.5273061756E+002	3.4208934895E+002	-3.9384778129E+001	0.939	1.552	1.611
49.056	4.531	233.490	0.426	9.3048913286E+002	3.3304663847E+002	-3.9514707378E+001	0.930	1.545	1.605
49.618	4.494	233.726	0.426	9.0835755069E+002	3.2399392141E+002	-4.2096951113E+001	0.921	1.538	1.598
49.754	4.489	233.788	0.445	9.0251487203E+002	3.2159017503E+002	-4.2820435570E+001	0.919	1.536	1.596

50.316	4.453	234.037	0.441	8.7830825709E+002	3.1157860660E+002	-4.3201880927E+001	0.908	1.529	1.590
50.877	4.412	234.283	0.447	8.5400129117E+002	3.0145249586E+002	-4.6750791351E+001	0.896	1.523	1.583
51.053	4.406	234.367	0.463	8.4561794618E+002	2.9793673784E+002	-4.7583105743E+001	0.892	1.522	1.581
51.614	4.365	234.624	0.458	8.1934659894E+002	2.8685806784E+002	-4.7140819966E+001	0.879	1.516	1.574
52.000	4.337	234.801	0.450	8.0106144849E+002	2.7911503569E+002	-4.7146817240E+001	0.869	1.513	1.570
52.449	4.297	235.000	0.448	7.8001215479E+002	2.7017558361E+002	-4.7513503582E+001	0.858	1.511	1.567
53.011	4.242	235.253	0.452	7.5288491365E+002	2.5864740406E+002	-4.8697782489E+001	0.844	1.508	1.562
53.572	4.188	235.508	0.462	7.2532694763E+002	2.4695963863E+002	-5.2112520474E+001	0.829	1.505	1.559
53.761	4.177	235.600	0.459	7.1529359458E+002	2.4272948280E+002	-5.2150833324E+001	0.823	1.505	1.558
54.322	4.109	235.852	0.451	6.8765015577E+002	2.3113738669E+002	-4.9591380277E+001	0.807	1.504	1.557
54.884	4.044	236.107	0.455	6.5960492119E+002	2.1949445503E+002	-5.0515977651E+001	0.790	1.504	1.557
55.036	4.028	236.177	0.437	6.5187066980E+002	2.1631718328E+002	-4.9997940628E+001	0.786	1.505	1.557
55.598	3.938	236.419	0.430	6.2518623013E+002	2.0547107393E+002	-4.7493900440E+001	0.770	1.506	1.559
56.159	3.848	236.660	0.431	5.9853736279E+002	1.9478970858E+002	-4.7918938683E+001	0.754	1.508	1.562
56.284	3.829	236.715	0.434	5.9253452008E+002	1.9241083874E+002	-4.7938852512E+001	0.750	1.509	1.563
56.846	3.729	236.958	0.439	5.6582425044E+002	1.8190349034E+002	-4.8050697136E+001	0.734	1.512	1.567
57.407	3.636	237.208	0.452	5.3857595785E+002	1.7129762022E+002	-5.1727347389E+001	0.716	1.516	1.572
57.551	3.617	237.277	0.454	5.3101477411E+002	1.6837386464E+002	-5.1495465721E+001	0.711	1.517	1.573
58.000	3.534	237.477	0.445	5.0937751647E+002	1.6007749341E+002	-4.8081528453E+001	0.697	1.521	1.578
58.561	3.429	237.727	0.458	4.8247591310E+002	1.4985173255E+002	-5.0771420174E+001	0.679	1.526	1.584
58.793	3.396	237.839	0.472	4.7046383644E+002	1.4532394728E+002	-5.1111760464E+001	0.671	1.529	1.587
59.354	3.291	238.100	0.462	4.4290712478E+002	1.3500839154E+002	-4.8445743975E+001	0.652	1.535	1.593
59.916	3.183	238.358	0.470	4.1606165610E+002	1.2505832786E+002	-5.1558804407E+001	0.631	1.541	1.599
60.053	3.164	238.429	0.487	4.0887363985E+002	1.2242201063E+002	-5.1681826587E+001	0.626	1.543	1.601
60.614	3.057	238.698	0.482	3.8167597744E+002	1.1252636631E+002	-4.8058665879E+001	0.604	1.549	1.606
61.176	2.951	238.970	0.493	3.5490612911E+002	1.0292805305E+002	-5.0056619480E+001	0.582	1.556	1.611
61.333	2.928	239.053	0.502	3.4693929446E+002	1.0010772992E+002	-4.9891292190E+001	0.575	1.558	1.613
61.894	2.819	239.331	0.488	3.2059410465E+002	9.0903380009E+001	-4.5550116120E+001	0.551	1.566	1.617
62.456	2.701	239.601	0.495	2.9578876134E+002	8.2405277818E+001	-4.6723997712E+001	0.528	1.573	1.620
62.668	2.668	239.714	0.504	2.8565394068E+002	7.8992661896E+001	-4.6375859853E+001	0.518	1.576	1.621
63.230	2.555	239.991	0.494	2.6156048441E+002	7.1024069065E+001	-4.2379945808E+001	0.494	1.583	1.623
63.791	2.443	240.269	0.512	2.3806335241E+002	6.3386407871E+001	-4.5017259534E+001	0.469	1.591	1.624
63.980	2.418	240.375	0.511	2.2936354680E+002	6.0602296071E+001	-4.4349516751E+001	0.459	1.594	1.624
64.541	2.302	240.652	0.490	2.0735639447E+002	5.3704380622E+001	-3.8271663321E+001	0.433	1.601	1.624
65.000	2.204	240.875	0.497	1.9014910163E+002	4.8400765112E+001	-3.8260746179E+001	0.412	1.608	1.623
65.273	2.154	241.016	0.492	1.7958849840E+002	4.5183728414E+001	-3.7355834314E+001	0.399	1.611	1.623
65.834	2.029	241.286	0.481	1.6017067341E+002	3.9395146954E+001	-3.3922519346E+001	0.374	1.619	1.621
66.396	1.904	241.556	0.494	1.4149518279E+002	3.3910330512E+001	-3.4843573400E+001	0.347	1.626	1.618
66.559	1.876	241.643	0.515	1.3574309222E+002	3.2245656606E+001	-3.4560992390E+001	0.338	1.629	1.618
67.120	1.764	241.929	0.507	1.1777301090E+002	2.7141398500E+001	-3.1132351683E+001	0.309	1.637	1.614
67.682	1.650	242.213	0.507	1.0078299724E+002	2.2412423603E+001	-3.0013715680E+001	0.279	1.647	1.611
67.838	1.619	242.293	0.486	9.6107309081E+001	2.1126416228E+001	-2.9089044180E+001	0.270	1.649	1.611
68.399	1.486	242.561	0.488	8.1503425058E+001	1.7231566986E+001	-2.6594033198E+001	0.241	1.659	1.607
68.961	1.364	242.841	0.493	6.6243521855E+001	1.3137588308E+001	-2.5775062458E+001	0.203	1.670	1.604
69.277	1.292	242.994	0.503	5.8350081041E+001	1.1067124818E+001	-2.4810630531E+001	0.181	1.678	1.601
69.838	1.175	243.282	0.494	4.4594082609E+001	7.6017175813E+000	-2.2450307018E+001	0.140	1.693	1.599
70.400	1.038	243.549	0.472	3.3139493879E+001	4.9317182525E+000	-1.8573285559E+001	0.102	1.711	1.601
70.500	1.011	243.594	0.446	3.1308657247E+001	4.5302124002E+000	-1.7858005216E+001	0.095	1.715	1.603
70.877	0.907	243.761	0.492	2.5129547887E+001	3.3010986291E+000	-1.6400439296E+001	0.075	1.734	1.613
71.438	0.795	244.056	0.594	1.5919344063E+001	1.8923570455E+000	-1.6758523740E+001	0.063	1.818	1.685
72.000	0.760	244.428	0.594	6.3105525336E+000	6.0031831011E-001	-1.4176352158E+001	0.063	1.934	1.792

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio

ht(m) : Altezza linea di thrust da nodo sinistro base concio

yt(m) : coordinata Y linea di trust

yt'(-) : gradiente pendenza locale linea di trust

E(x)(kN/m) : Forza Normale interconcio

T(x)(kN/m) : Forza Tangenziale interconcio

E' (kN) : derivata Forza normale interconcio

Rho(x) (-) : fattore mobilizzazione resistenza al taglio verticale interconcio ZhU et al.(2003)

FS_qFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by qFEM

FS_srmFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by SRM Procedure

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TABELLA SFORZI DI TAGLIO DISTRIBUITI LUNGO SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	dl (m)	alpha (°)	TauStress (kPa)	TauF (kN/m)	TauStrength (kPa)	TauS (kN/m)
5.523	0.561	0.630	-26.935	-1.532	-0.965	21.112	13.296
6.084	0.561	0.630	-26.935	-4.596	-2.894	24.427	15.384
6.646	0.354	0.397	-26.935	-7.094	-2.820	27.289	10.846
7.000	0.561	0.630	-26.935	-9.747	-6.138	30.978	19.510
7.561	0.561	0.630	-26.935	-13.118	-8.262	36.770	23.157
8.123	0.561	0.630	-26.935	-16.490	-10.385	42.749	26.923
8.684	0.561	0.630	-26.935	-19.861	-12.509	48.494	30.541
9.246	0.561	0.630	-26.935	-23.233	-14.632	53.787	33.875
9.807	0.561	0.630	-26.935	-26.605	-16.755	59.656	37.571
10.369	0.058	0.065	-26.935	-28.466	-1.862	62.621	4.097
10.427	0.561	0.622	-25.479	-28.955	-18.009	67.606	42.049
10.989	0.561	0.622	-25.479	-32.052	-19.935	76.303	47.458
11.550	0.561	0.622	-25.479	-35.148	-21.861	84.429	52.512
12.112	0.541	0.599	-25.479	-38.189	-22.887	91.652	54.929
12.653	0.561	0.605	-21.871	-36.022	-21.794	98.166	59.393
13.214	0.561	0.605	-21.871	-38.467	-23.273	103.206	62.442
13.776	0.311	0.335	-21.871	-40.366	-13.512	105.732	35.393
14.086	0.561	0.586	-16.718	-32.460	-19.030	107.997	63.314
14.648	0.561	0.586	-16.718	-34.064	-19.970	107.298	62.904
15.209	0.009	0.010	-16.718	-34.880	-0.336	107.018	1.030
15.218	0.561	0.570	-9.919	-19.807	-11.290	107.766	61.426
15.780	0.220	0.223	-9.919	-20.295	-4.535	109.775	24.530
16.000	0.395	0.401	-9.919	-20.768	-8.338	110.374	44.314
16.395	0.561	0.563	-4.413	-6.642	-3.740	110.312	62.122
16.957	0.043	0.043	-4.413	-6.775	-0.292	111.703	4.822
17.000	0.395	0.396	-4.413	-6.855	-2.715	112.546	44.581
17.395	0.561	0.562	1.353	9.784	5.495	110.408	62.009
17.956	0.044	0.044	1.353	9.898	0.432	111.300	4.853
18.000	0.521	0.521	1.353	9.971	5.193	111.556	58.107
18.521	0.479	0.482	5.896	23.518	11.331	108.667	52.358
19.000	0.561	0.564	5.896	23.815	13.442	109.604	61.867
19.561	0.194	0.195	5.896	24.100	4.708	110.390	21.565
19.756	0.561	0.568	8.997	33.558	19.077	107.601	61.168
20.317	0.561	0.568	8.997	34.024	19.342	108.773	61.834
20.879	0.450	0.455	8.997	34.444	15.686	109.495	49.865
21.329	0.561	0.569	9.185	35.429	20.151	110.015	62.573
21.890	0.561	0.569	9.185	35.896	20.416	110.684	62.953
22.451	0.321	0.325	9.185	36.262	11.798	111.364	36.231
22.773	0.561	0.569	9.398	37.290	21.222	111.908	63.688
23.334	0.561	0.569	9.398	37.756	21.487	112.815	64.205
23.896	0.232	0.235	9.398	38.085	8.937	113.476	26.630
24.127	0.373	0.378	9.619	39.038	14.763	113.796	43.035
24.500	0.561	0.569	9.619	39.392	22.433	114.604	65.265
25.061	0.381	0.386	9.619	39.726	15.333	115.476	44.570
25.442	0.561	0.570	9.852	40.820	23.262	115.996	66.104
26.003	0.561	0.570	9.852	41.216	23.488	116.967	66.657
26.565	0.155	0.158	9.852	41.469	6.537	117.621	18.543
26.720	0.561	0.570	10.070	42.446	24.206	117.897	67.232
27.282	0.561	0.570	10.070	42.841	24.430	118.812	67.754
27.843	0.162	0.165	10.070	43.095	7.102	119.567	19.706
28.006	0.561	0.571	10.286	44.076	25.151	119.878	68.408
28.567	0.561	0.571	10.286	44.467	25.375	120.646	68.846
29.128	0.172	0.175	10.286	44.723	7.808	121.236	21.166
29.300	0.561	0.571	10.498	45.706	26.100	121.515	69.389
29.862	0.378	0.385	10.498	46.031	17.709	122.169	47.001
30.240	0.378	0.384	10.498	46.341	17.809	122.894	47.228
30.618	0.561	0.571	10.702	47.500	27.142	123.466	70.550
31.179	0.561	0.571	10.702	48.030	27.445	124.530	71.158
31.741	0.227	0.231	10.702	48.402	11.163	125.348	28.908
31.967	0.033	0.033	11.652	51.913	1.727	124.488	4.140
32.000	0.561	0.573	11.652	52.107	29.872	124.822	71.559

32.561	0.561	0.573	11.652	52.465	30.077	125.520	71.959
33.123	0.122	0.124	11.652	52.682	6.538	125.945	15.629
33.244	0.561	0.575	12.672	56.526	32.531	125.147	72.021
33.806	0.561	0.575	12.672	56.856	32.720	125.736	72.360
34.367	0.131	0.134	12.672	57.059	7.648	126.083	16.901
34.498	0.561	0.578	13.733	61.006	35.261	125.209	72.371
35.060	0.561	0.578	13.733	61.298	35.430	125.706	72.658
35.621	0.107	0.110	13.733	61.472	6.767	126.005	13.871
35.728	0.561	0.581	14.777	65.287	37.911	125.049	72.614
36.290	0.561	0.581	14.777	65.535	38.055	125.462	72.853
36.851	0.141	0.145	14.777	65.690	9.546	125.718	18.268
36.992	0.561	0.584	15.830	69.463	40.539	124.733	72.795
37.553	0.561	0.584	15.830	69.658	40.653	125.065	72.989
38.115	0.116	0.120	15.830	69.776	8.379	125.268	15.043
38.230	0.561	0.587	16.866	73.383	43.055	124.245	72.896
38.792	0.561	0.587	16.866	73.519	43.134	124.518	73.056
39.353	0.147	0.154	16.866	73.604	11.343	124.669	19.212
39.500	0.290	0.304	17.837	76.874	23.381	123.662	37.611
39.790	0.561	0.590	17.837	77.058	45.451	123.997	73.137
40.351	0.461	0.484	17.837	77.359	37.425	124.518	60.240
40.812	0.561	0.593	18.705	80.475	47.705	124.046	73.533
41.373	0.561	0.593	18.705	80.753	47.869	124.478	73.789
41.935	0.285	0.301	18.705	80.963	24.385	124.935	37.629
42.220	0.561	0.597	19.800	84.651	50.516	123.899	73.937
42.782	0.218	0.232	19.800	84.793	19.672	124.081	28.787
43.000	0.521	0.554	19.800	84.628	46.891	124.102	68.762
43.521	0.561	0.601	21.008	87.880	52.856	122.149	73.467
44.083	0.117	0.126	21.008	87.542	10.991	121.918	15.307
44.200	0.561	0.601	21.008	87.445	52.594	121.843	73.283
44.761	0.021	0.022	21.008	87.406	1.958	121.836	2.729
44.782	0.561	0.607	22.270	91.020	55.224	120.334	73.011
45.344	0.561	0.607	22.270	90.829	55.109	120.424	73.065
45.905	0.103	0.111	22.270	90.717	10.071	120.581	13.386
46.008	0.561	0.612	23.510	94.011	57.563	118.950	72.834
46.570	0.561	0.612	23.510	93.698	57.372	118.931	72.822
47.131	0.137	0.150	23.510	93.504	14.002	118.901	17.805
47.268	0.561	0.618	24.725	96.453	59.622	117.421	72.583
47.830	0.170	0.187	24.725	96.165	18.019	117.467	22.010
48.000	0.495	0.545	24.725	95.979	52.280	117.479	63.992
48.495	0.561	0.624	25.916	98.617	61.562	115.895	72.348
49.056	0.561	0.624	25.916	98.215	61.311	115.532	72.121
49.618	0.137	0.152	25.916	97.965	14.886	115.814	17.598
49.754	0.561	0.630	27.017	100.217	63.162	114.362	72.077
50.316	0.561	0.630	27.017	99.686	62.827	113.973	71.832
50.877	0.175	0.197	27.017	99.338	19.544	114.434	22.514
51.053	0.561	0.636	27.989	101.052	64.253	112.865	71.765
51.614	0.386	0.437	27.989	100.503	43.922	112.536	49.181
52.000	0.449	0.509	27.989	99.839	50.773	111.911	56.912
52.449	0.561	0.641	28.791	100.426	64.340	110.397	70.728
53.011	0.561	0.641	28.791	99.214	63.564	109.526	70.170
53.572	0.189	0.215	28.791	98.404	21.204	109.536	23.602
53.761	0.561	0.646	29.654	99.159	64.066	107.135	69.219
54.322	0.561	0.646	29.654	97.824	63.203	106.119	68.563
54.884	0.153	0.176	29.654	96.975	17.033	105.483	18.527
55.036	0.561	0.652	30.541	97.593	63.623	103.102	67.214
55.598	0.561	0.652	30.541	96.128	62.667	101.845	66.395
56.159	0.125	0.145	30.541	95.232	13.822	101.164	14.683
56.284	0.561	0.658	31.418	95.648	62.930	99.302	65.335
56.846	0.561	0.658	31.418	94.049	61.879	98.206	64.613
57.407	0.144	0.169	31.418	93.045	15.689	98.160	16.551
57.551	0.449	0.531	32.264	93.349	49.539	95.674	50.773
58.000	0.561	0.664	32.264	91.643	60.851	94.313	62.624
58.561	0.231	0.273	32.264	90.211	24.668	93.981	25.699
58.793	0.561	0.670	33.098	89.767	60.164	91.412	61.267
59.354	0.561	0.670	33.098	87.600	58.712	89.568	60.031
59.916	0.137	0.164	33.098	86.253	14.104	89.431	14.624

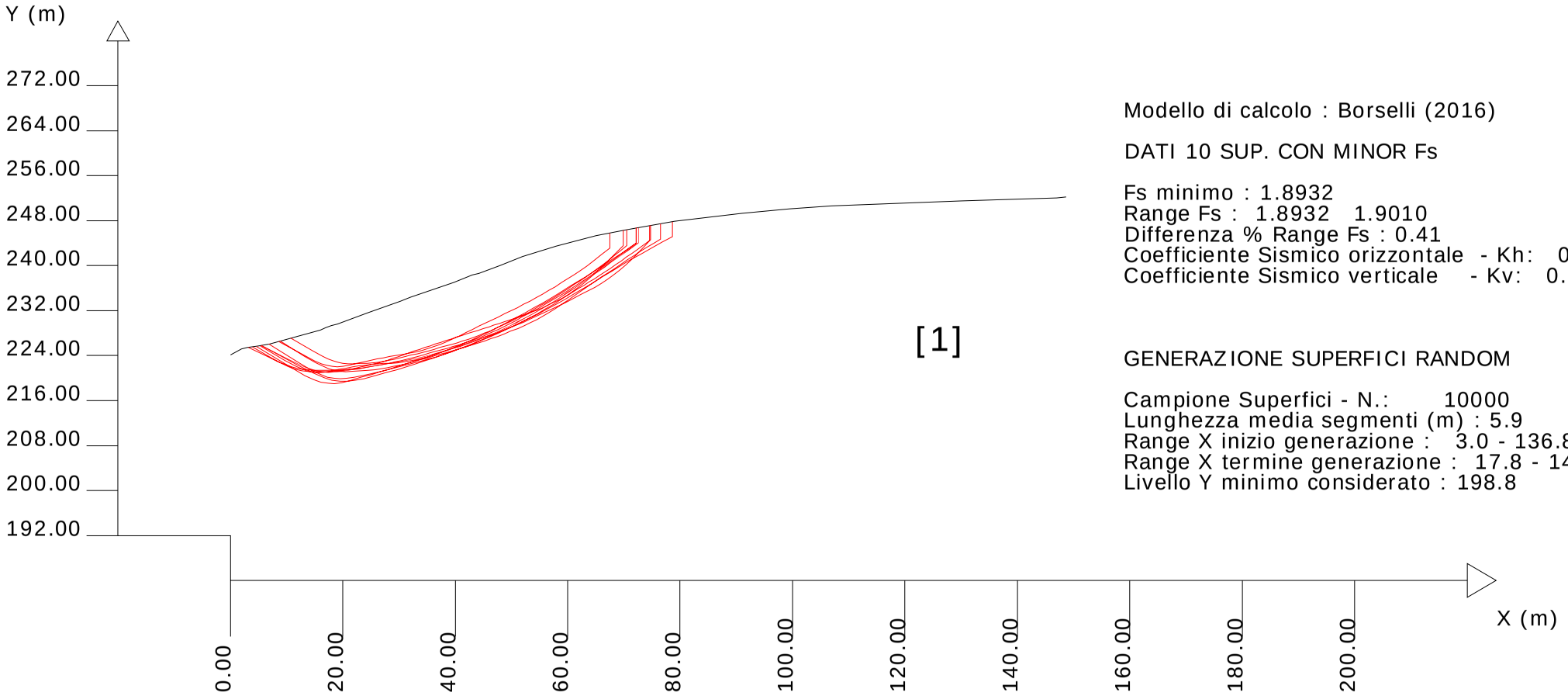
60.053	0.561	0.676	33.886	85.720	57.978	86.795	58.704
60.614	0.561	0.676	33.886	83.422	56.423	84.960	57.463
61.176	0.157	0.189	33.886	81.951	15.506	84.434	15.975
61.333	0.561	0.682	34.614	81.129	55.349	81.838	55.832
61.894	0.561	0.682	34.614	78.707	53.696	79.550	54.272
62.456	0.213	0.258	34.614	77.037	19.893	78.966	20.392
62.668	0.561	0.684	34.788	75.503	51.619	76.660	52.410
63.230	0.561	0.684	34.788	73.051	49.943	74.731	51.091
63.791	0.189	0.230	34.788	71.412	16.416	74.301	17.080
63.980	0.561	0.685	34.967	69.899	47.892	71.688	49.117
64.541	0.459	0.560	34.967	67.643	37.858	69.820	39.077
65.000	0.273	0.333	34.967	65.945	21.957	68.847	22.924
65.273	0.561	0.687	35.147	63.966	43.923	66.500	45.663
65.834	0.561	0.687	35.147	61.120	41.969	64.362	44.196
66.396	0.163	0.199	35.147	59.284	11.813	63.434	12.640
66.559	0.561	0.688	35.328	57.546	39.604	61.468	42.302
67.120	0.561	0.688	35.328	54.668	37.623	59.247	40.774
67.682	0.156	0.191	35.328	52.829	10.111	57.965	11.094
67.838	0.561	0.690	35.565	51.097	35.269	55.872	38.565
68.399	0.561	0.690	35.565	48.177	33.253	54.223	37.427
68.961	0.316	0.388	35.565	45.895	17.824	52.354	20.333
69.277	0.561	0.692	35.753	43.682	30.222	50.567	34.985
69.838	0.561	0.692	35.753	40.728	28.178	47.890	33.133
70.400	0.100	0.124	35.753	38.987	4.820	46.359	5.732
70.500	0.377	0.464	35.753	37.689	17.499	45.115	20.948
70.877	0.561	0.693	35.932	35.163	24.383	42.956	29.787
71.438	0.561	0.693	35.932	32.049	22.224	40.887	28.352
72.000	0.561	0.693	35.932	28.936	20.065	38.225	26.506

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
dl(m) : lunghezza base concio
alpha(°) : Angolo pendenza base concio
TauStress(kPa) : Sforzo di taglio su base concio
TauF (kN/m) : Forza di taglio su base concio
TauStrength(kPa) : Resistenza al taglio su base concio
TauS (kN/m) : Forza resistente al taglio su base concio

SSAP 5.0.2 (2021) - Slope Stability Analysis Program
Software by Dr.Geol. L.Borselli - www.lorenzo-borselli.eu
SSAP/DXF generator rel. 2.0 (2020)

Data : 18/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Borselli (2016)

DATI 10 SUP. CON MINOR Fs

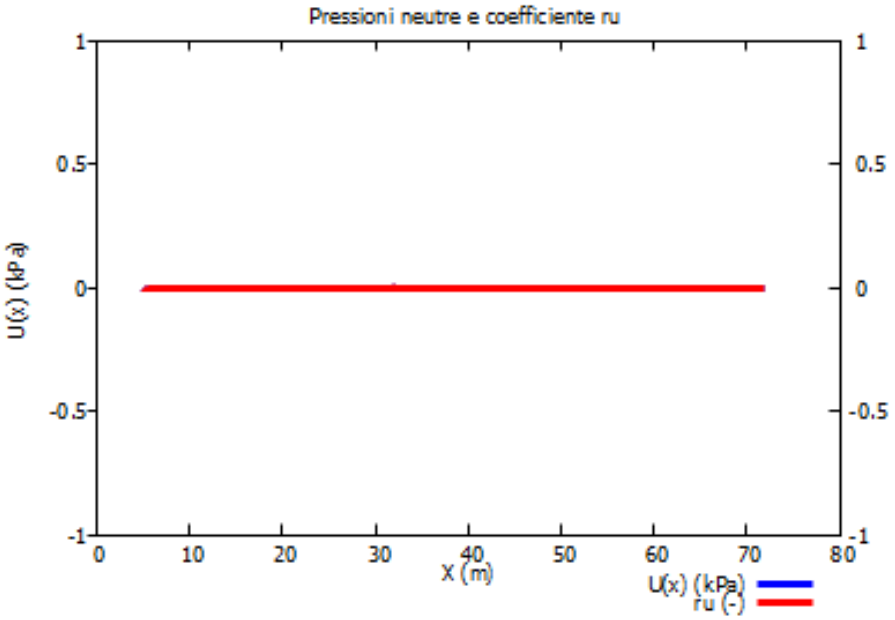
Fs minimo : 1.8932
Range Fs : 1.8932 1.9010
Differenza % Range Fs : 0.41
Coefficiente Sismico orizzontale - Kh: 0.0350
Coefficiente Sismico verticale - Kv: 0.0175

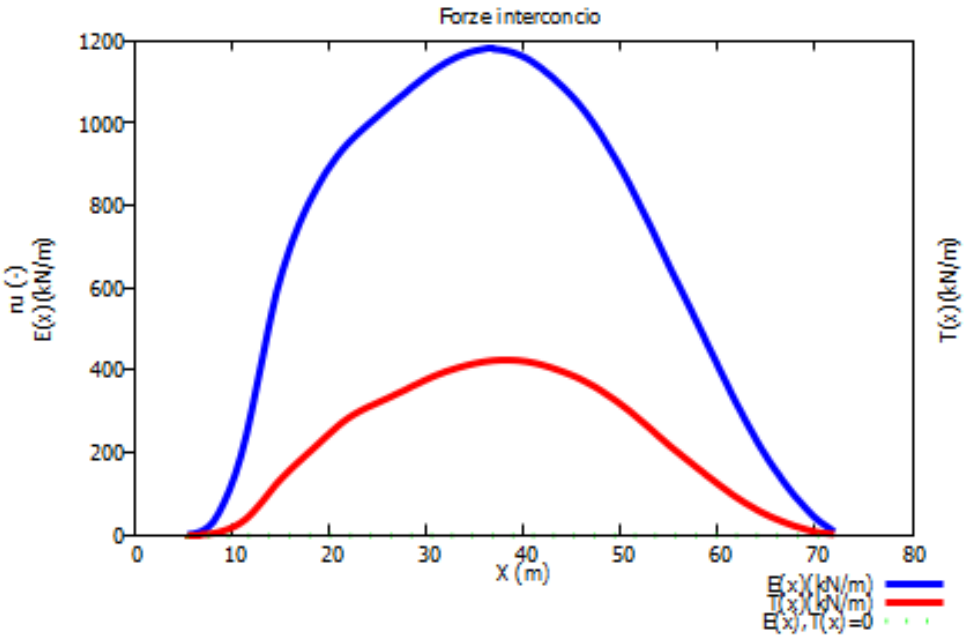
GENERAZIONE SUPERFICI RANDOM

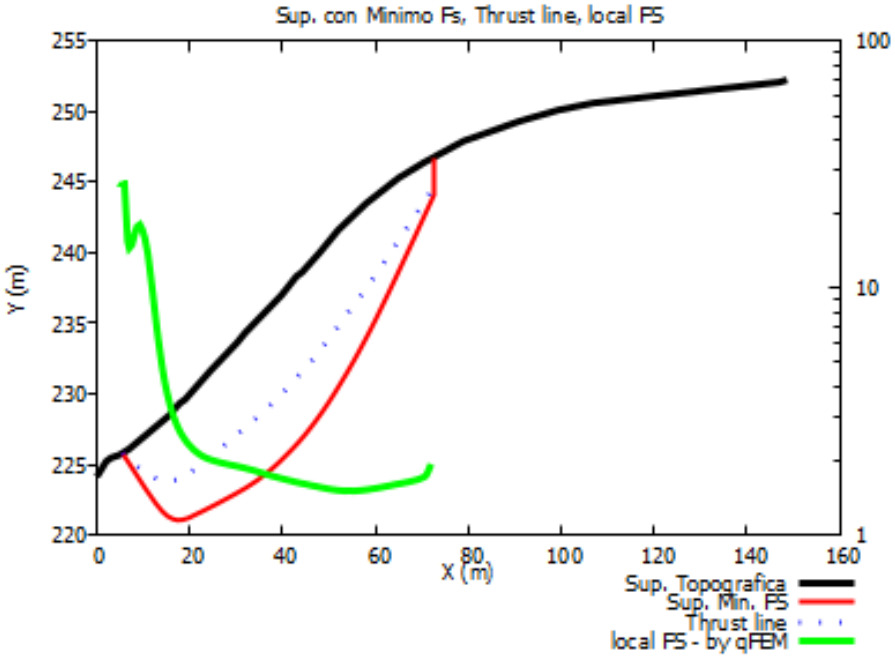
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 5.9
Range X inizio generazione : 3.0 - 136.8
Range X termine generazione : 17.8 - 145.7
Livello Y minimo considerato : 198.8

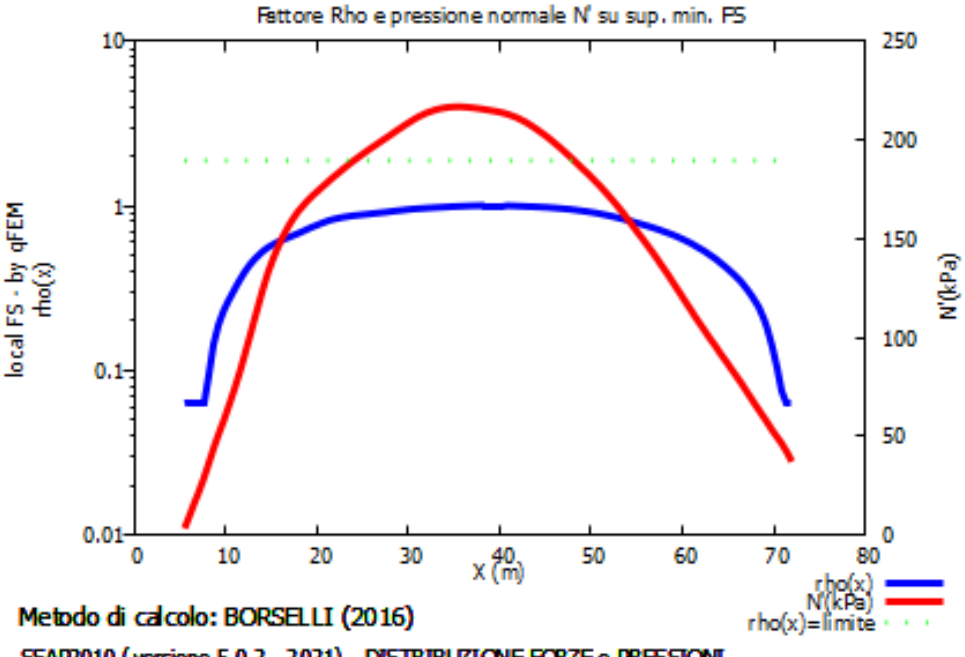
Parametri Geotecnici degli strati # ----------

N.	phi`	C`	Cu	Gamm	GammSat	sgci	GSI	mi	D
..	deg	kPa	kPa	kN/m3	kN/m3	MPa	..	..	..
1	26.00	19.50	0	20.00	22.00	0	0	0	0





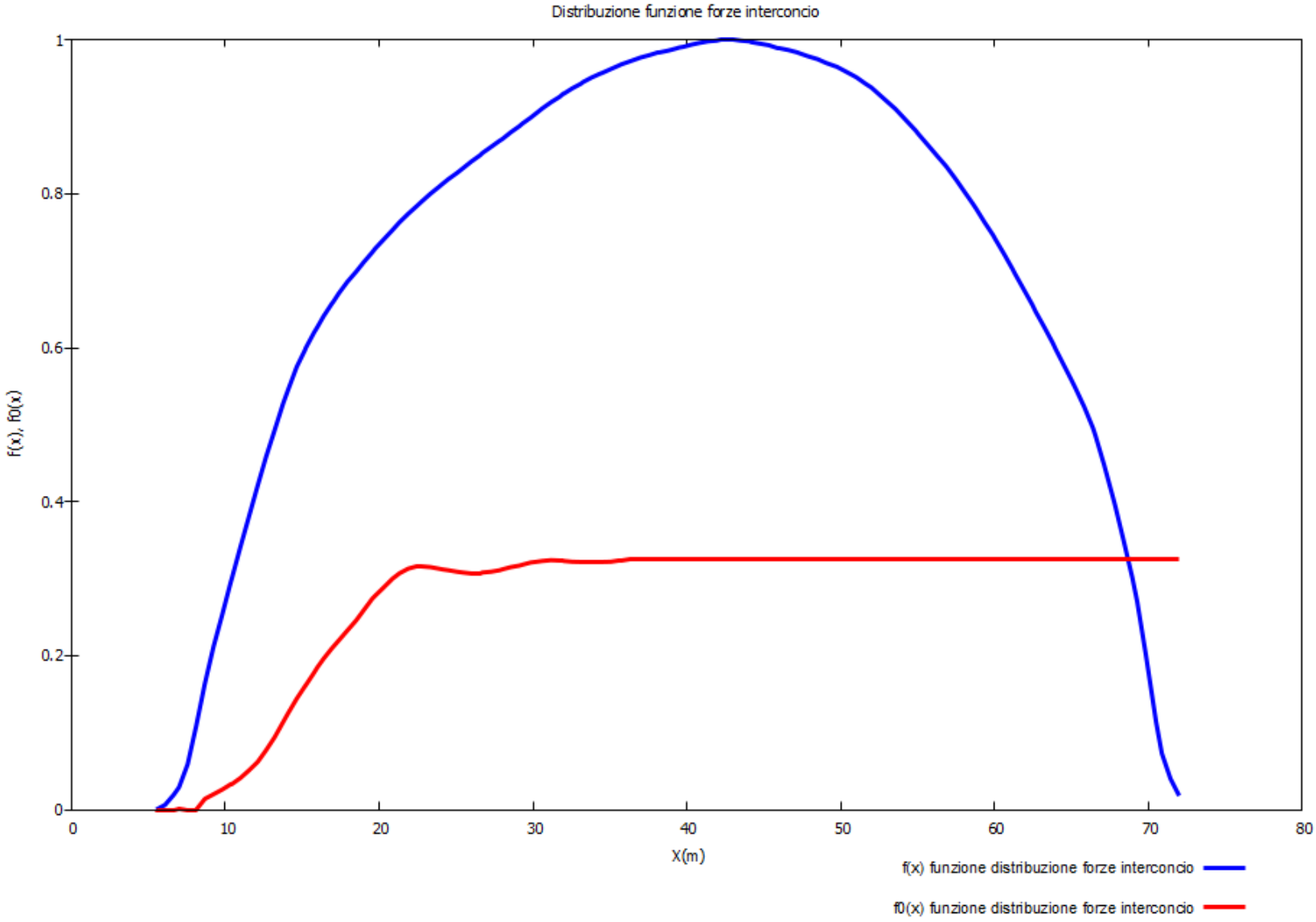


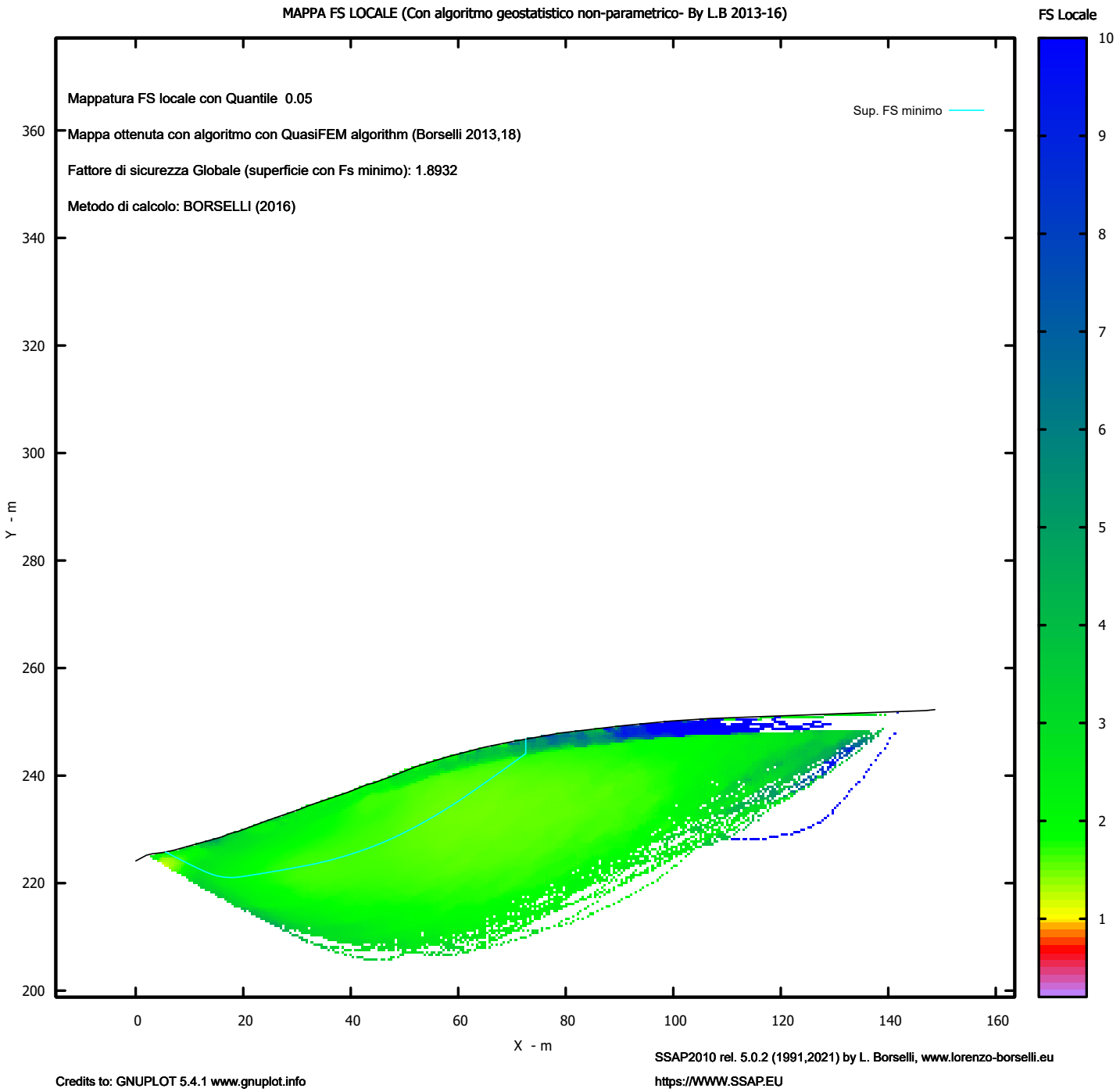


Metodo di calcolo: BORSELLI (2016)

SSAP2010 (versione 5.0.2 - 2021) - DISTRIBUZIONE FORZE e PRESSIONI

18/11/21 14:30




MAPPA FS LOCALE (Con algoritmo geostatistico non-parametrico- By L.B 2013-16)
FS Locale
Mappatura FS locale con Quantile 0.05
Mappa ottenuta con algoritmo con QuasiFEM algorithm (Borselli 2013,18)
Fattore di sicurezza Globale (superficie con Fs minimo): 1.8932
Metodo di calcolo: BORSELLI (2016)
Sup. FS minimo
Y - m
X - m
360
340
320
300
280
260
240
220
200
0
20
40
60
80
100
120
140
160
10
9
8
7
6
5
4
3
2
1
Credits to: GNUPLOT 5.4.1 www.gnuplot.info
SSAP2010 rel. 5.0.2 (1991,2021) by L. Borselli, www.lorenzo-borselli.eu
https://WWW.SSAP.EU

VERIFICA DI STABILITA' SEZIONE 2

CONDIZIONE NON DRENATA

Report elaborazioni

SSAP 5.0.2 - Slope Stability Analysis Program (1991,2021)
WWW.SSAP.EU
Build No. 11893
BY
Dr. Geol. LORENZO BORSELLI *,**
*UASLP, San Luis Potosi, Mexico
e-mail: lborselli@gmail.com
CV e WEB page personale: WWW.LORENZO-BORSELLI.EU
** Gia' Ricercatore CNR-IRPI fino a Luglio 2011

Ultima Revisione struttura tabelle del report: 21 Febbraio 2021

File report: C:\SSAP2010\CRACO SERRACARUSO CAP\VERIFICA 2\NON DRENATA\MORG\MORG.txt
Data: 18/11/2021
Localita' :
Descrizione:
Modello pendio: NONDRENATA.mod

---------- PARAMETRI DEL MODELLO DEL PENDIO ----------

__ PARAMETRI GEOMETRICI - Coordinate X Y (in m) __

SUP T.		SUP 2		SUP 3		SUP 4	
X	Y	X	Y	X	Y	X	Y
0.00	224.12	-	-	-	-	-	-
2.00	225.19	-	-	-	-	-	-
3.00	225.45	-	-	-	-	-	-
5.00	225.68	-	-	-	-	-	-
7.00	226.09	-	-	-	-	-	-
16.00	228.58	-	-	-	-	-	-
17.00	229.02	-	-	-	-	-	-
18.00	229.36	-	-	-	-	-	-
19.00	229.59	-	-	-	-	-	-
24.50	231.65	-	-	-	-	-	-
30.24	233.63	-	-	-	-	-	-
32.00	234.34	-	-	-	-	-	-
39.79	237.00	-	-	-	-	-	-
43.00	238.32	-	-	-	-	-	-
44.20	238.62	-	-	-	-	-	-
48.00	240.01	-	-	-	-	-	-
52.00	241.62	-	-	-	-	-	-
58.00	243.50	-	-	-	-	-	-
65.00	245.31	-	-	-	-	-	-
70.50	246.41	-	-	-	-	-	-
79.00	247.92	-	-	-	-	-	-
91.00	249.32	-	-	-	-	-	-
99.50	250.13	-	-	-	-	-	-
107.00	250.62	-	-	-	-	-	-
130.00	251.48	-	-	-	-	-	-
147.00	252.09	-	-	-	-	-	-
148.68	252.26	-	-	-	-	-	-

ASSENZA DI FALDA

------- PARAMETRI GEOMECCANICI -------

	fi`	C`	Cu	Gamm	Gamm_sat	STR_IDX	sgci	GSI	mi	D
STRATO 1	0.00	0.00	100.00	20.00	22.00	19.086	0.00	0.00	0.00	0.00

LEGENDA: fi`_____ Angolo di attrito interno efficace(in gradi)
C` _____ Coesione efficace (in Kpa)

Cu _____ Resistenza al taglio Non drenata (in Kpa)
Gamm _____ Peso di volume terreno fuori falda (in KN/m^3)
Gamm_sat __ Peso di volume terreno immerso (in KN/m^3)
STR_IDX ___ Indice di resistenza (usato in solo in 'SNIFF SEARCH) (adimensionale)
---- SOLO Per AMMASSI ROCCIOSI FRATTURATI - Parametri Criterio di Rottura di Hoek (2002)-
sigci _____ Resistenza Compressione Uniassiale Roccia Intatta (in MPa)
GSI _____ Geological Strenght Index ammasso(adimensionale)
mi _____ Indice litologico ammasso(adimensionale)
D _____ Fattore di disturbo ammasso(adimensionale)
Fattore di riduzione NTC2018: gammaPHI=1.25 e gammaC=1.25 - DISATTIVATO (solo per ROCCE)
Uso CRITERIO DI ROTTURA Hoek et al.(2002,2006) - non-lineare - Generalizzato, secondo Lei et al.(2016)

---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
MOTORE DI RICERCA: RANDOM SEARCH - Siegel (1981)
FILTRAGGIO SUPERFICI : ATTIVATO
COORDINATE X1,X2,Y OSTACOLO : 0.00 0.00 0.00
LUNGHEZZA MEDIA SEGMENTI (m)*: 6.0 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 2.97 136.79
LIVELLO MINIMO CONSIDERATO (Ymin): 224.00
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 17.84 145.71
TOTALE SUPERFICI GENERATE : 10000
*NOTA IMPORTANTE: La lunghezza media dei segmenti non viene cosiderata nel caso
di uso del motore di recerca NEW RANOM SEARCH

---------- INFORMAZIONI PARAMETRI DI CALCOLO ----------
METODO DI CALCOLO : MORGENSTERN - PRICE (Morgenstern & Price, 1965)
METODO DI ESPLORAZIONE CAMPO VALORI (lambda0,Fs0) ADOTTATO : A (rapido)
COEFFICIENTE SISMICO UTILIZZATO Kh : 0.0350
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0175
COEFFICIENTE c=Kv/Kh UTILIZZATO : 0.5000
FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00

N.B. Le forze orizzontali addizionali in testa e alla base sono poste uguali a 0
durante le tutte le verifiche globali.
I valori >0 impostati dall'utente sono utilizzati solo in caso di verifica singola

---------- RISULTATO FINALE ELABORAZIONI ----------
---
* DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *

Fattore di sicurezza (FS) 1.8199 - Min. - X Y Lambda= 0.2004
17.75 229.28
26.93 226.96
31.41 225.91
34.48 225.28
37.13 224.85
39.63 224.56
41.99 224.36
44.46 224.25
47.03 224.22
49.91 224.27
52.60 224.35
55.19 224.45
57.73 224.58
60.28 224.74
62.83 224.94
65.46 225.17
68.22 225.45
71.23 225.79
73.76 226.18
76.16 226.68
78.39 227.28
80.84 228.10

83.09 228.98
85.49 230.08
88.04 231.38
90.98 233.01
93.75 234.56
96.39 236.08
98.98 237.58
101.54 239.10
104.39 240.82
105.93 241.77
105.93 250.55

Fattore di sicurezza (FS) 1.8284 - N.2 -- X Y Lambda= 0.2098
24.33 231.59
28.54 228.47
30.49 227.09
31.76 226.29
32.79 225.74
33.82 225.32
34.72 225.04
35.72 224.83
36.82 224.68
38.21 224.58
39.45 224.50
40.60 224.45
41.70 224.41
42.81 224.40
43.88 224.41
44.98 224.43
46.09 224.48
47.26 224.54
48.40 224.61
49.54 224.67
50.66 224.74
51.78 224.81
52.90 224.88
54.03 224.95
55.18 225.03
56.34 225.11
57.45 225.21
58.55 225.31
59.63 225.44
60.73 225.58
61.83 225.74
62.95 225.92
64.13 226.12
65.39 226.36
66.51 226.60
67.58 226.88
68.60 227.18
69.68 227.56
70.70 227.95
71.76 228.40
72.86 228.92
74.08 229.52
75.26 230.12
76.41 230.69
77.55 231.26
78.66 231.82
79.80 232.39
80.93 232.96
82.09 233.55
83.26 234.14
84.36 234.72
85.45 235.33

86.52 235.95
87.62 236.62
88.69 237.30
89.79 238.03
90.92 238.81
92.13 239.68
93.28 240.52
93.28 249.54

Fattore di sicurezza (FS) 1.8318 - N.3 -- X Y Lambda= 0.2176
19.27 229.69
23.75 227.47
25.83 226.49
27.20 225.94
28.32 225.57
29.45 225.32
30.44 225.17
31.54 225.10
32.72 225.09
34.18 225.16
35.49 225.19
36.72 225.21
37.90 225.21
39.09 225.19
40.25 225.15
41.42 225.08
42.62 225.00
43.89 224.90
45.11 224.80
46.32 224.71
47.51 224.63
48.71 224.56
49.91 224.50
51.14 224.44
52.41 224.38
53.75 224.33
54.93 224.32
56.07 224.36
57.15 224.44
58.30 224.58
59.39 224.76
60.53 225.00
61.74 225.29
63.11 225.67
64.37 226.04
65.58 226.42
66.75 226.80
67.93 227.21
69.09 227.64
70.27 228.09
71.47 228.57
72.73 229.09
73.96 229.60
75.16 230.09
76.36 230.57
77.55 231.03
78.76 231.50
79.99 231.97
81.27 232.45
82.62 232.95
83.79 233.44
84.92 233.96
85.99 234.53
87.14 235.21
88.22 235.91

89.35 236.71
90.54 237.62
91.88 238.69
93.15 239.73
94.38 240.74
94.38 249.64

Fattore di sicurezza (FS) 1.8445 - N.4 -- X Y Lambda= 0.2066
25.76 232.08
30.74 228.45
32.99 226.88
34.44 226.00
35.56 225.45
36.74 225.05
37.72 224.82
38.84 224.70
40.08 224.68
41.71 224.75
43.18 224.82
44.55 224.90
45.87 224.98
47.16 225.07
48.44 225.17
49.73 225.28
51.04 225.40
52.37 225.52
53.67 225.64
54.97 225.75
56.25 225.85
57.54 225.94
58.83 226.03
60.14 226.11
61.48 226.18
62.88 226.25
64.16 226.34
65.42 226.46
66.64 226.60
67.91 226.79
69.14 227.00
70.40 227.25
71.71 227.54
73.14 227.88
74.47 228.23
75.76 228.58
77.02 228.96
78.29 229.36
79.55 229.78
80.84 230.24
82.17 230.73
83.60 231.29
84.91 231.83
86.17 232.40
87.40 232.98
88.67 233.62
89.89 234.28
91.15 235.00
92.45 235.78
93.85 236.66
95.19 237.48
96.49 238.27
97.77 239.03
99.06 239.77
100.33 240.50
101.61 241.21
101.61 250.27

Fattore di sicurezza (FS) 1.8497 - N.5 -- X Y Lambda= 0.2452

17.72	229.27
21.93	226.84
23.84	225.80
25.07	225.22
26.04	224.87
27.04	224.64
27.90	224.53
28.86	224.50
29.94	224.57
31.32	224.72
32.56	224.85
33.70	224.95
34.80	225.03
35.88	225.09
36.95	225.14
38.04	225.17
39.16	225.19
40.35	225.20
41.46	225.22
42.54	225.26
43.60	225.31
44.69	225.39
45.75	225.48
46.83	225.59
47.94	225.72
49.11	225.88
50.23	226.02
51.33	226.14
52.41	226.26
53.50	226.36
54.59	226.45
55.70	226.54
56.84	226.61
58.06	226.68
59.15	226.77
60.21	226.89
61.23	227.04
62.29	227.24
63.32	227.46
64.38	227.72
65.49	228.04
66.72	228.42
67.86	228.79
68.96	229.16
70.03	229.55
71.11	229.97
72.17	230.40
73.24	230.86
74.34	231.35
75.49	231.88
76.62	232.41
77.73	232.94
78.83	233.46
79.92	233.99
81.02	234.53
82.12	235.07
83.24	235.62
84.37	236.19
85.47	236.75
86.56	237.32
87.64	237.90
88.73	238.49
89.82	239.10

90.92 239.73
92.05 240.38
92.05 249.42

Fattore di sicurezza (FS) 1.8497 - N.6 -- X Y Lambda= 0.2144
21.52 230.53
26.43 227.57
28.68 226.29
30.15 225.56
31.32 225.09
32.52 224.75
33.55 224.56
34.70 224.45
35.94 224.43
37.51 224.49
38.96 224.56
40.33 224.62
41.66 224.68
42.95 224.75
44.25 224.82
45.55 224.89
46.85 224.97
48.16 225.06
49.47 225.13
50.76 225.21
52.05 225.27
53.35 225.34
54.66 225.40
55.98 225.45
57.35 225.51
58.78 225.56
60.06 225.64
61.29 225.77
62.47 225.93
63.72 226.16
64.91 226.42
66.15 226.75
67.46 227.13
68.93 227.61
70.28 228.08
71.58 228.55
72.85 229.03
74.13 229.54
75.40 230.07
76.71 230.64
78.07 231.26
79.56 231.95
80.85 232.62
82.08 233.32
83.25 234.06
84.50 234.93
85.69 235.83
86.95 236.85
88.28 238.02
89.80 239.41
91.00 240.47
91.00 249.32

Fattore di sicurezza (FS) 1.8599 - N.7 -- X Y Lambda= 0.1879
22.80 231.02
30.65 228.16
34.42 226.87
36.97 226.11
39.12 225.58

41.21 225.20
43.13 224.94
45.18 224.77
47.34 224.69
49.84 224.68
52.14 224.70
54.33 224.76
56.45 224.85
58.59 224.98
60.69 225.13
62.83 225.33
65.02 225.56
67.35 225.84
69.55 226.14
71.70 226.46
73.81 226.80
75.95 227.18
78.06 227.59
80.22 228.03
82.44 228.52
84.79 229.08
86.98 229.63
89.10 230.22
91.17 230.84
93.30 231.53
95.38 232.25
97.54 233.06
99.79 233.94
102.27 234.97
104.46 235.95
106.54 236.98
108.53 238.07
110.64 239.31
112.87 240.77
114.42 241.87
114.42 250.90

Fattore di sicurezza (FS) 1.8613 - N.8 -- X Y Lambda= 0.2164
25.85 232.12
29.86 228.73
31.66 227.28
32.80 226.48
33.67 225.97
34.60 225.60
35.35 225.40
36.22 225.29
37.19 225.27
38.51 225.32
39.70 225.37
40.80 225.41
41.87 225.45
42.91 225.49
43.94 225.53
44.97 225.56
46.01 225.60
47.04 225.63
48.08 225.67
49.11 225.70
50.14 225.74
51.18 225.77
52.21 225.81
53.25 225.85
54.29 225.89
55.32 225.93
56.36 225.98

57.39 226.02
58.42 226.07
59.44 226.13
60.48 226.19
61.53 226.25
62.61 226.31
63.72 226.39
64.74 226.48
65.73 226.59
66.70 226.73
67.70 226.91
68.67 227.10
69.68 227.34
70.73 227.61
71.88 227.93
72.94 228.25
73.97 228.57
74.96 228.91
75.98 229.28
76.97 229.66
77.97 230.07
79.00 230.50
80.07 230.98
81.14 231.45
82.18 231.91
83.23 232.37
84.26 232.82
85.29 233.28
86.33 233.73
87.36 234.19
88.39 234.64
89.43 235.09
90.46 235.54
91.50 235.99
92.53 236.44
93.56 236.88
94.60 237.33
95.65 237.78
96.70 238.23
97.73 238.68
98.76 239.14
99.77 239.61
100.79 240.09
101.82 240.58
102.86 241.10
103.55 241.44
103.55 250.39

Fattore di sicurezza (FS) 1.8631 - N.9 -- X Y Lambda= 0.2093
19.04 229.60
25.65 227.09
28.76 225.98
30.84 225.35
32.56 224.94
34.26 224.68
35.80 224.54
37.46 224.50
39.24 224.55
41.37 224.70
43.30 224.82
45.13 224.90
46.89 224.94
48.66 224.96
50.42 224.95
52.23 224.91

54.12 224.83
56.17 224.73
57.97 224.69
59.67 224.73
61.28 224.83
63.01 225.02
64.64 225.28
66.38 225.63
68.24 226.08
70.42 226.67
72.28 227.25
74.02 227.87
75.65 228.54
77.38 229.33
79.00 230.17
80.72 231.14
82.54 232.25
84.60 233.59
86.48 234.86
88.27 236.13
90.00 237.41
91.77 238.77
93.69 240.34
94.35 240.89
94.35 249.64

Fattore di sicurezza (FS) 1.8634 - N.10 -- X Y Lambda= 0.1988
23.72 231.36
29.97 228.17
32.89 226.75
34.82 225.93
36.41 225.38
38.00 224.98
39.41 224.72
40.93 224.56
42.56 224.49
44.53 224.49
46.38 224.50
48.13 224.52
49.84 224.54
51.52 224.57
53.22 224.60
54.95 224.64
56.75 224.69
58.64 224.75
60.28 224.86
61.86 225.03
63.35 225.27
64.96 225.61
66.47 226.00
68.06 226.49
69.75 227.09
71.70 227.85
73.48 228.58
75.17 229.31
76.81 230.05
78.47 230.84
80.10 231.65
81.78 232.53
83.52 233.48
85.42 234.55
87.11 235.57
88.74 236.62
90.29 237.71
91.93 238.95

93.68 240.38
94.30 240.92
94.30 249.63

---------- ANALISI DEFICIT DI RESISTENZA ----------
DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *
Analisi Deficit in riferimento a FS(progetto) = 1.100

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	1.820	9763.6	5364.8	3862.3	Surplus
2	1.828	8001.6	4376.3	3187.7	Surplus
3	1.832	8514.5	4648.1	3401.6	Surplus
4	1.845	8630.2	4678.8	3483.5	Surplus
5	1.850	8231.8	4450.4	3336.3	Surplus
6	1.850	8013.0	4332.1	3247.7	Surplus
7	1.860	9993.8	5373.2	4083.3	Surplus
8	1.861	8743.7	4697.7	3576.3	Surplus
9	1.863	8625.7	4629.7	3533.0	Surplus
10	1.863	8192.6	4396.7	3356.2	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 3187.7

Note: FTR --> Forza totale Resistente lungo la superficie
di scivolamento
FTA --> Forza totale Agente lungo la superficie
di scivolamento

IMPORTANTE! : Il Deficit o il Surplus di resistenza viene espresso in kN
per metro di LARGHEZZA rispetto al fronte della scarpata

TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (°)	W (kN/m)	ru (-)	U (kPa)	phi' (°)	(c',Cu) (kPa)
17.753	0.247	-14.15	0.37	0.00	0.00	0.00	100.00
18.000	0.771	-14.15	5.21	0.00	0.00	0.00	100.00
18.771	0.229	-14.15	2.67	0.00	0.00	0.00	100.00
19.000	0.771	-14.15	13.65	0.00	0.00	0.00	100.00
19.771	0.771	-14.15	21.23	0.00	0.00	0.00	100.00
20.542	0.771	-14.15	28.81	0.00	0.00	0.00	100.00
21.313	0.771	-14.15	36.39	0.00	0.00	0.00	100.00
22.084	0.771	-14.15	43.97	0.00	0.00	0.00	100.00
22.855	0.771	-14.15	51.55	0.00	0.00	0.00	100.00
23.626	0.771	-14.15	59.13	0.00	0.00	0.00	100.00
24.397	0.103	-14.15	8.46	0.00	0.00	0.00	100.00
24.500	0.771	-14.15	67.54	0.00	0.00	0.00	100.00
25.271	0.771	-14.15	74.76	0.00	0.00	0.00	100.00
26.042	0.771	-14.15	81.98	0.00	0.00	0.00	100.00
26.813	0.117	-14.15	13.04	0.00	0.00	0.00	100.00
26.930	0.771	-13.26	90.20	0.00	0.00	0.00	100.00
27.701	0.771	-13.26	97.22	0.00	0.00	0.00	100.00
28.472	0.771	-13.26	104.25	0.00	0.00	0.00	100.00
29.243	0.771	-13.26	111.27	0.00	0.00	0.00	100.00
30.014	0.226	-13.26	33.97	0.00	0.00	0.00	100.00
30.240	0.771	-13.26	120.71	0.00	0.00	0.00	100.00
31.011	0.396	-13.26	64.97	0.00	0.00	0.00	100.00
31.407	0.593	-11.45	101.06	0.00	0.00	0.00	100.00
32.000	0.771	-11.45	137.48	0.00	0.00	0.00	100.00
32.771	0.771	-11.45	144.06	0.00	0.00	0.00	100.00
33.542	0.771	-11.45	150.64	0.00	0.00	0.00	100.00
34.313	0.171	-11.45	34.35	0.00	0.00	0.00	100.00

34.484	0.771	-9.35	158.45	0.00	0.00	0.00	100.00
35.255	0.771	-9.35	164.57	0.00	0.00	0.00	100.00
36.026	0.771	-9.35	170.70	0.00	0.00	0.00	100.00
36.797	0.330	-9.35	74.94	0.00	0.00	0.00	100.00
37.127	0.771	-6.71	179.15	0.00	0.00	0.00	100.00
37.898	0.771	-6.71	184.71	0.00	0.00	0.00	100.00
38.669	0.771	-6.71	190.26	0.00	0.00	0.00	100.00
39.441	0.189	-6.71	47.57	0.00	0.00	0.00	100.00
39.630	0.160	-4.65	40.49	0.00	0.00	0.00	100.00
39.790	0.771	-4.65	198.44	0.00	0.00	0.00	100.00
40.561	0.771	-4.65	204.40	0.00	0.00	0.00	100.00
41.332	0.661	-4.65	179.90	0.00	0.00	0.00	100.00
41.993	0.771	-2.56	215.25	0.00	0.00	0.00	100.00
42.764	0.236	-2.56	67.05	0.00	0.00	0.00	100.00
43.000	0.771	-2.56	221.48	0.00	0.00	0.00	100.00
43.771	0.429	-2.56	124.77	0.00	0.00	0.00	100.00
44.200	0.261	-2.56	76.62	0.00	0.00	0.00	100.00
44.461	0.771	-0.66	229.21	0.00	0.00	0.00	100.00
45.232	0.771	-0.66	233.77	0.00	0.00	0.00	100.00
46.003	0.771	-0.66	238.34	0.00	0.00	0.00	100.00
46.774	0.256	-0.66	80.23	0.00	0.00	0.00	100.00
47.031	0.771	0.97	244.24	0.00	0.00	0.00	100.00
47.802	0.198	0.97	63.51	0.00	0.00	0.00	100.00
48.000	0.771	0.97	249.77	0.00	0.00	0.00	100.00
48.771	0.771	0.97	254.44	0.00	0.00	0.00	100.00
49.542	0.365	0.97	121.97	0.00	0.00	0.00	100.00
49.907	0.771	1.58	261.25	0.00	0.00	0.00	100.00
50.678	0.771	1.58	265.78	0.00	0.00	0.00	100.00
51.449	0.551	1.58	192.80	0.00	0.00	0.00	100.00
52.000	0.598	1.58	211.51	0.00	0.00	0.00	100.00
52.598	0.771	2.25	275.63	0.00	0.00	0.00	100.00
53.369	0.771	2.25	278.95	0.00	0.00	0.00	100.00
54.140	0.771	2.25	282.26	0.00	0.00	0.00	100.00
54.911	0.283	2.25	104.49	0.00	0.00	0.00	100.00
55.194	0.771	2.95	286.72	0.00	0.00	0.00	100.00
55.965	0.771	2.95	289.89	0.00	0.00	0.00	100.00
56.736	0.771	2.95	293.05	0.00	0.00	0.00	100.00
57.507	0.224	2.95	85.62	0.00	0.00	0.00	100.00
57.731	0.269	3.67	103.25	0.00	0.00	0.00	100.00
58.000	0.771	3.67	297.78	0.00	0.00	0.00	100.00
58.771	0.771	3.67	300.13	0.00	0.00	0.00	100.00
59.542	0.738	3.67	289.31	0.00	0.00	0.00	100.00
60.280	0.771	4.39	304.66	0.00	0.00	0.00	100.00
61.051	0.771	4.39	306.86	0.00	0.00	0.00	100.00
61.822	0.771	4.39	309.06	0.00	0.00	0.00	100.00
62.593	0.239	4.39	96.43	0.00	0.00	0.00	100.00
62.832	0.771	5.10	311.86	0.00	0.00	0.00	100.00
63.603	0.771	5.10	313.91	0.00	0.00	0.00	100.00
64.374	0.626	5.10	256.30	0.00	0.00	0.00	100.00
65.000	0.461	5.10	189.34	0.00	0.00	0.00	100.00
65.461	0.771	5.76	318.00	0.00	0.00	0.00	100.00
66.232	0.771	5.76	319.20	0.00	0.00	0.00	100.00
67.003	0.771	5.76	320.40	0.00	0.00	0.00	100.00
67.774	0.448	5.76	186.85	0.00	0.00	0.00	100.00
68.222	0.771	6.36	322.23	0.00	0.00	0.00	100.00
68.993	0.771	6.36	323.30	0.00	0.00	0.00	100.00
69.764	0.736	6.36	309.64	0.00	0.00	0.00	100.00
70.500	0.725	6.36	305.99	0.00	0.00	0.00	100.00
71.225	0.771	8.75	325.76	0.00	0.00	0.00	100.00
71.996	0.771	8.75	326.04	0.00	0.00	0.00	100.00
72.767	0.771	8.75	326.33	0.00	0.00	0.00	100.00
73.538	0.225	8.75	95.31	0.00	0.00	0.00	100.00
73.764	0.771	11.77	326.37	0.00	0.00	0.00	100.00
74.535	0.771	11.77	326.00	0.00	0.00	0.00	100.00
75.306	0.771	11.77	325.63	0.00	0.00	0.00	100.00
76.077	0.083	11.77	34.99	0.00	0.00	0.00	100.00

76.160	0.771	15.17	324.84	0.00	0.00	0.00	100.00
76.931	0.771	15.17	323.71	0.00	0.00	0.00	100.00
77.702	0.692	15.17	289.71	0.00	0.00	0.00	100.00
78.394	0.606	18.40	252.65	0.00	0.00	0.00	100.00
79.000	0.771	18.40	319.35	0.00	0.00	0.00	100.00
79.771	0.771	18.40	316.74	0.00	0.00	0.00	100.00
80.542	0.302	18.40	123.38	0.00	0.00	0.00	100.00
80.844	0.771	21.51	312.73	0.00	0.00	0.00	100.00
81.615	0.771	21.51	309.37	0.00	0.00	0.00	100.00
82.386	0.708	21.51	280.94	0.00	0.00	0.00	100.00
83.094	0.771	24.54	302.56	0.00	0.00	0.00	100.00
83.865	0.771	24.54	298.45	0.00	0.00	0.00	100.00
84.636	0.771	24.54	294.34	0.00	0.00	0.00	100.00
85.407	0.088	24.54	33.31	0.00	0.00	0.00	100.00
85.495	0.771	27.05	289.43	0.00	0.00	0.00	100.00
86.266	0.771	27.05	284.66	0.00	0.00	0.00	100.00
87.037	0.771	27.05	279.90	0.00	0.00	0.00	100.00
87.808	0.229	27.05	82.20	0.00	0.00	0.00	100.00
88.037	0.771	28.98	273.46	0.00	0.00	0.00	100.00
88.808	0.771	28.98	268.17	0.00	0.00	0.00	100.00
89.579	0.771	28.98	262.88	0.00	0.00	0.00	100.00
90.350	0.633	28.98	211.80	0.00	0.00	0.00	100.00
90.983	0.017	29.35	5.79	0.00	0.00	0.00	100.00
91.000	0.771	29.35	252.95	0.00	0.00	0.00	100.00
91.771	0.771	29.35	247.30	0.00	0.00	0.00	100.00
92.542	0.771	29.35	241.65	0.00	0.00	0.00	100.00
93.313	0.432	29.35	132.95	0.00	0.00	0.00	100.00
93.745	0.771	29.76	232.77	0.00	0.00	0.00	100.00
94.516	0.771	29.76	227.01	0.00	0.00	0.00	100.00
95.287	0.771	29.76	221.24	0.00	0.00	0.00	100.00
96.058	0.334	29.76	94.05	0.00	0.00	0.00	100.00
96.392	0.771	30.19	212.92	0.00	0.00	0.00	100.00
97.163	0.771	30.19	207.04	0.00	0.00	0.00	100.00
97.934	0.771	30.19	201.15	0.00	0.00	0.00	100.00
98.705	0.273	30.19	69.76	0.00	0.00	0.00	100.00
98.978	0.522	30.62	131.38	0.00	0.00	0.00	100.00
99.500	0.771	30.62	188.88	0.00	0.00	0.00	100.00
100.271	0.771	30.62	182.51	0.00	0.00	0.00	100.00
101.042	0.496	30.62	113.93	0.00	0.00	0.00	100.00
101.538	0.771	31.16	171.96	0.00	0.00	0.00	100.00
102.309	0.771	31.16	165.44	0.00	0.00	0.00	100.00
103.080	0.771	31.16	158.91	0.00	0.00	0.00	100.00
103.851	0.542	31.16	107.86	0.00	0.00	0.00	100.00
104.393	0.771	31.59	147.74	0.00	0.00	0.00	100.00
105.164	0.771	31.59	141.09	0.00	0.00	0.00	100.00

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
alpha(°) : Angolo pendenza base concio
W(kN/m) : Forza peso concio
ru(-) : Coefficiente locale pressione interstiziale
U(kPa) : Pressione totale dei pori base concio
phi'(°) : Angolo di attrito efficace base concio
c'/Cu (kPa) : Coesione efficace o Resistenza al taglio in condizioni non drenate

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TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	ht (m)	yt (m)	yt' (--)	E(x) (kN/m)	T(x) (kN/m)	E' (kN)	rho(x) (--)	FS_qFEM (--)	FS_srmFEM (--)
17.753	0.000	229.276	-0.124	0.0000000000E+000	0.0000000000E+000	1.3275713992E+003	0.061	15.633	10.304
18.000	0.037	229.250	-0.124	2.6669997338E+002	7.9454077009E-002	8.3291112612E+002	0.061	15.633	10.304
18.771	0.130	229.149	-0.121	3.1335630421E+002	5.2672100673E-001	5.2909621364E+001	0.061	6.630	4.392

19.000	0.168	229.129	-0.085	3.2495444617E+002	7.2327607914E-001	5.2174567096E+001	0.061	5.636	3.781
19.771	0.297	229.065	-0.084	3.6913567902E+002	2.0651313356E+000	6.1664324908E+001	0.061	3.559	2.460
20.542	0.427	229.000	-0.084	4.2004354741E+002	4.7743904911E+000	7.1261999563E+001	0.061	2.581	1.803
21.313	0.557	228.936	-0.082	4.7902481672E+002	8.9789693750E+000	7.8811228836E+001	0.079	2.108	1.473
22.084	0.690	228.874	-0.077	5.4157392870E+002	1.4028783482E+001	8.1949632454E+001	0.100	1.868	1.301
22.855	0.826	228.817	-0.071	6.0539475443E+002	1.9672492787E+001	7.9865467080E+001	0.118	1.768	1.220
23.626	0.968	228.764	-0.066	6.6472999174E+002	2.4993340008E+001	7.6115487312E+001	0.129	1.699	1.161
24.397	1.114	228.715	-0.062	7.2276818373E+002	3.0350028645E+001	6.5733891208E+001	0.138	1.654	1.119
24.500	1.134	228.710	-0.055	7.2939777362E+002	3.0994025439E+001	6.5760525806E+001	0.138	1.654	1.118
25.271	1.286	228.667	-0.054	7.8761045585E+002	3.6995654347E+001	7.6382564345E+001	0.148	1.679	1.118
26.042	1.440	228.627	-0.050	8.4718304744E+002	4.3474950667E+001	7.9620068419E+001	0.158	1.741	1.137
26.813	1.597	228.590	-0.048	9.1038810335E+002	5.0733420519E+001	7.8853686520E+001	0.169	1.848	1.176
26.930	1.622	228.585	-0.041	9.1953522080E+002	5.1820725231E+001	7.8863913385E+001	0.171	1.868	1.183
27.701	1.772	228.553	-0.039	9.8280025773E+002	5.9501480901E+001	8.3040107763E+001	0.181	2.020	1.238
28.472	1.925	228.525	-0.034	1.0475867194E+003	6.7707903600E+001	8.6239548272E+001	0.192	2.217	1.306
29.243	2.083	228.501	-0.029	1.1157854343E+003	7.6755420621E+001	9.0620618432E+001	0.203	2.477	1.390
30.014	2.245	228.481	-0.023	1.1873276989E+003	8.6695047243E+001	8.4874748091E+001	0.216	2.830	1.490
30.240	2.294	228.477	-0.013	1.2059968042E+003	8.9405323642E+001	8.3062141076E+001	0.218	2.942	1.518
31.011	2.467	228.468	-0.011	1.2713766604E+003	9.9113386019E+001	8.4755519938E+001	0.227	3.405	1.623
31.407	2.557	228.465	-0.004	1.3049173527E+003	1.0423446295E+002	8.7597699604E+001	0.232	3.706	1.681
32.000	2.676	228.464	0.002	1.3594203370E+003	1.1295456858E+002	9.0763560968E+001	0.240	4.265	1.781
32.771	2.836	228.468	0.009	1.4282740258E+003	1.2440132798E+002	8.7707480567E+001	0.252	5.160	1.917
33.542	3.002	228.477	0.016	1.4946691297E+003	1.3592071045E+002	8.6659613674E+001	0.263	6.296	2.063
34.313	3.173	228.493	0.022	1.5619069618E+003	1.4806703514E+002	9.9547699677E+001	0.275	7.777	2.227
34.484	3.214	228.498	0.037	1.5794240510E+003	1.5137081295E+002	1.0157076032E+002	0.278	8.158	2.273
35.255	3.370	228.528	0.041	1.6552444849E+003	1.6598881514E+002	9.5266199356E+001	0.293	9.828	2.494
36.026	3.531	228.562	0.049	1.7263287206E+003	1.8015716665E+002	8.9815241965E+001	0.307	10.999	2.735
36.797	3.699	228.603	0.054	1.7937435385E+003	1.9401679861E+002	8.0030673644E+001	0.319	11.160	3.003
37.127	3.772	228.621	0.064	1.8191122473E+003	1.9937418518E+002	7.7255440149E+001	0.323	10.820	3.114
37.898	3.914	228.673	0.072	1.8793888047E+003	2.1245695352E+002	7.6970079967E+001	0.333	9.719	3.406
38.669	4.065	228.733	0.085	1.9378034960E+003	2.2550658552E+002	7.6531763888E+001	0.343	8.531	3.736
39.441	4.227	228.805	0.094	1.9974041508E+003	2.3928679368E+002	7.4966871524E+001	0.354	7.398	4.118
39.630	4.268	228.823	0.096	2.0114900221E+003	2.4258618603E+002	7.3080745141E+001	0.356	7.155	4.219
39.790	4.296	228.839	0.100	2.0230159059E+003	2.4530170012E+002	7.0801797225E+001	0.358	6.968	4.301
40.561	4.436	228.916	0.104	2.0732684064E+003	2.5750878522E+002	6.4212257974E+001	0.365	6.199	4.674
41.332	4.582	228.999	0.115	2.1220340320E+003	2.6969029821E+002	6.4075357791E+001	0.371	5.609	5.059
41.993	4.718	229.081	0.127	2.1648382188E+003	2.8077130679E+002	6.3399639084E+001	0.377	5.209	5.383
42.764	4.852	229.181	0.130	2.2124748790E+003	2.9351794071E+002	5.9383659054E+001	0.384	4.866	5.705
43.000	4.894	229.212	0.135	2.2263285394E+003	2.9734213500E+002	5.8311776435E+001	0.386	4.780	5.778
43.771	5.033	229.317	0.137	2.2704411894E+003	3.0974169129E+002	5.6066594990E+001	0.396	4.543	5.952
44.200	5.112	229.376	0.141	2.2942188575E+003	3.1656733824E+002	5.4460142618E+001	0.401	4.432	6.006
44.461	5.162	229.414	0.156	2.3082949881E+003	3.2071192861E+002	5.4250342139E+001	0.404	4.372	6.007
45.232	5.294	229.538	0.154	2.3509880185E+003	3.3360853186E+002	5.0353392530E+001	0.412	4.212	5.912
46.003	5.417	229.652	0.154	2.3859421341E+003	3.4471723160E+002	4.4815759193E+001	0.417	4.100	5.676
46.774	5.549	229.775	0.160	2.4200958904E+003	3.5599592886E+002	4.1780707180E+001	0.422	4.000	5.361
47.031	5.593	229.816	0.169	2.4305888571E+003	3.5956925226E+002	4.1172157273E+001	0.424	3.970	5.246
47.802	5.713	229.949	0.173	2.4628617606E+003	3.7084707572E+002	4.1276639744E+001	0.430	3.879	4.874
48.000	5.745	229.984	0.180	2.4710190065E+003	3.7375796488E+002	4.0735681580E+001	0.431	3.856	4.780
48.771	5.871	230.124	0.186	2.5012534443E+003	3.8491047695E+002	3.8639647105E+001	0.436	3.767	4.408
49.542	6.005	230.270	0.192	2.5306030419E+003	3.9616801510E+002	3.7454259679E+001	0.441	3.677	4.052
49.907	6.071	230.343	0.195	2.5441566448E+003	4.0157470735E+002	3.6280483786E+001	0.443	3.632	3.890
50.678	6.199	230.492	0.196	2.5706878698E+003	4.1249982764E+002	3.4158647907E+001	0.447	3.539	3.576
51.449	6.331	230.645	0.199	2.5968307823E+003	4.2357178326E+002	3.3225756074E+001	0.451	3.443	3.296
52.000	6.426	230.755	0.208	2.6148772357E+003	4.3138156463E+002	3.3578840390E+001	0.454	3.373	3.117
52.598	6.538	230.884	0.219	2.6355078787E+003	4.4045331821E+002	3.4168557886E+001	0.459	3.293	2.934
53.369	6.678	231.054	0.208	2.6615327639E+003	4.5209440125E+002	3.1264896835E+001	0.466	3.185	2.720
54.140	6.799	231.206	0.192	2.6837197248E+003	4.6215054838E+002	2.7705288051E+001	0.470	3.091	2.557
54.911	6.914	231.351	0.187	2.7042555367E+003	4.7151886004E+002	2.5458889691E+001	0.474	3.003	2.420
55.194	6.955	231.403	0.173	2.7113417551E+003	4.7477018854E+002	2.4260797790E+001	0.475	2.971	2.376
55.965	7.046	231.534	0.168	2.7284383329E+003	4.8267055187E+002	2.1388151507E+001	0.478	2.893	2.275
56.736	7.135	231.662	0.166	2.7443232255E+003	4.9010549737E+002	1.9804037941E+001	0.480	2.819	2.186
57.507	7.222	231.789	0.165	2.7589770304E+003	4.9710718631E+002	1.7896730940E+001	0.482	2.749	2.109
57.731	7.247	231.826	0.165	2.7629085980E+003	4.9904627722E+002	1.7449592550E+001	0.482	2.728	2.088
58.000	7.274	231.871	0.165	2.7675597096E+003	5.0135878222E+002	1.6996651445E+001	0.483	2.703	2.063
58.771	7.352	231.998	0.168	2.7799962438E+003	5.0774252705E+002	1.5732392198E+001	0.485	2.635	1.997
59.542	7.435	232.130	0.180	2.7918197503E+003	5.1409497001E+002	1.5161495829E+001	0.487	2.566	1.934

60.280	7.527	232.269	0.185	2.8028799586E+003	5.2042052745E+002	1.3891519756E+001	0.490	2.497	1.874
61.051	7.607	232.409	0.181	2.8127006828E+003	5.2645157273E+002	1.1922519888E+001	0.492	2.431	1.819
61.822	7.687	232.548	0.180	2.8212650086E+003	5.3209989746E+002	1.0387418912E+001	0.493	2.369	1.768
62.593	7.766	232.686	0.181	2.8287185396E+003	5.3741286670E+002	9.1416560789E+000	0.495	2.310	1.722
62.832	7.792	232.731	0.177	2.8308685009E+003	5.3904816652E+002	8.4497603652E+000	0.495	2.291	1.707
63.603	7.857	232.865	0.166	2.8360708698E+003	5.4352485635E+002	5.6048176723E+000	0.496	2.239	1.669
64.374	7.911	232.987	0.158	2.8395113762E+003	5.4715791818E+002	3.7808437265E+000	0.496	2.193	1.636
65.000	7.954	233.086	0.156	2.8415313882E+003	5.4981419945E+002	2.4733992664E+000	0.496	2.157	1.611
65.461	7.984	233.157	0.156	2.8424148139E+003	5.5150518303E+002	1.5678099372E+000	0.496	2.132	1.594
66.232	8.027	233.278	0.158	2.8431711835E+003	5.5408697281E+002	2.9166964999E-001	0.497	2.090	1.567
67.003	8.072	233.400	0.161	2.8428645813E+003	5.5627003663E+002	-1.2102994930E+000	0.497	2.044	1.542
67.774	8.119	233.525	0.163	2.8413048484E+003	5.5800526681E+002	-2.8841706151E+000	0.496	1.996	1.517
68.222	8.147	233.599	0.166	2.8397873123E+003	5.5878808272E+002	-4.4954092272E+000	0.496	1.967	1.503
68.993	8.190	233.728	0.168	2.8348487659E+003	5.5930038928E+002	-7.6333849622E+000	0.495	1.910	1.481
69.764	8.235	233.858	0.170	2.8280162969E+003	5.5917175982E+002	-1.0356632655E+001	0.493	1.846	1.460
70.500	8.278	233.983	0.157	2.8193428145E+003	5.5835805176E+002	-1.4434085132E+001	0.491	1.783	1.442
71.225	8.301	234.087	0.154	2.8069776523E+003	5.5644400622E+002	-1.8971269158E+001	0.488	1.712	1.426
71.996	8.308	234.213	0.163	2.7907725781E+003	5.5357574136E+002	-2.2795023126E+001	0.485	1.640	1.410
72.767	8.316	234.339	0.163	2.7718267240E+003	5.4993539556E+002	-2.6649162704E+001	0.481	1.572	1.397
73.538	8.323	234.465	0.163	2.7496783971E+003	5.4542412389E+002	-3.2528248289E+001	0.477	1.505	1.386
73.764	8.325	234.502	0.189	2.7421073821E+003	5.4382581305E+002	-3.4065933770E+001	0.476	1.485	1.383
74.535	8.316	234.653	0.196	2.7147120296E+003	5.3798132597E+002	-3.7975381858E+001	0.471	1.423	1.375
75.306	8.306	234.804	0.196	2.6835476730E+003	5.3117405771E+002	-4.4806608246E+001	0.466	1.368	1.368
76.077	8.297	234.956	0.196	2.6456182689E+003	5.2263172360E+002	-4.7239797213E+001	0.459	1.313	1.363
76.160	8.296	234.972	0.209	2.6417189013E+003	5.2174860292E+002	-4.7873517151E+001	0.458	1.308	1.362
76.931	8.249	235.134	0.209	2.5987571942E+003	5.1189695133E+002	-5.9319299542E+001	0.451	1.259	1.358
77.702	8.199	235.294	0.211	2.5502459324E+003	5.0055326089E+002	-6.6360308507E+001	0.442	1.215	1.356
78.394	8.161	235.443	0.223	2.5021623726E+003	4.8911006605E+002	-7.3737527107E+001	0.434	1.176	1.354
79.000	8.099	235.583	0.223	2.4551955275E+003	4.7781587859E+002	-7.7368403768E+001	0.426	1.146	1.354
79.771	8.010	235.750	0.231	2.3956620243E+003	4.6328558467E+002	-8.3842045934E+001	0.416	1.117	1.355
80.542	7.943	235.939	0.246	2.3259074050E+003	4.4609973896E+002	-9.2791274386E+001	0.404	1.090	1.357
80.844	7.918	236.014	0.260	2.2976038344E+003	4.3910967052E+002	-9.5876888072E+001	0.399	1.079	1.359
81.615	7.818	236.218	0.257	2.2193975206E+003	4.1981463747E+002	-9.9642020714E+001	0.385	1.057	1.363
82.386	7.706	236.411	0.263	2.1439514558E+003	4.0122302557E+002	-1.0426313579E+002	0.372	1.040	1.369
83.094	7.624	236.608	0.279	2.0660193210E+003	3.8225743738E+002	-1.1044322121E+002	0.358	1.027	1.376
83.865	7.488	236.824	0.276	1.9806157153E+003	3.6176942242E+002	-1.0918235860E+002	0.344	1.017	1.385
84.636	7.347	237.034	0.273	1.8976553218E+003	3.4220626552E+002	-1.0715233624E+002	0.330	1.009	1.394
85.407	7.205	237.244	0.272	1.8153820998E+003	3.2316373221E+002	-1.0145448237E+002	0.316	1.003	1.404
85.495	7.188	237.267	0.313	1.8065125701E+003	3.2113611877E+002	-1.0304927007E+002	0.314	1.003	1.405
86.266	7.040	237.513	0.311	1.7122293282E+003	2.9999858198E+002	-1.1806620600E+002	0.298	1.000	1.418
87.037	6.880	237.747	0.301	1.6244492874E+003	2.8080857283E+002	-1.1250580732E+002	0.284	1.001	1.430
87.808	6.718	237.978	0.299	1.5387404249E+003	2.6244144853E+002	-1.0804063464E+002	0.270	1.003	1.443
88.037	6.668	238.045	0.313	1.5142158286E+003	2.5728018923E+002	-1.0875166220E+002	0.266	1.004	1.446
88.808	6.486	238.291	0.320	1.4261126174E+003	2.3895824804E+002	-1.1387146306E+002	0.252	1.009	1.460
89.579	6.308	238.539	0.324	1.3386210240E+003	2.2102778875E+002	-1.1283419274E+002	0.238	1.015	1.474
90.350	6.133	238.791	0.328	1.2521173293E+003	2.0353531319E+002	-1.1146153415E+002	0.223	1.022	1.489
90.983	5.991	239.000	0.330	1.1819674241E+003	1.8951890412E+002	-1.0368059093E+002	0.211	1.029	1.501
91.000	5.987	239.005	0.323	1.1801626331E+003	1.8916469257E+002	-1.0349561982E+002	0.211	1.029	1.501
91.771	5.802	239.254	0.328	1.0999245487E+003	1.7346467065E+002	-1.0434639308E+002	0.198	1.039	1.515
92.542	5.626	239.512	0.339	1.0192559054E+003	1.5782201684E+002	-1.0480770257E+002	0.184	1.050	1.530
93.313	5.457	239.777	0.344	9.3830646146E+002	1.4224825540E+002	-1.0261222448E+002	0.170	1.062	1.547
93.745	5.363	239.925	0.354	8.9454366568E+002	1.3392507612E+002	-1.0212180817E+002	0.162	1.070	1.557
94.516	5.200	240.203	0.359	8.1464705192E+002	1.1884461865E+002	-1.0228312106E+002	0.148	1.085	1.577
95.287	5.035	240.480	0.357	7.3681859420E+002	1.0428805310E+002	-9.9584683452E+001	0.133	1.102	1.599
96.058	4.869	240.754	0.361	6.6108308991E+002	9.0257616983E+001	-1.0069284901E+002	0.118	1.120	1.623
96.392	4.803	240.879	0.332	6.2709379965E+002	8.4027186185E+001	-9.6235386878E+001	0.111	1.129	1.636
97.163	4.596	241.121	0.307	5.6272850811E+002	7.2403973270E+001	-8.1345677258E+001	0.098	1.149	1.663
97.934	4.380	241.353	0.296	5.0165518742E+002	6.1557231710E+001	-7.7277427894E+001	0.086	1.172	1.695
98.705	4.155	241.577	0.287	4.4356331533E+002	5.1463503607E+001	-7.1723435944E+001	0.074	1.197	1.731
98.978	4.072	241.652	0.277	4.2434663092E+002	4.8197958188E+001	-7.0159348300E+001	0.070	1.206	1.744
99.500	3.908	241.797	0.279	3.8801360651E+002	4.2218492834E+001	-6.8888044843E+001	0.063	1.227	1.773
100.271	3.667	242.013	0.286	3.3573064494E+002	3.3932415891E+001	-6.9797966835E+001	0.061	1.258	1.819
101.042	3.436	242.238	0.286	2.8038207166E+002	2.5094357895E+001	-6.8784796660E+001	0.061	1.296	1.872
101.538	3.279	242.375	0.292	2.4725407824E+002	1.9955370812E+001	-6.8587947146E+001	0.061	1.324	1.913
102.309	3.047	242.609	0.298	1.9229344404E+002	1.1911075557E+001	-6.7211858505E+001	0.061	1.380	1.994
103.080	2.807	242.835	0.306	1.4361043618E+002	5.7704665585E+000	-6.0205093354E+001	0.061	1.441	2.081

103.851	2.586	243.080	0.321	9.9454542034E+001	1.8298039596E+000	-5.0498122533E+001	0.061	1.507	2.170
104.393	2.435	243.257	0.412	7.4652301507E+001	7.4369972094E-001	-4.9026293964E+001	0.061	1.539	2.218
105.164	2.325	243.621	0.412	3.3244665949E+001	1.1578042140E-001	-4.8411266012E+001	0.061	1.634	2.351

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
ht(m) : Altezza linea di thrust da nodo sinistro base concio
yt(m) : coordinata Y linea di trust
yt'(-) : gradiente pendenza locale linea di trust
E(x)(kN/m) : Forza Normale interconcio
T(x)(kN/m) : Forza Tangenziale interconcio
E' (kN) : derivata Forza normale interconcio
Rho(x) (-) : fattore mobilizzazione resistenza al taglio verticale interconcio ZhU et al.(2003)
FS_qFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by qFEM
FS_srmFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by SRM Procedure
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TABELLA SFORZI DI TAGLIO DISTRIBUITI LUNGO SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	dl (m)	alpha (°)	TauStress (kPa)	TauF (kN/m)	TauStrength (kPa)	TauS (kN/m)
17.753	0.247	0.255	-14.146	-0.304	-0.077	100.139	25.496
18.000	0.771	0.795	-14.146	-1.379	-1.096	100.250	79.712
18.771	0.229	0.236	-14.146	-2.380	-0.562	100.370	23.701
19.000	0.771	0.795	-14.146	-3.612	-2.872	100.751	80.110
19.771	0.771	0.795	-14.146	-5.618	-4.467	101.516	80.718
20.542	0.771	0.795	-14.146	-7.625	-6.063	102.352	81.383
21.313	0.771	0.795	-14.146	-9.631	-7.658	102.825	81.759
22.084	0.771	0.795	-14.146	-11.637	-9.253	103.157	82.024
22.855	0.771	0.795	-14.146	-13.644	-10.848	102.976	81.880
23.626	0.771	0.795	-14.146	-15.650	-12.444	102.996	81.896
24.397	0.103	0.106	-14.146	-16.787	-1.780	102.701	10.893
24.500	0.771	0.795	-14.146	-17.876	-14.214	103.357	82.183
25.271	0.771	0.795	-14.146	-19.788	-15.734	103.624	82.395
26.042	0.771	0.795	-14.146	-21.699	-17.254	104.060	82.742
26.813	0.117	0.120	-14.146	-22.800	-2.744	104.018	12.519
26.930	0.771	0.792	-13.261	-22.241	-17.618	104.048	82.421
27.701	0.771	0.792	-13.261	-23.973	-18.990	104.325	82.640
28.472	0.771	0.792	-13.261	-25.705	-20.362	104.768	82.992
29.243	0.771	0.792	-13.261	-27.437	-21.734	105.238	83.364
30.014	0.226	0.232	-13.261	-28.557	-6.635	104.870	24.366
30.240	0.771	0.792	-13.261	-29.764	-23.577	105.116	83.267
31.011	0.396	0.407	-13.261	-31.206	-12.691	105.257	42.806
31.407	0.593	0.605	-11.452	-27.427	-16.599	105.207	63.670
32.000	0.771	0.787	-11.452	-28.703	-22.580	105.258	82.805
32.771	0.771	0.787	-11.452	-30.077	-23.661	105.291	82.831
33.542	0.771	0.787	-11.452	-31.451	-24.742	105.579	83.057
34.313	0.171	0.175	-11.452	-32.291	-5.642	106.832	18.667
34.484	0.771	0.781	-9.345	-25.925	-20.257	105.529	82.459
35.255	0.771	0.781	-9.345	-26.926	-21.040	105.358	82.326
36.026	0.771	0.781	-9.345	-27.928	-21.823	105.242	82.235
36.797	0.330	0.335	-9.345	-28.643	-9.581	104.733	35.033
37.127	0.771	0.776	-6.707	-18.929	-14.695	103.582	80.414
37.898	0.771	0.776	-6.707	-19.515	-15.150	103.573	80.407
38.669	0.771	0.776	-6.707	-20.102	-15.606	103.773	80.562
39.441	0.189	0.191	-6.707	-20.468	-3.902	103.678	19.766
39.630	0.160	0.161	-4.650	-11.639	-1.870	102.494	16.468
39.790	0.771	0.774	-4.650	-11.849	-9.166	102.328	79.158
40.561	0.771	0.774	-4.650	-12.204	-9.441	102.323	79.154
41.332	0.661	0.663	-4.650	-12.535	-8.309	102.466	67.925
41.993	0.771	0.772	-2.562	-2.714	-2.095	101.343	78.216
42.764	0.236	0.236	-2.562	-2.759	-0.652	101.316	23.956
43.000	0.771	0.772	-2.562	-2.792	-2.155	101.307	78.188
43.771	0.429	0.429	-2.562	-2.827	-1.214	101.293	43.496

44.200	0.261	0.262	-2.562	-2.851	-0.746	101.289	26.493
44.461	0.771	0.771	-0.656	7.000	5.398	100.348	77.376
45.232	0.771	0.771	-0.656	7.140	5.505	100.300	77.339
46.003	0.771	0.771	-0.656	7.279	5.613	100.305	77.342
46.774	0.256	0.256	-0.656	7.372	1.889	100.290	25.703
47.031	0.771	0.771	0.966	16.423	12.664	99.551	76.767
47.802	0.198	0.198	0.966	16.602	3.293	99.550	19.748
48.000	0.771	0.771	0.966	16.795	12.951	99.556	76.771
48.771	0.771	0.771	0.966	17.109	13.193	99.552	76.768
49.542	0.365	0.365	0.966	17.340	6.324	99.545	36.308
49.907	0.771	0.771	1.579	21.181	16.337	99.290	76.584
50.678	0.771	0.771	1.579	21.549	16.621	99.280	76.576
51.449	0.551	0.551	1.579	21.864	12.056	99.290	54.752
52.000	0.598	0.598	1.579	22.104	13.227	99.240	59.384
52.598	0.771	0.772	2.252	26.531	20.472	98.921	76.329
53.369	0.771	0.772	2.252	26.850	20.718	99.068	76.443
54.140	0.771	0.772	2.252	27.169	20.964	99.132	76.492
54.911	0.283	0.283	2.252	27.387	7.761	99.179	28.103
55.194	0.771	0.772	2.954	32.121	24.799	99.040	76.464
55.965	0.771	0.772	2.954	32.476	25.073	99.097	76.507
56.736	0.771	0.772	2.954	32.830	25.347	99.149	76.548
57.507	0.224	0.224	2.954	33.059	7.405	99.188	22.218
57.731	0.269	0.269	3.669	37.907	10.213	99.000	26.673
58.000	0.771	0.773	3.669	38.125	29.455	99.038	76.517
58.771	0.771	0.773	3.669	38.426	29.688	99.042	76.521
59.542	0.738	0.739	3.669	38.721	28.617	99.003	73.171
60.280	0.771	0.773	4.394	43.936	33.975	98.912	76.489
61.051	0.771	0.773	4.394	44.253	34.221	98.981	76.542
61.822	0.771	0.773	4.394	44.570	34.466	99.042	76.589
62.593	0.239	0.240	4.394	44.778	10.754	99.050	23.788
62.832	0.771	0.774	5.096	49.833	38.575	99.065	76.684
63.603	0.771	0.774	5.096	50.161	38.828	99.241	76.821
64.374	0.626	0.628	5.096	50.457	31.703	99.317	62.402
65.000	0.461	0.462	5.096	50.654	23.420	99.409	45.962
65.461	0.771	0.775	5.764	55.505	43.013	99.391	77.022
66.232	0.771	0.775	5.764	55.714	43.175	99.485	77.095
67.003	0.771	0.775	5.764	55.923	43.337	99.591	77.177
67.774	0.448	0.451	5.764	56.089	25.273	99.682	44.917
68.222	0.771	0.776	6.355	60.426	46.878	99.867	77.476
68.993	0.771	0.776	6.355	60.627	47.034	100.033	77.605
69.764	0.736	0.741	6.355	60.824	45.046	100.221	74.224
70.500	0.725	0.730	6.355	60.990	44.516	100.528	73.374
71.225	0.771	0.780	8.754	77.996	60.845	101.018	78.805
71.996	0.771	0.780	8.754	78.064	60.899	101.292	79.019
72.767	0.771	0.780	8.754	78.133	60.952	101.602	79.260
73.538	0.225	0.228	8.754	78.177	17.803	101.944	23.215
73.764	0.771	0.788	11.768	98.715	77.745	102.754	80.927
74.535	0.771	0.788	11.768	98.602	77.657	103.208	81.284
75.306	0.771	0.788	11.768	98.490	77.568	104.026	81.928
76.077	0.083	0.085	11.768	98.428	8.336	103.870	8.797
76.160	0.771	0.799	15.167	120.126	95.963	105.872	84.576
76.931	0.771	0.799	15.167	119.708	95.629	106.762	85.286
77.702	0.692	0.717	15.167	119.311	85.585	107.596	77.181
78.394	0.606	0.639	18.396	137.963	88.123	110.156	70.361
79.000	0.771	0.813	18.396	137.086	111.389	110.271	89.600
79.771	0.771	0.813	18.396	135.965	110.478	112.148	91.125
80.542	0.302	0.318	18.396	135.185	43.034	112.612	35.848
80.844	0.771	0.829	21.511	150.653	124.853	115.537	95.751
81.615	0.771	0.829	21.511	149.036	123.513	114.970	95.281
82.386	0.708	0.761	21.511	147.486	112.163	116.642	88.707
83.094	0.771	0.848	24.536	159.606	135.275	118.269	100.240
83.865	0.771	0.848	24.536	157.438	133.437	117.444	99.541
84.636	0.771	0.848	24.536	155.269	131.599	116.980	99.147
85.407	0.088	0.097	24.536	154.061	14.893	115.851	11.200
85.495	0.771	0.866	27.045	162.441	140.623	120.205	104.060
86.266	0.771	0.866	27.045	159.767	138.308	118.344	102.449

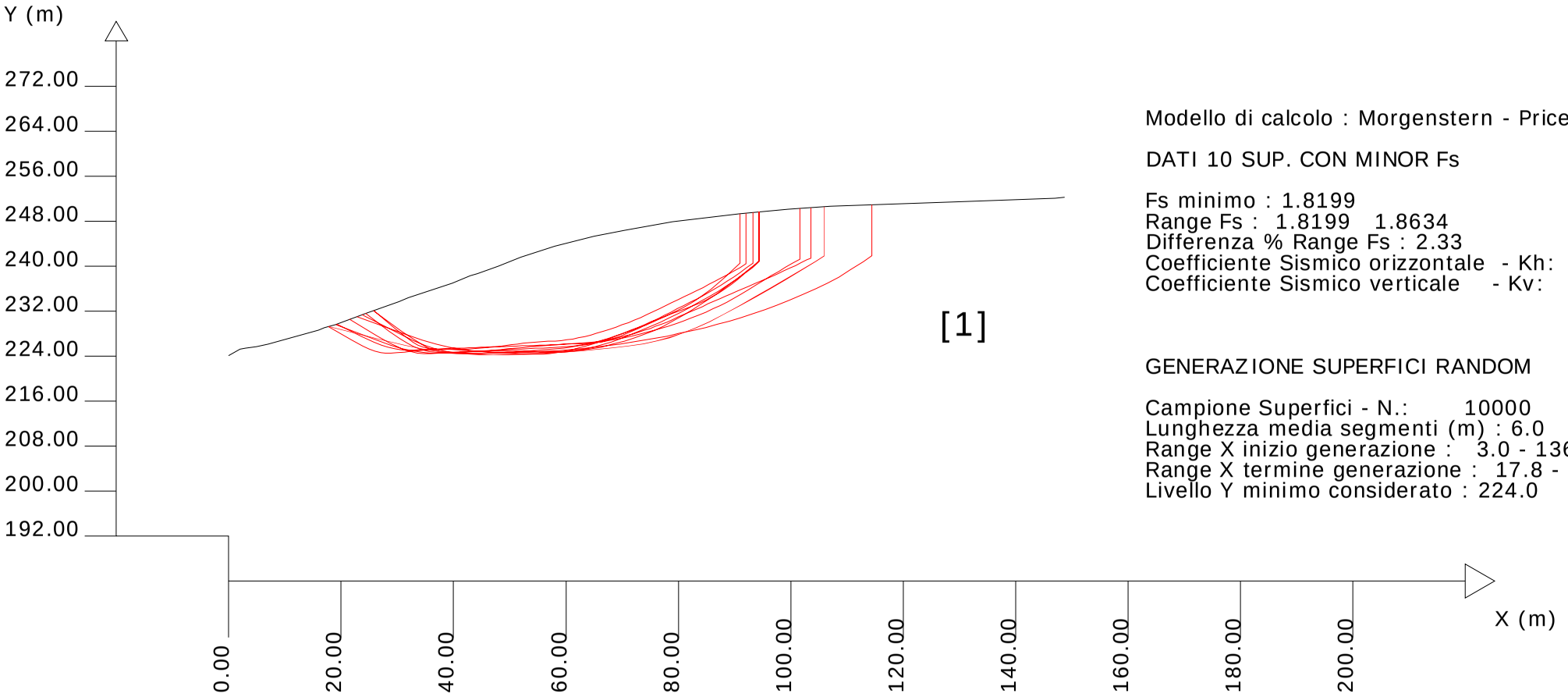
87.037	0.771	0.866	27.045	157.093	135.993	117.557	101.768
87.808	0.229	0.257	27.045	155.359	39.938	116.614	29.978
88.037	0.771	0.881	28.977	159.814	140.854	118.329	104.290
88.808	0.771	0.881	28.977	156.724	138.130	117.937	103.945
89.579	0.771	0.881	28.977	153.633	135.406	117.499	103.559
90.350	0.633	0.723	28.977	150.820	109.092	117.085	84.691
90.983	0.017	0.020	29.354	150.596	3.013	115.793	2.317
91.000	0.771	0.885	29.354	148.897	131.713	115.834	102.466
91.771	0.771	0.885	29.354	145.570	128.771	115.776	102.415
92.542	0.771	0.885	29.354	142.244	125.828	115.707	102.354
93.313	0.432	0.496	29.354	139.649	69.230	114.978	57.000
93.745	0.771	0.888	29.765	138.066	122.630	115.340	102.445
94.516	0.771	0.888	29.765	134.646	119.593	114.807	101.972
95.287	0.771	0.888	29.765	131.226	116.555	114.272	101.496
96.058	0.334	0.385	29.765	128.776	49.549	114.630	44.107
96.392	0.771	0.892	30.187	127.248	113.503	111.925	99.835
97.163	0.771	0.892	30.187	123.731	110.366	111.128	99.125
97.934	0.771	0.892	30.187	120.214	107.229	110.355	98.436
98.705	0.273	0.316	30.187	117.834	37.188	109.469	34.548
98.978	0.522	0.606	30.621	116.867	70.875	109.140	66.189
99.500	0.771	0.896	30.621	113.725	101.892	108.573	97.277
100.271	0.771	0.896	30.621	109.890	98.456	109.144	97.788
101.042	0.496	0.576	30.621	106.739	61.461	108.273	62.344
101.538	0.771	0.901	31.162	104.473	94.133	108.408	97.679
102.309	0.771	0.901	31.162	100.509	90.562	106.418	95.886
103.080	0.771	0.901	31.162	96.545	86.990	104.119	93.814
103.851	0.542	0.634	31.162	93.169	59.044	101.614	64.396
104.393	0.771	0.905	31.590	90.367	81.796	100.661	91.114
105.164	0.771	0.905	31.590	86.300	78.114	100.122	90.626

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
dl(m) : lunghezza base concio
alpha(°) : Angolo pendenza base concio
TauStress(kPa) : Sforzo di taglio su base concio
TauF (kN/m) : Forza di taglio su base concio
TauStrength(kPa) : Resistenza al taglio su base concio
TauS (kN/m) : Forza resistente al taglio su base concio

SSAP 5.0.2 (2021) - Slope Stability Analysis Program
Software by Dr.Geol. L.Borselli - www.lorenzo-borselli.eu
SSAP/DXF generator rel. 2.0 (2020)

Data : 18/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Morgenstern - Price (1965)

DATI 10 SUP. CON MINOR Fs

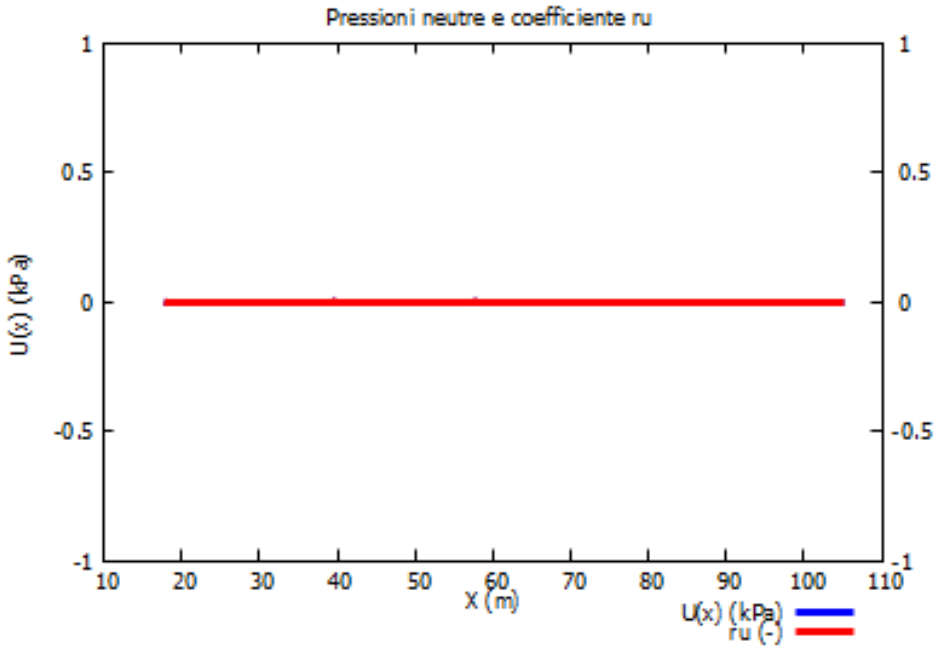
Fs minimo : 1.8199
Range Fs : 1.8199 1.8634
Differenza % Range Fs : 2.33
Coefficiente Sismico orizzontale - Kh: 0.0350
Coefficiente Sismico verticale - Kv: 0.0175

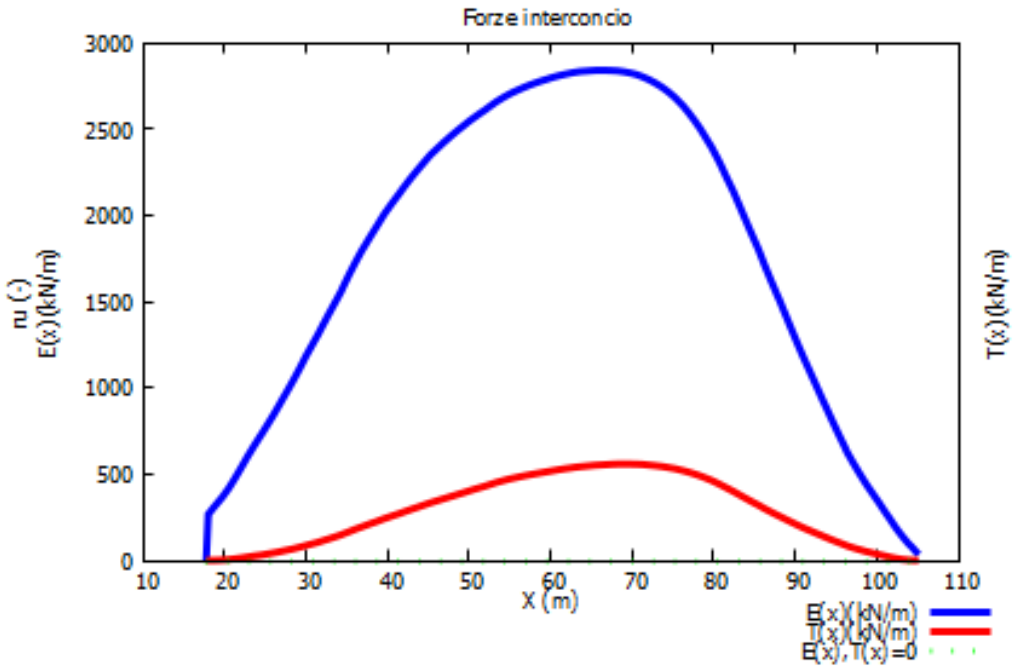
GENERAZIONE SUPERFICI RANDOM

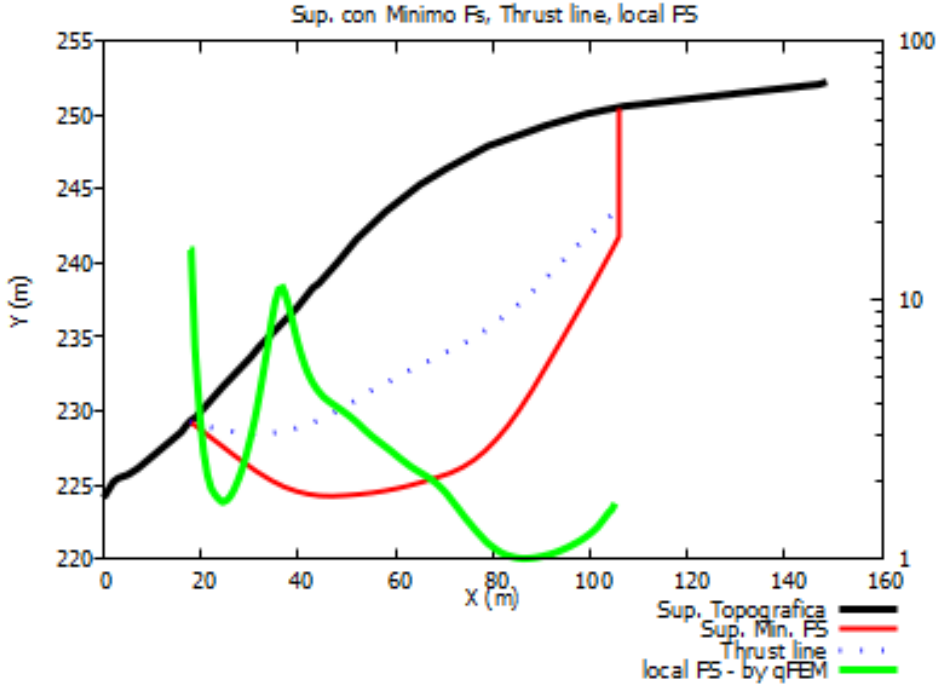
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 6.0
Range X inizio generazione : 3.0 - 136.8
Range X termine generazione : 17.8 - 145.7
Livello Y minimo considerato : 224.0

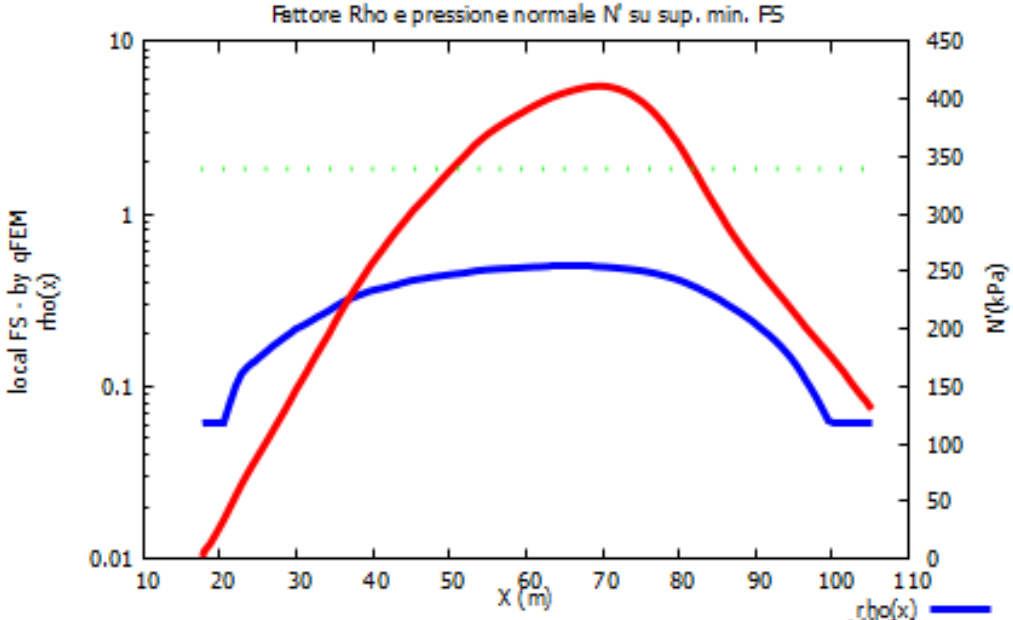
Parametri Geotecnici degli strati # ----------

N.	phi`	C`	Cu	Gamm	GammSat	sgci	GSI	mi	D
..	deg	kPa	kPa	kN/m3	kN/m3	MPa	..	..	..
1	0	0	100.00	20.00	22.00	0	0	0	0





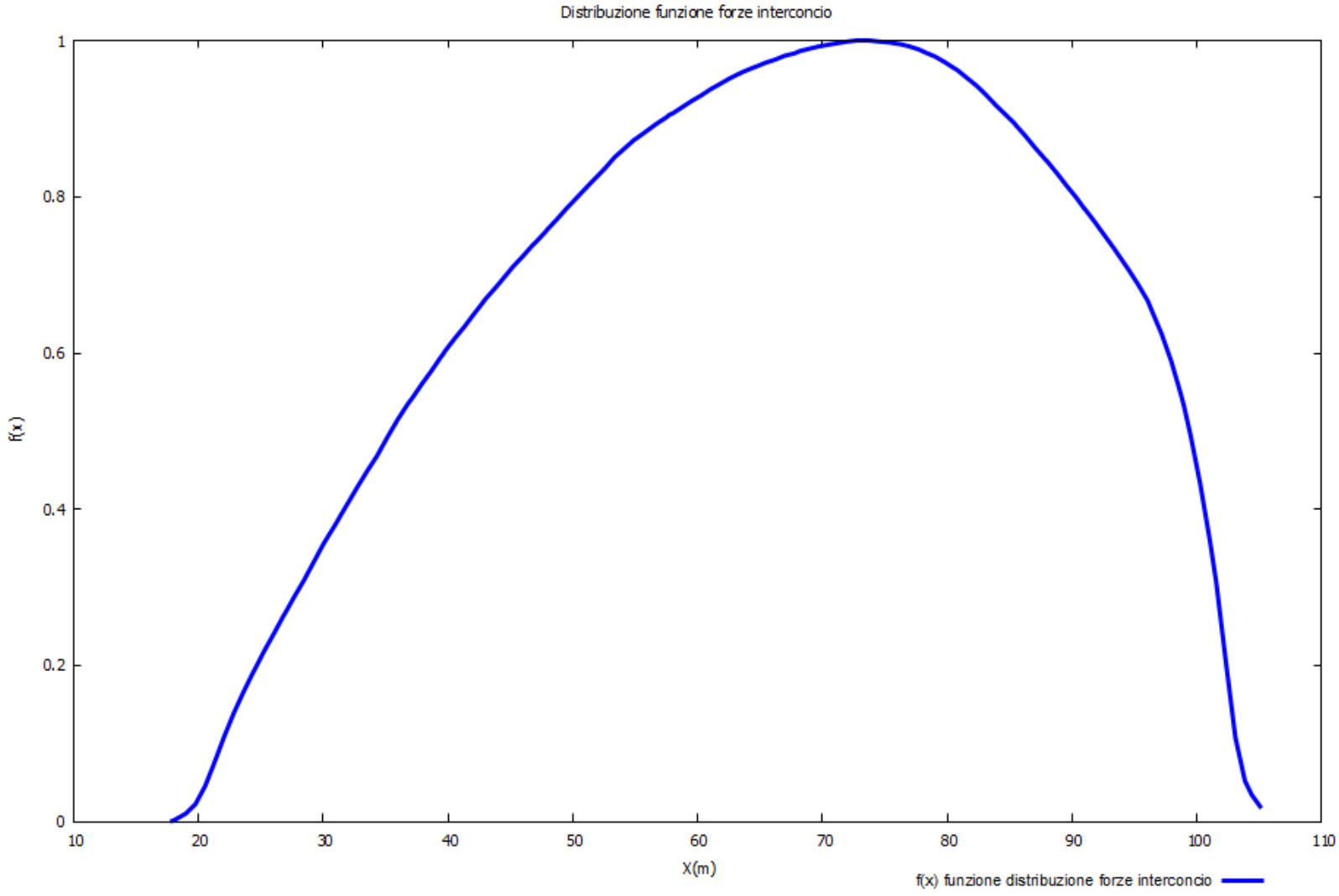


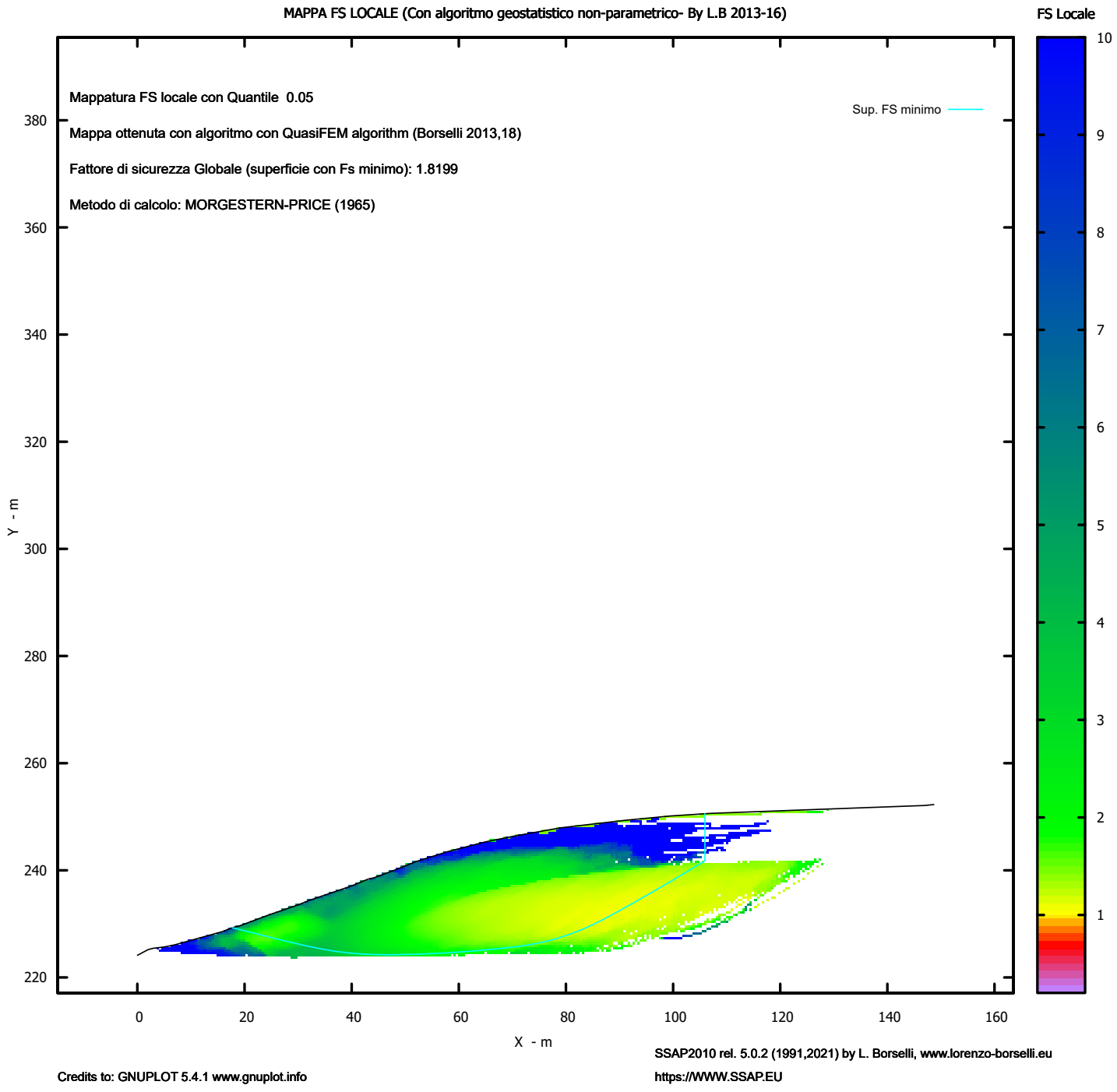


Metodo di calcolo: MORGESTERN-PRICE (1965)

SSAP2010 (versione 5.0.2 - 2021) - DISTRIBUZIONE FORZE e PRESSIONI

18/11/21 14:36


Distribuzione funzione forze interconcio
f(x)
X(m)
f(x) funzione distribuzione forze interconcio
0
0.2
0.4
0.6
0.8
1
10
20
30
40
50
60
70
80
90
100
110


MAPPA FS LOCALE (Con algoritmo geostatistico non-parametrico- By L.B 2013-16)
FS Locale
Mappatura FS locale con Quantile 0.05
Mappa ottenuta con algoritmo con QuasiFEM algorithm (Borselli 2013,18)
Fattore di sicurezza Globale (superficie con Fs minimo): 1.8199
Metodo di calcolo: MORGESTERN-PRICE (1965)
Sup. FS minimo
Y - m
X - m
380
360
340
320
300
280
260
240
220
0
20
40
60
80
100
120
140
160
10
9
8
7
6
5
4
3
2
1
SSAP2010 rel. 5.0.2 (1991,2021) by L. Borselli, www.lorenzo-borselli.eu
https://WWW.SSAP.EU
Credits to: GNUPLOT 5.4.1 www.gnuplot.info

Report elaborazioni

SSAP 5.0.2 - Slope Stability Analysis Program (1991,2021)
WWW.SSAP.EU
Build No. 11893
BY
Dr. Geol. LORENZO BORSELLI *,**
*UASLP, San Luis Potosi, Mexico
e-mail: lborselli@gmail.com
CV e WEB page personale: WWW.LORENZO-BORSELLI.EU
** Gia' Ricercatore CNR-IRPI fino a Luglio 2011

Ultima Revisione struttura tabelle del report: 21 Febbraio 2021

File report: C:\SSAP2010\CRACO SERRACARUSO CAP\VERIFICA 2\NON DRENATA\BERSELLI\BERSELLI.txt
Data: 18/11/2021
Localita' :
Descrizione:
Modello pendio: NONDRENATA.mod

---------- PARAMETRI DEL MODELLO DEL PENDIO ----------

__ PARAMETRI GEOMETRICI - Coordinate X Y (in m) __

SUP T.		SUP 2		SUP 3		SUP 4	
X	Y	X	Y	X	Y	X	Y
0.00	224.12	-	-	-	-	-	-
2.00	225.19	-	-	-	-	-	-
3.00	225.45	-	-	-	-	-	-
5.00	225.68	-	-	-	-	-	-
7.00	226.09	-	-	-	-	-	-
16.00	228.58	-	-	-	-	-	-
17.00	229.02	-	-	-	-	-	-
18.00	229.36	-	-	-	-	-	-
19.00	229.59	-	-	-	-	-	-
24.50	231.65	-	-	-	-	-	-
30.24	233.63	-	-	-	-	-	-
32.00	234.34	-	-	-	-	-	-
39.79	237.00	-	-	-	-	-	-
43.00	238.32	-	-	-	-	-	-
44.20	238.62	-	-	-	-	-	-
48.00	240.01	-	-	-	-	-	-
52.00	241.62	-	-	-	-	-	-
58.00	243.50	-	-	-	-	-	-
65.00	245.31	-	-	-	-	-	-
70.50	246.41	-	-	-	-	-	-
79.00	247.92	-	-	-	-	-	-
91.00	249.32	-	-	-	-	-	-
99.50	250.13	-	-	-	-	-	-
107.00	250.62	-	-	-	-	-	-
130.00	251.48	-	-	-	-	-	-
147.00	252.09	-	-	-	-	-	-
148.68	252.26	-	-	-	-	-	-

ASSENZA DI FALDA

------- PARAMETRI GEOMECCANICI -------

	fi`	C`	Cu	Gamm	Gamm_sat	STR_IDX	sgci	GSI	mi	D
STRATO 1	0.00	0.00	100.00	20.00	22.00	19.086	0.00	0.00	0.00	0.00

LEGENDA: fi`_____ Angolo di attrito interno efficace(in gradi)
C` _____ Coesione efficace (in Kpa)

Cu _____ Resistenza al taglio Non drenata (in Kpa)
Gamm _____ Peso di volume terreno fuori falda (in KN/m^3)
Gamm_sat __ Peso di volume terreno immerso (in KN/m^3)
STR_IDX ___ Indice di resistenza (usato in solo in 'SNIFF SEARCH) (adimensionale)
---- SOLO Per AMMASSI ROCCIOSI FRATTURATI - Parametri Criterio di Rottura di Hoek (2002)-
sigci _____ Resistenza Compressione Uniassiale Roccia Intatta (in MPa)
GSI _____ Geological Strenght Index ammasso(adimensionale)
mi _____ Indice litologico ammasso(adimensionale)
D _____ Fattore di disturbo ammasso(adimensionale)
Fattore di riduzione NTC2018: gammaPHI=1.25 e gammaC=1.25 - DISATTIVATO (solo per ROCCE)
Uso CRITERIO DI ROTTURA Hoek et al.(2002,2006) - non-lineare - Generalizzato, secondo Lei et al.(2016)

---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
MOTORE DI RICERCA: RANDOM SEARCH - Siegel (1981)
FILTRAGGIO SUPERFICI : ATTIVATO
COORDINATE X1,X2,Y OSTACOLO : 0.00 0.00 0.00
LUNGHEZZA MEDIA SEGMENTI (m)*: 6.0 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 2.97 136.79
LIVELLO MINIMO CONSIDERATO (Ymin): 224.00
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 17.84 145.71
TOTALE SUPERFICI GENERATE : 10000
*NOTA IMPORTANTE: La lunghezza media dei segmenti non viene cosiderata nel caso
di uso del motore di recerca NEW RANOM SEARCH

---------- INFORMAZIONI PARAMETRI DI CALCOLO ----------
METODO DI CALCOLO : BORSELLI (Borselli, 2016)
METODO DI ESPLORAZIONE CAMPO VALORI (lambda0,Fs0) ADOTTATO : A (rapido)
COEFFICIENTE SISMICO UTILIZZATO Kh : 0.0350
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0175
COEFFICIENTE c=Kv/Kh UTILIZZATO : 0.5000
FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00

N.B. Le forze orizzontali addizionali in testa e alla base sono poste uguali a 0
durante le tutte le verifiche globali.
I valori >0 impostati dall'utente sono utilizzati solo in caso di verifica singola

---------- RISULTATO FINALE ELABORAZIONI ----------
---
* DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *

Fattore di sicurezza (FS) 1.7992 - Min. - X Y Lambda= 0.1780
18.45 229.46
23.44 227.28
25.81 226.29
27.40 225.71
28.74 225.31
30.04 225.01
31.23 224.80
32.50 224.66
33.84 224.58
35.41 224.55
36.88 224.53
38.28 224.52
39.65 224.53
41.01 224.54
42.36 224.57
43.72 224.61
45.12 224.66
46.56 224.73
47.93 224.81
49.27 224.91
50.60 225.02
51.94 225.16

53.27 225.32
54.61 225.51
55.98 225.71
57.42 225.95
58.81 226.19
60.18 226.43
61.53 226.68
62.89 226.95
64.24 227.22
65.61 227.50
67.00 227.80
68.43 228.12
69.80 228.44
71.15 228.78
72.48 229.13
73.83 229.50
75.16 229.89
76.51 230.31
77.88 230.75
79.32 231.23
80.70 231.71
82.07 232.19
83.42 232.68
84.77 233.19
86.12 233.70
87.47 234.23
88.85 234.78
90.26 235.36
91.64 235.94
93.00 236.52
94.36 237.10
95.72 237.70
97.08 238.31
98.46 238.94
99.89 239.60
101.38 240.29
102.73 240.97
103.47 241.37
103.47 250.39

Fattore di sicurezza (FS) 1.8009 - N.2 -- X Y Lambda= 0.1583
21.76 230.62
27.50 227.78
30.19 226.53
31.96 225.81
33.42 225.33
34.87 224.98
36.16 224.78
37.57 224.65
39.07 224.62
40.89 224.66
42.58 224.69
44.19 224.71
45.76 224.73
47.29 224.73
48.83 224.73
50.38 224.72
51.94 224.71
53.52 224.69
55.07 224.67
56.61 224.67
58.14 224.68
59.68 224.70
61.22 224.73
62.77 224.76

64.36 224.81
66.01 224.88
67.56 224.96
69.06 225.08
70.53 225.23
72.05 225.41
73.53 225.62
75.04 225.87
76.60 226.16
78.28 226.50
79.86 226.84
81.40 227.20
82.91 227.57
84.44 227.97
85.95 228.38
87.50 228.83
89.10 229.32
90.82 229.87
92.37 230.40
93.86 230.97
95.30 231.57
96.81 232.25
98.25 232.95
99.74 233.72
101.26 234.56
102.91 235.52
104.52 236.46
106.10 237.38
107.67 238.30
109.22 239.20
110.78 240.11
112.34 241.02
113.92 241.94
113.92 250.88

Fattore di sicurezza (FS) 1.8133 - N.3 -- X Y Lambda= 0.1663
21.23 230.43
26.81 227.74
29.43 226.56
31.16 225.87
32.59 225.41
34.01 225.08
35.27 224.88
36.64 224.76
38.09 224.72
39.84 224.75
41.49 224.79
43.06 224.81
44.61 224.84
46.11 224.87
47.63 224.90
49.14 224.92
50.66 224.95
52.18 224.98
53.68 224.99
55.18 225.01
56.68 225.01
58.18 225.01
59.70 225.01
61.24 224.99
62.83 224.97
64.50 224.94
65.98 224.96
67.41 225.04
68.77 225.16

70.22 225.36
71.58 225.60
73.00 225.92
74.47 226.30
76.12 226.78
77.72 227.24
79.27 227.69
80.81 228.14
82.31 228.58
83.83 229.01
85.34 229.45
86.85 229.89
88.36 230.33
89.87 230.77
91.37 231.22
92.88 231.66
94.38 232.12
95.90 232.58
97.43 233.05
99.01 233.54
100.64 234.06
102.12 234.57
103.56 235.11
104.95 235.69
106.42 236.36
107.82 237.05
109.28 237.82
110.79 238.67
112.44 239.66
114.01 240.62
115.52 241.56
116.33 242.08
116.33 250.97

Fattore di sicurezza (FS) 1.8391 - N.4 -- X Y Lambda= 0.1726
20.38 230.11
26.27 227.45
29.01 226.29
30.81 225.63
32.28 225.22
33.76 224.94
35.06 224.80
36.49 224.75
38.02 224.81
39.89 224.96
41.63 225.09
43.27 225.21
44.87 225.31
46.44 225.41
48.02 225.50
49.61 225.58
51.24 225.65
52.92 225.72
54.49 225.82
56.03 225.94
57.52 226.10
59.07 226.30
60.56 226.53
62.10 226.80
63.68 227.11
65.39 227.48
67.01 227.85
68.59 228.23
70.15 228.61
71.71 229.02

73.27 229.43
74.86 229.88
76.48 230.35
78.19 230.86
79.77 231.36
81.31 231.90
82.80 232.46
84.34 233.09
85.85 233.74
87.41 234.47
89.06 235.28
90.88 236.21
92.47 237.10
93.99 238.02
95.44 238.98
96.97 240.08
98.31 241.15
98.31 250.02

Fattore di sicurezza (FS) 1.8408 - N.5 -- X Y Lambda= 0.1680
24.29 231.57
29.21 228.03
31.42 226.52
32.81 225.69
33.89 225.18
35.03 224.83
35.97 224.65
37.05 224.59
38.26 224.64
39.88 224.80
41.33 224.94
42.68 225.06
43.97 225.17
45.23 225.26
46.49 225.35
47.76 225.42
49.05 225.49
50.38 225.56
51.65 225.60
52.90 225.63
54.13 225.65
55.39 225.64
56.63 225.62
57.90 225.59
59.21 225.53
60.61 225.46
61.88 225.42
63.11 225.42
64.30 225.45
65.53 225.53
66.73 225.63
67.98 225.78
69.30 225.97
70.78 226.21
72.07 226.47
73.29 226.76
74.45 227.08
75.68 227.48
76.84 227.90
78.05 228.39
79.30 228.94
80.69 229.61
82.03 230.24
83.32 230.84
84.60 231.42

85.86 232.00
87.13 232.56
88.41 233.13
89.73 233.70
91.09 234.29
92.35 234.86
93.57 235.46
94.76 236.09
96.00 236.78
97.19 237.49
98.42 238.26
99.69 239.09
101.06 240.03
102.37 240.95
103.06 241.44
103.06 250.36

Fattore di sicurezza (FS) 1.8438 - N.6 -- X Y Lambda= 0.1590
18.17 229.40
26.14 227.46
30.08 226.56
32.81 226.01
35.17 225.60
37.38 225.31
39.50 225.09
41.69 224.92
43.97 224.82
46.48 224.76
48.81 224.74
51.07 224.75
53.27 224.80
55.50 224.88
57.69 225.00
59.92 225.15
62.19 225.34
64.58 225.57
66.89 225.81
69.15 226.07
71.38 226.35
73.62 226.65
75.87 226.97
78.16 227.31
80.53 227.69
83.05 228.12
85.29 228.57
87.45 229.08
89.51 229.65
91.70 230.34
93.79 231.09
95.98 231.97
98.29 232.97
100.91 234.20
103.25 235.36
105.48 236.54
107.61 237.76
109.83 239.10
112.20 240.66
114.63 242.34
114.63 250.91

Fattore di sicurezza (FS) 1.8545 - N.7 -- X Y Lambda= 0.1697
19.29 229.70
25.41 227.35
28.32 226.30

30.28 225.68
31.92 225.27
33.53 224.98
34.99 224.79
36.55 224.69
38.21 224.65
40.15 224.69
41.94 224.75
43.66 224.82
45.33 224.90
46.99 225.01
48.63 225.13
50.30 225.27
51.99 225.43
53.75 225.61
55.44 225.80
57.11 226.01
58.76 226.23
60.42 226.47
62.09 226.72
63.80 227.00
65.59 227.31
67.51 227.66
69.16 228.03
70.73 228.46
72.21 228.95
73.82 229.56
75.31 230.22
76.89 231.00
78.55 231.91
80.45 233.02
82.23 234.05
83.95 235.03
85.62 235.96
87.29 236.87
88.94 237.75
90.61 238.63
92.29 239.50
94.02 240.37
94.73 240.74
94.73 249.68

Fattore di sicurezza (FS) 1.8554 - N.8 -- X Y Lambda= 0.1480
23.95 231.44
28.83 228.08
31.05 226.63
32.48 225.81
33.61 225.28
34.78 224.90
35.77 224.68
36.88 224.56
38.10 224.53
39.68 224.58
41.13 224.63
42.48 224.66
43.79 224.69
45.06 224.72
46.33 224.74
47.61 224.76
48.89 224.77
50.18 224.77
51.47 224.78
52.75 224.78
54.02 224.78
55.30 224.77

56.58 224.77
57.86 224.76
59.14 224.74
60.42 224.73
61.70 224.71
62.98 224.70
64.26 224.68
65.54 224.66
66.83 224.63
68.13 224.61
69.45 224.58
70.80 224.56
72.06 224.55
73.30 224.58
74.51 224.63
75.77 224.71
76.98 224.81
78.22 224.94
79.49 225.11
80.85 225.31
82.17 225.50
83.46 225.68
84.74 225.85
86.02 226.02
87.29 226.18
88.59 226.34
89.90 226.49
91.25 226.65
92.52 226.82
93.77 227.01
94.99 227.22
96.25 227.46
97.48 227.72
98.75 228.02
100.07 228.35
101.50 228.74
102.79 229.13
104.03 229.54
105.23 229.97
106.48 230.47
107.68 230.99
108.93 231.57
110.24 232.22
111.70 232.98
113.01 233.71
114.26 234.45
115.47 235.21
116.72 236.04
117.92 236.89
119.15 237.81
120.42 238.80
121.78 239.90
123.10 240.98
124.41 242.03
125.24 242.70
125.24 251.30

Fattore di sicurezza (FS) 1.8555 - N.9 -- X Y Lambda= 0.1612
18.72 229.53
26.86 227.40
30.88 226.41
33.66 225.80
36.06 225.35
38.32 225.01
40.49 224.76

42.77 224.56
45.17 224.42
47.88 224.32
50.23 224.31
52.45 224.38
54.55 224.54
56.77 224.81
58.88 225.14
61.10 225.59
63.47 226.16
66.19 226.90
68.58 227.62
70.85 228.37
73.01 229.18
75.25 230.10
77.39 231.05
79.61 232.13
81.90 233.32
84.42 234.70
86.83 236.04
89.16 237.36
91.46 238.69
93.75 240.04
95.15 240.88
95.15 249.72

Fattore di sicurezza (FS) 1.8576 - N.10 -- X Y Lambda= 0.1555
23.24 231.18
30.57 228.13
34.05 226.77
36.39 225.97
38.35 225.42
40.27 225.03
42.00 224.77
43.86 224.60
45.82 224.53
48.11 224.53
50.27 224.54
52.34 224.56
54.38 224.59
56.37 224.62
58.41 224.67
60.48 224.72
62.65 224.78
64.95 224.86
66.90 225.00
68.76 225.24
70.48 225.57
72.39 226.05
74.13 226.59
75.99 227.29
77.96 228.13
80.25 229.20
82.41 230.21
84.48 231.16
86.52 232.09
88.51 232.99
90.53 233.88
92.56 234.78
94.66 235.69
96.82 236.62
98.81 237.54
100.73 238.50
102.60 239.50
104.56 240.62

106.01 241.53
106.01 250.56

---------- ANALISI DEFICIT DI RESISTENZA ----------
DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *
Analisi Deficit in riferimento a FS(progetto) = 1.100

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	1.799	9205.4	5116.4	3577.3	Surplus
2	1.801	10166.8	5645.3	3957.0	Surplus
3	1.813	10368.1	5717.8	4078.5	Surplus
4	1.839	8607.6	4680.3	3459.2	Surplus
5	1.841	8997.3	4887.7	3620.8	Surplus
6	1.844	10454.2	5669.8	4217.4	Surplus
7	1.854	8380.0	4518.8	3409.3	Surplus
8	1.855	11306.8	6093.9	4603.5	Surplus
9	1.855	8539.9	4602.6	3477.1	Surplus
10	1.858	9292.5	5002.4	3789.8	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 3409.3

Note: FTR --> Forza totale Resistente lungo la superficie
di scivolamento
FTA --> Forza totale Agente lungo la superficie
di scivolamento

IMPORTANTE! : Il Deficit o il Surplus di resistenza viene espresso in kN
per metro di LARGHEZZA rispetto al fronte della scarpata

TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (°)	W (kN/m)	ru (-)	U (kPa)	phi' (°)	(c',Cu) (kPa)
18.445	0.555	-23.65	2.09	0.00	0.00	0.00	100.00
19.000	0.739	-23.65	10.09	0.00	0.00	0.00	100.00
19.739	0.739	-23.65	19.13	0.00	0.00	0.00	100.00
20.479	0.739	-23.65	28.16	0.00	0.00	0.00	100.00
21.218	0.739	-23.65	37.20	0.00	0.00	0.00	100.00
21.957	0.739	-23.65	46.23	0.00	0.00	0.00	100.00
22.696	0.739	-23.65	55.27	0.00	0.00	0.00	100.00
23.436	0.001	-23.65	0.11	0.00	0.00	0.00	100.00
23.437	0.739	-22.52	64.19	0.00	0.00	0.00	100.00
24.176	0.324	-22.52	30.88	0.00	0.00	0.00	100.00
24.500	0.739	-22.52	76.64	0.00	0.00	0.00	100.00
25.239	0.569	-22.52	64.71	0.00	0.00	0.00	100.00
25.808	0.739	-20.03	91.31	0.00	0.00	0.00	100.00
26.547	0.739	-20.03	99.20	0.00	0.00	0.00	100.00
27.286	0.117	-20.03	16.44	0.00	0.00	0.00	100.00
27.404	0.739	-16.90	108.01	0.00	0.00	0.00	100.00
28.143	0.595	-16.90	92.12	0.00	0.00	0.00	100.00
28.738	0.739	-12.90	120.61	0.00	0.00	0.00	100.00
29.477	0.565	-12.90	96.47	0.00	0.00	0.00	100.00
30.042	0.198	-9.71	34.72	0.00	0.00	0.00	100.00
30.240	0.739	-9.71	133.41	0.00	0.00	0.00	100.00
30.979	0.249	-9.71	46.33	0.00	0.00	0.00	100.00
31.228	0.739	-6.39	141.63	0.00	0.00	0.00	100.00
31.967	0.033	-6.39	6.40	0.00	0.00	0.00	100.00
32.000	0.497	-6.39	98.48	0.00	0.00	0.00	100.00
32.497	0.739	-3.48	150.38	0.00	0.00	0.00	100.00
33.236	0.602	-3.48	125.66	0.00	0.00	0.00	100.00
33.838	0.739	-1.16	158.26	0.00	0.00	0.00	100.00

34.577	0.739	-1.16	162.29	0.00	0.00	0.00	100.00
35.316	0.097	-1.16	21.65	0.00	0.00	0.00	100.00
35.414	0.739	-0.74	166.80	0.00	0.00	0.00	100.00
36.153	0.728	-0.74	168.07	0.00	0.00	0.00	100.00
36.881	0.739	-0.28	174.57	0.00	0.00	0.00	100.00
37.620	0.663	-0.28	159.73	0.00	0.00	0.00	100.00
38.283	0.739	0.20	181.83	0.00	0.00	0.00	100.00
39.022	0.629	0.20	157.57	0.00	0.00	0.00	100.00
39.651	0.139	0.70	35.32	0.00	0.00	0.00	100.00
39.790	0.739	0.70	189.82	0.00	0.00	0.00	100.00
40.529	0.477	0.70	124.89	0.00	0.00	0.00	100.00
41.006	0.739	1.17	197.07	0.00	0.00	0.00	100.00
41.746	0.611	1.17	166.20	0.00	0.00	0.00	100.00
42.357	0.643	1.65	178.06	0.00	0.00	0.00	100.00
43.000	0.723	1.65	203.21	0.00	0.00	0.00	100.00
43.723	0.477	2.11	135.28	0.00	0.00	0.00	100.00
44.200	0.739	2.11	212.30	0.00	0.00	0.00	100.00
44.939	0.176	2.11	51.18	0.00	0.00	0.00	100.00
45.116	0.739	2.55	216.79	0.00	0.00	0.00	100.00
45.855	0.703	2.55	209.60	0.00	0.00	0.00	100.00
46.558	0.739	3.34	223.69	0.00	0.00	0.00	100.00
47.298	0.632	3.34	193.99	0.00	0.00	0.00	100.00
47.930	0.070	4.20	21.74	0.00	0.00	0.00	100.00
48.000	0.739	4.20	230.46	0.00	0.00	0.00	100.00
48.739	0.535	4.20	169.13	0.00	0.00	0.00	100.00
49.274	0.739	5.09	236.69	0.00	0.00	0.00	100.00
50.014	0.582	5.09	188.86	0.00	0.00	0.00	100.00
50.596	0.739	5.97	242.83	0.00	0.00	0.00	100.00
51.335	0.609	5.97	202.43	0.00	0.00	0.00	100.00
51.944	0.056	6.85	18.77	0.00	0.00	0.00	100.00
52.000	0.739	6.85	248.53	0.00	0.00	0.00	100.00
52.739	0.526	6.85	178.08	0.00	0.00	0.00	100.00
53.265	0.739	7.73	252.12	0.00	0.00	0.00	100.00
54.004	0.605	7.73	207.63	0.00	0.00	0.00	100.00
54.609	0.739	8.57	255.63	0.00	0.00	0.00	100.00
55.348	0.630	8.57	219.30	0.00	0.00	0.00	100.00
55.978	0.739	9.35	258.90	0.00	0.00	0.00	100.00
56.717	0.699	9.35	246.24	0.00	0.00	0.00	100.00
57.416	0.584	9.73	206.82	0.00	0.00	0.00	100.00
58.000	0.739	9.73	263.02	0.00	0.00	0.00	100.00
58.739	0.070	9.73	25.10	0.00	0.00	0.00	100.00
58.810	0.739	10.13	264.04	0.00	0.00	0.00	100.00
59.549	0.629	10.13	225.50	0.00	0.00	0.00	100.00
60.178	0.739	10.54	265.64	0.00	0.00	0.00	100.00
60.918	0.615	10.54	221.77	0.00	0.00	0.00	100.00
61.533	0.739	10.94	267.08	0.00	0.00	0.00	100.00
62.272	0.618	10.94	223.77	0.00	0.00	0.00	100.00
62.890	0.739	11.35	268.37	0.00	0.00	0.00	100.00
63.629	0.615	11.35	223.63	0.00	0.00	0.00	100.00
64.244	0.739	11.75	269.51	0.00	0.00	0.00	100.00
64.983	0.017	11.75	6.08	0.00	0.00	0.00	100.00
65.000	0.611	11.75	222.95	0.00	0.00	0.00	100.00
65.611	0.739	12.14	269.64	0.00	0.00	0.00	100.00
66.350	0.651	12.14	237.22	0.00	0.00	0.00	100.00
67.001	0.739	12.52	269.29	0.00	0.00	0.00	100.00
67.740	0.693	12.52	252.08	0.00	0.00	0.00	100.00
68.433	0.739	13.24	268.74	0.00	0.00	0.00	100.00
69.172	0.631	13.24	229.11	0.00	0.00	0.00	100.00
69.803	0.697	14.00	252.55	0.00	0.00	0.00	100.00
70.500	0.650	14.00	235.21	0.00	0.00	0.00	100.00
71.150	0.739	14.79	266.51	0.00	0.00	0.00	100.00
71.890	0.588	14.79	211.32	0.00	0.00	0.00	100.00
72.478	0.739	15.56	264.70	0.00	0.00	0.00	100.00
73.217	0.611	15.56	217.85	0.00	0.00	0.00	100.00
73.828	0.739	16.34	262.57	0.00	0.00	0.00	100.00
74.567	0.589	16.34	208.41	0.00	0.00	0.00	100.00

75.156	0.739	17.10	260.19	0.00	0.00	0.00	100.00
75.896	0.610	17.10	213.51	0.00	0.00	0.00	100.00
76.505	0.739	17.84	257.47	0.00	0.00	0.00	100.00
77.245	0.635	17.84	219.80	0.00	0.00	0.00	100.00
77.879	0.739	18.52	254.41	0.00	0.00	0.00	100.00
78.619	0.381	18.52	130.54	0.00	0.00	0.00	100.00
79.000	0.316	18.52	107.72	0.00	0.00	0.00	100.00
79.316	0.739	18.98	250.34	0.00	0.00	0.00	100.00
80.055	0.649	18.98	217.66	0.00	0.00	0.00	100.00
80.704	0.739	19.46	245.54	0.00	0.00	0.00	100.00
81.443	0.625	19.46	205.43	0.00	0.00	0.00	100.00
82.068	0.739	19.95	240.63	0.00	0.00	0.00	100.00
82.807	0.609	19.95	196.32	0.00	0.00	0.00	100.00
83.417	0.739	20.43	235.58	0.00	0.00	0.00	100.00
84.156	0.616	20.43	194.23	0.00	0.00	0.00	100.00
84.772	0.739	20.92	230.31	0.00	0.00	0.00	100.00
85.512	0.606	20.92	186.66	0.00	0.00	0.00	100.00
86.118	0.739	21.39	224.88	0.00	0.00	0.00	100.00
86.857	0.618	21.39	185.55	0.00	0.00	0.00	100.00
87.475	0.739	21.86	219.21	0.00	0.00	0.00	100.00
88.214	0.635	21.86	185.72	0.00	0.00	0.00	100.00
88.849	0.739	22.30	213.28	0.00	0.00	0.00	100.00
89.588	0.671	22.30	190.90	0.00	0.00	0.00	100.00
90.260	0.739	22.65	207.01	0.00	0.00	0.00	100.00
90.999	0.001	22.65	0.32	0.00	0.00	0.00	100.00
91.000	0.640	22.65	176.36	0.00	0.00	0.00	100.00
91.640	0.739	23.00	200.41	0.00	0.00	0.00	100.00
92.379	0.624	23.00	166.33	0.00	0.00	0.00	100.00
93.003	0.739	23.37	193.61	0.00	0.00	0.00	100.00
93.742	0.615	23.37	158.17	0.00	0.00	0.00	100.00
94.357	0.739	23.73	186.71	0.00	0.00	0.00	100.00
95.096	0.619	23.73	153.31	0.00	0.00	0.00	100.00
95.715	0.739	24.09	179.64	0.00	0.00	0.00	100.00
96.454	0.625	24.09	148.87	0.00	0.00	0.00	100.00
97.080	0.739	24.45	172.37	0.00	0.00	0.00	100.00
97.819	0.645	24.45	147.09	0.00	0.00	0.00	100.00
98.464	0.739	24.80	164.85	0.00	0.00	0.00	100.00
99.203	0.297	24.80	65.08	0.00	0.00	0.00	100.00
99.500	0.387	24.80	83.84	0.00	0.00	0.00	100.00
99.887	0.739	25.12	156.61	0.00	0.00	0.00	100.00
100.627	0.739	25.12	152.13	0.00	0.00	0.00	100.00
101.366	0.010	25.12	1.97	0.00	0.00	0.00	100.00
101.376	0.739	26.69	147.39	0.00	0.00	0.00	100.00
102.115	0.613	26.69	118.48	0.00	0.00	0.00	100.00
102.728	0.739	28.44	138.28	0.00	0.00	0.00	100.00

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
alpha(°) : Angolo pendenza base concio
W(kN/m) : Forza peso concio
ru(-) : Coefficiente locale pressione interstiziale
U(kPa) : Pressione totale dei pori base concio
phi'(°) : Angolo di attrito efficace base concio
c'/Cu (kPa) : Coesione efficace o Resistenza al taglio in condizioni non drenate
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TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	ht (m)	yt (m)	yt' (--)	E(x) (kN/m)	T(x) (kN/m)	E' (kN)	rho(x) (--)	FS_qFEM (--)	FS_srmFEM (--)
18.445	0.000	229.462	-0.248	0.0000000000E+000	0.0000000000E+000	5.8470800751E+001	0.060	4.078	4.283
19.000	0.093	229.312	-0.248	4.1898985610E+001	4.9747577864E-001	9.2650660340E+001	0.060	4.078	4.283
19.739	0.245	229.141	-0.227	1.2723548461E+002	1.9347338002E+000	1.0173492058E+002	0.060	2.072	2.191

20.479	0.405	228.977	-0.229	1.9231649200E+002	4.5723288737E+000	9.6090293925E+001	0.060	1.569	1.657
21.218	0.554	228.803	-0.230	2.6930727587E+002	1.0011885550E+001	1.0747721514E+002	0.083	1.444	1.507
21.957	0.712	228.637	-0.199	3.5122411784E+002	1.7011814388E+001	1.0279070831E+002	0.110	1.449	1.482
22.696	0.908	228.509	-0.164	4.2128578959E+002	2.3732832940E+001	9.6653681058E+001	0.127	1.505	1.503
23.436	1.117	228.394	-0.156	4.9412889041E+002	3.1848334940E+001	9.8815216500E+001	0.144	1.609	1.553
23.437	1.117	228.394	-0.142	4.9426548884E+002	3.1864613890E+001	9.8807505720E+001	0.144	1.609	1.553
24.176	1.318	228.289	-0.139	5.6405446539E+002	3.9962975765E+001	9.2322587993E+001	0.158	1.713	1.593
24.500	1.410	228.246	-0.130	5.9365194774E+002	4.3580339134E+001	9.3722662529E+001	0.163	1.772	1.617
25.239	1.621	228.151	-0.125	6.6683910114E+002	5.3153651187E+001	1.0123001542E+002	0.178	1.964	1.693
25.808	1.788	228.082	-0.113	7.2538372794E+002	6.1347670700E+001	1.0552776091E+002	0.190	2.180	1.770
26.547	1.979	228.003	-0.098	8.0587810486E+002	7.3484006028E+001	1.1035627517E+002	0.209	2.581	1.896
27.286	2.182	227.937	-0.087	8.8854811271E+002	8.6796962579E+001	1.1258551049E+002	0.228	3.157	2.045
27.404	2.216	227.928	-0.065	9.0174904744E+002	8.9033383074E+001	1.1237841707E+002	0.231	3.269	2.070
28.143	2.394	227.881	-0.056	9.8329967750E+002	1.0310538927E+002	1.0862018866E+002	0.250	4.157	2.243
28.738	2.547	227.854	-0.030	1.0470814045E+003	1.1455379139E+002	1.0023236917E+002	0.264	5.162	2.396
29.477	2.703	227.841	-0.009	1.1147225713E+003	1.2739163926E+002	8.4178973999E+001	0.279	6.598	2.579
30.042	2.834	227.842	0.006	1.1591170494E+003	1.3620162697E+002	7.9015603644E+001	0.286	7.703	2.711
30.240	2.871	227.846	0.029	1.1748151588E+003	1.3943251572E+002	7.8821669808E+001	0.290	8.054	2.759
30.979	3.022	227.869	0.036	1.2321347800E+003	1.5162774784E+002	7.2697504074E+001	0.300	8.860	2.952
31.228	3.076	227.881	0.053	1.2498152018E+003	1.5555004154E+002	7.0463940550E+001	0.303	8.883	3.016
31.967	3.200	227.922	0.056	1.3005770026E+003	1.6709295674E+002	6.4575331216E+001	0.313	8.691	3.214
32.000	3.205	227.924	0.069	1.3026825983E+003	1.6758688344E+002	6.4536605318E+001	0.313	8.667	3.223
32.497	3.296	227.958	0.079	1.3358412554E+003	1.7545468040E+002	6.4090036093E+001	0.321	8.269	3.368
33.236	3.404	228.021	0.091	1.3803531983E+003	1.8667591720E+002	5.9558021598E+001	0.331	7.341	3.581
33.838	3.499	228.081	0.109	1.4158600857E+003	1.9601752576E+002	5.9410865592E+001	0.340	6.613	3.771
34.577	3.601	228.167	0.130	1.4601295489E+003	2.0821798399E+002	6.2107889000E+001	0.352	5.848	4.034
35.316	3.722	228.273	0.144	1.5076880808E+003	2.2185702731E+002	6.2308209424E+001	0.365	5.217	4.346
35.414	3.738	228.288	0.154	1.5137235003E+003	2.2363327513E+002	6.1760725406E+001	0.367	5.151	4.387
36.153	3.862	228.402	0.157	1.5578015886E+003	2.3686556572E+002	5.8092407044E+001	0.380	4.754	4.696
36.881	3.988	228.518	0.162	1.5989868259E+003	2.4947793688E+002	5.4942664992E+001	0.391	4.487	4.987
37.620	4.112	228.639	0.161	1.6383714706E+003	2.6166635558E+002	5.0004096273E+001	0.401	4.296	5.241
38.283	4.220	228.744	0.160	1.6695597515E+003	2.7137711377E+002	4.6449970976E+001	0.408	4.180	5.394
39.022	4.337	228.863	0.162	1.7033853959E+003	2.8192031285E+002	4.4456000658E+001	0.415	4.072	5.499
39.651	4.437	228.965	0.164	1.7306356263E+003	2.9043123709E+002	4.4687888176E+001	0.421	3.992	5.508
39.790	4.459	228.989	0.182	1.7369081128E+003	2.9240260744E+002	4.5053936298E+001	0.422	3.974	5.504
40.529	4.586	229.125	0.179	1.7704868430E+003	3.0303905164E+002	4.2089759665E+001	0.427	3.879	5.386
41.006	4.662	229.207	0.173	1.7895463368E+003	3.0913080167E+002	3.9493420014E+001	0.429	3.828	5.262
41.746	4.775	229.335	0.175	1.8182323777E+003	3.1840100680E+002	3.8155059857E+001	0.433	3.748	5.030
42.357	4.870	229.443	0.183	1.8412233668E+003	3.2595778585E+002	3.8109297119E+001	0.435	3.681	4.812
43.000	4.974	229.565	0.194	1.8660634044E+003	3.3432756407E+002	3.8473976584E+001	0.438	3.604	4.551
43.723	5.096	229.707	0.200	1.8937619201E+003	3.4391149115E+002	3.7923166758E+001	0.446	3.510	4.240
44.200	5.175	229.805	0.204	1.9117267400E+003	3.5025686687E+002	3.6901660385E+001	0.450	3.446	4.039
44.939	5.299	229.955	0.201	1.9381237064E+003	3.5977330802E+002	3.1899990537E+001	0.455	3.346	3.751
45.116	5.326	229.989	0.194	1.9435881198E+003	3.6179391421E+002	3.0852903237E+001	0.455	3.323	3.690
45.855	5.437	230.133	0.194	1.9659654890E+003	3.7022496230E+002	2.8740502680E+001	0.458	3.223	3.443
46.558	5.541	230.268	0.206	1.9851584803E+003	3.7771874349E+002	2.7119502126E+001	0.461	3.129	3.236
47.298	5.659	230.430	0.218	2.0050781001E+003	3.8591968876E+002	2.5363575870E+001	0.463	3.018	3.022
47.930	5.760	230.567	0.217	2.0202563662E+003	3.9245800447E+002	2.2287829186E+001	0.465	2.924	2.862
48.000	5.770	230.582	0.225	2.0218106414E+003	3.9314473941E+002	2.2015598680E+001	0.465	2.914	2.846
48.739	5.883	230.749	0.229	2.0374607037E+003	4.0037441924E+002	2.0114033154E+001	0.467	2.806	2.679
49.274	5.969	230.875	0.234	2.0478164746E+003	4.0544172769E+002	1.8165093663E+001	0.467	2.726	2.569
50.014	6.076	231.048	0.231	2.0600356082E+003	4.1189987995E+002	1.4717055203E+001	0.468	2.621	2.432
50.596	6.157	231.180	0.225	2.0677733472E+003	4.1643292987E+002	1.1949093143E+001	0.467	2.544	2.340
51.335	6.244	231.345	0.224	2.0753480277E+003	4.2153798565E+002	8.9437358717E+000	0.467	2.450	2.236
51.944	6.317	231.482	0.223	2.0801392630E+003	4.2535990767E+002	6.1639033602E+000	0.466	2.376	2.159
52.000	6.322	231.494	0.228	2.0804762675E+003	4.2566875535E+002	5.9381427527E+000	0.466	2.370	2.152
52.739	6.403	231.663	0.237	2.0841999603E+003	4.2981713898E+002	3.6512094800E+000	0.466	2.283	2.065
53.265	6.470	231.793	0.244	2.0856015328E+003	4.3258061335E+002	1.0603500403E+000	0.466	2.220	2.004
54.004	6.549	231.972	0.245	2.0847171050E+003	4.3556909369E+002	-2.6966575856E+000	0.466	2.140	1.928
54.609	6.617	232.122	0.251	2.0823452594E+003	4.3756740005E+002	-5.0374065732E+000	0.465	2.077	1.871
55.348	6.692	232.309	0.252	2.0776142909E+003	4.3948207349E+002	-7.5369135168E+000	0.464	2.006	1.806
55.978	6.755	232.467	0.253	2.0722547630E+003	4.4061759563E+002	-9.5763024401E+000	0.462	1.951	1.756
56.717	6.822	232.656	0.249	2.0642472305E+003	4.4138372184E+002	-1.1635225313E+001	0.460	1.893	1.702
57.416	6.877	232.826	0.236	2.0555861522E+003	4.4148831591E+002	-1.3092059845E+001	0.457	1.846	1.658
58.000	6.909	232.958	0.218	2.0476033431E+003	4.4102912178E+002	-1.3969614493E+001	0.455	1.813	1.627
58.739	6.938	233.114	0.210	2.0370000279E+003	4.3991488506E+002	-1.4667525928E+001	0.452	1.777	1.594

58.810	6.940	233.128	0.212	2.0359652608E+003	4.3977860597E+002	-1.4854891585E+001	0.452	1.774	1.591
59.549	6.966	233.286	0.221	2.0237689299E+003	4.3791149555E+002	-1.8209950931E+001	0.448	1.741	1.561
60.178	6.998	233.430	0.236	2.0113903932E+003	4.3560908050E+002	-2.0794353236E+001	0.445	1.714	1.536
60.918	7.039	233.609	0.239	1.9950394429E+003	4.3224555744E+002	-2.2542216714E+001	0.440	1.682	1.508
61.533	7.069	233.754	0.236	1.9809483126E+003	4.2914377049E+002	-2.3504086589E+001	0.436	1.658	1.487
62.272	7.101	233.929	0.235	1.9630321739E+003	4.2502347761E+002	-2.4788319654E+001	0.430	1.630	1.463
62.890	7.127	234.073	0.229	1.9474314554E+003	4.2132371509E+002	-2.5554512371E+001	0.425	1.608	1.445
63.629	7.144	234.239	0.223	1.9282711614E+003	4.1667553043E+002	-2.5974914851E+001	0.420	1.583	1.425
64.244	7.157	234.376	0.210	1.9122760402E+003	4.1273845496E+002	-2.5798836275E+001	0.415	1.565	1.411
64.983	7.151	234.524	0.200	1.8934024662E+003	4.0803339317E+002	-2.4720309581E+001	0.409	1.545	1.397
65.000	7.151	234.527	0.195	1.8929906211E+003	4.0793022783E+002	-2.4754259089E+001	0.409	1.545	1.397
65.611	7.143	234.646	0.200	1.8766974510E+003	4.0383466849E+002	-2.7765923625E+001	0.405	1.529	1.387
66.350	7.134	234.796	0.204	1.8551888644E+003	3.9839621485E+002	-3.0021532405E+001	0.400	1.509	1.374
67.001	7.128	234.930	0.211	1.8351213859E+003	3.9329866164E+002	-3.2358482941E+001	0.395	1.490	1.364
67.740	7.124	235.090	0.218	1.8099225827E+003	3.8688281576E+002	-3.5109403190E+001	0.389	1.468	1.353
68.433	7.122	235.242	0.225	1.7849408213E+003	3.8052239897E+002	-3.7741694951E+001	0.383	1.446	1.343
69.172	7.118	235.412	0.231	1.7557191062E+003	3.7310971729E+002	-4.0637089736E+001	0.376	1.421	1.333
69.803	7.116	235.559	0.234	1.7294757921E+003	3.6647096734E+002	-4.2493931313E+001	0.370	1.400	1.325
70.500	7.106	235.722	0.225	1.6991672557E+003	3.5883283627E+002	-4.2557471408E+001	0.363	1.377	1.316
71.150	7.083	235.862	0.217	1.6720583786E+003	3.5203159249E+002	-4.2748793150E+001	0.357	1.357	1.310
71.890	7.050	236.023	0.218	1.6395566816E+003	3.4389811379E+002	-4.4612181316E+001	0.350	1.335	1.303
72.478	7.023	236.151	0.220	1.6130186883E+003	3.3726072084E+002	-4.5989958706E+001	0.344	1.319	1.299
73.217	6.980	236.315	0.223	1.5782180588E+003	3.2855334535E+002	-4.8345918203E+001	0.337	1.299	1.293
73.828	6.948	236.453	0.240	1.5480481448E+003	3.2098680746E+002	-5.2496194752E+001	0.330	1.284	1.290
74.567	6.917	236.639	0.248	1.5064657990E+003	3.1054880622E+002	-5.5962645726E+001	0.321	1.266	1.286
75.156	6.889	236.783	0.243	1.4736186525E+003	3.0231341654E+002	-5.5789943692E+001	0.314	1.253	1.284
75.896	6.839	236.961	0.238	1.4323241273E+003	2.9200362525E+002	-5.5540348234E+001	0.305	1.240	1.282
76.505	6.795	237.104	0.234	1.3986199607E+003	2.8363567505E+002	-5.5607449522E+001	0.297	1.230	1.281
77.245	6.730	237.277	0.229	1.3572156861E+003	2.7344389581E+002	-5.5220763018E+001	0.288	1.220	1.281
77.879	6.668	237.419	0.224	1.3225917932E+003	2.6500438737E+002	-5.4799391987E+001	0.281	1.213	1.281
78.619	6.585	237.584	0.220	1.2818618007E+003	2.5518643201E+002	-5.3955612277E+001	0.272	1.206	1.283
79.000	6.539	237.666	0.213	1.2615125007E+003	2.5032195023E+002	-5.3543953944E+001	0.268	1.204	1.284
79.316	6.500	237.733	0.219	1.2445534767E+003	2.4630061824E+002	-5.4494667339E+001	0.265	1.202	1.285
80.055	6.410	237.897	0.222	1.2028753957E+003	2.3647203392E+002	-5.6725295514E+001	0.257	1.198	1.288
80.704	6.331	238.041	0.228	1.1658667639E+003	2.2781084674E+002	-5.8400897053E+001	0.250	1.195	1.291
81.443	6.242	238.213	0.234	1.1215388375E+003	2.1749193702E+002	-6.0219465403E+001	0.241	1.193	1.295
82.068	6.168	238.359	0.241	1.0837858347E+003	2.0873620670E+002	-6.1626872705E+001	0.233	1.192	1.299
82.807	6.081	238.541	0.248	1.0371861609E+003	1.9795445592E+002	-6.3412945781E+001	0.224	1.191	1.304
83.417	6.012	238.693	0.257	9.9834881971E+002	1.8899142152E+002	-6.4852703223E+001	0.216	1.191	1.309
84.156	5.931	238.887	0.253	9.4939374451E+002	1.7773784049E+002	-6.3014145225E+001	0.205	1.191	1.316
84.772	5.851	239.037	0.243	9.1220436309E+002	1.6925757045E+002	-5.9988318059E+001	0.198	1.193	1.322
85.512	5.748	239.217	0.252	8.6816921102E+002	1.5930922274E+002	-6.1426230892E+001	0.188	1.195	1.330
86.118	5.676	239.376	0.270	8.3000518025E+002	1.5080389268E+002	-6.3812768598E+001	0.180	1.199	1.339
86.857	5.590	239.580	0.272	7.8205437522E+002	1.4027651237E+002	-6.3247883840E+001	0.170	1.205	1.351
87.475	5.513	239.745	0.267	7.4382168696E+002	1.3201987068E+002	-6.1371642026E+001	0.162	1.211	1.362
88.214	5.414	239.943	0.263	6.9891799887E+002	1.2252052071E+002	-5.9046427961E+001	0.152	1.219	1.376
88.849	5.324	240.107	0.258	6.6235716898E+002	1.1495896905E+002	-5.7043493921E+001	0.145	1.227	1.390
89.588	5.211	240.298	0.253	6.2065843093E+002	1.0653491675E+002	-5.4650550785E+001	0.136	1.239	1.407
90.260	5.102	240.464	0.247	5.8503180276E+002	9.9490684461E+001	-5.2327412797E+001	0.129	1.250	1.423
90.999	4.976	240.646	0.246	5.4694121493E+002	9.2087064130E+001	-4.7522379687E+001	0.121	1.263	1.442
91.000	4.975	240.646	0.241	5.4688688891E+002	9.2076614493E+001	-4.7519286995E+001	0.121	1.263	1.442
91.640	4.862	240.800	0.246	5.1537719415E+002	8.6042559692E+001	-4.9811721907E+001	0.115	1.276	1.460
92.379	4.734	240.986	0.251	4.7807576854E+002	7.8912684718E+001	-5.0104666181E+001	0.108	1.293	1.484
93.003	4.626	241.143	0.255	4.4699246143E+002	7.2947183024E+001	-5.0202864890E+001	0.101	1.309	1.506
93.742	4.498	241.334	0.260	4.0953244832E+002	6.5689388153E+001	-5.0819736484E+001	0.093	1.331	1.535
94.357	4.393	241.495	0.275	3.7821095027E+002	5.9548527236E+001	-5.2946751839E+001	0.085	1.351	1.562
95.096	4.280	241.706	0.282	3.3728789382E+002	5.1440615751E+001	-5.4450200508E+001	0.075	1.380	1.601
95.715	4.179	241.878	0.271	3.0406997333E+002	4.4823384274E+001	-5.3172453128E+001	0.067	1.406	1.635
96.454	4.046	242.075	0.252	2.6522019945E+002	3.7117857673E+001	-4.9429204344E+001	0.060	1.440	1.679
97.080	3.912	242.221	0.225	2.3596743823E+002	3.1410796970E+001	-4.5500515563E+001	0.060	1.467	1.716
97.819	3.737	242.382	0.208	2.0345609064E+002	2.5282558418E+001	-4.1713876241E+001	0.060	1.500	1.759
98.464	3.571	242.509	0.193	1.7783106255E+002	2.0516287544E+001	-3.9230954588E+001	0.060	1.528	1.797
99.203	3.370	242.649	0.184	1.4925955873E+002	1.5209550854E+001	-3.6465612974E+001	0.060	1.560	1.839
99.500	3.283	242.700	0.163	1.3868909280E+002	1.3355429974E+001	-3.4791514995E+001	0.060	1.572	1.855
99.887	3.165	242.761	0.152	1.2561578606E+002	1.1189704912E+001	-3.3665721675E+001	0.060	1.588	1.876
100.627	2.928	242.871	0.147	1.0085000766E+002	7.4480782799E+000	-3.4368963665E+001	0.060	1.619	1.920

101.366	2.689	242.978	0.145	7.4800453605E+001	3.9788663172E+000	-3.3020506714E+001	0.060	1.652	1.975
101.376	2.686	242.979	0.180	7.4479606923E+001	3.9403305803E+000	-3.2959646210E+001	0.060	1.652	1.975
102.115	2.448	243.113	0.250	5.1895112343E+001	2.0209840851E+000	-3.4258668758E+001	0.060	1.674	2.034
102.728	2.344	243.317	0.250	2.9019302604E+001	1.0447942010E+000	-3.8203627372E+001	0.060	1.670	2.108

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
ht(m) : Altezza linea di thrust da nodo sinistro base concio
yt(m) : coordinata Y linea di trust
yt'(-) : gradiente pendenza locale linea di trust
E(x)(kN/m) : Forza Normale interconcio
T(x)(kN/m) : Forza Tangenziale interconcio
E' (kN) : derivata Forza normale interconcio
Rho(x) (-) : fattore mobilizzazione resistenza al taglio verticale interconcio ZhU et al.(2003)
FS_qFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by qFEM
FS_srmFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by SRM Procedure
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TABELLA SFORZI DI TAGLIO DISTRIBUITI LUNGO SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	dl (m)	alpha (°)	TauStress (kPa)	TauF (kN/m)	TauStrength (kPa)	TauS (kN/m)
18.445	0.555	0.605	-23.649	-1.274	-0.771	100.593	60.893
19.000	0.739	0.807	-23.649	-4.614	-3.724	101.285	81.741
19.739	0.739	0.807	-23.649	-8.746	-7.058	102.359	82.607
20.479	0.739	0.807	-23.649	-12.878	-10.393	104.864	84.629
21.218	0.739	0.807	-23.649	-17.010	-13.728	106.260	85.755
21.957	0.739	0.807	-23.649	-21.142	-17.063	106.010	85.554
22.696	0.739	0.807	-23.649	-25.274	-20.397	107.258	86.561
23.436	0.001	0.002	-23.649	-27.344	-0.041	107.785	0.163
23.437	0.739	0.800	-22.516	-28.123	-22.505	106.972	85.606
24.176	0.324	0.351	-22.516	-30.887	-10.826	107.111	37.542
24.500	0.739	0.800	-22.516	-33.579	-26.872	108.242	86.622
25.239	0.569	0.616	-22.516	-36.853	-22.687	109.171	67.208
25.808	0.739	0.787	-20.029	-35.929	-28.271	109.505	86.164
26.547	0.739	0.787	-20.029	-39.034	-30.714	110.426	86.889
27.286	0.117	0.125	-20.029	-40.832	-5.090	111.054	13.845
27.404	0.739	0.773	-16.905	-35.966	-27.789	109.529	84.627
28.143	0.595	0.622	-16.905	-38.134	-23.701	109.637	68.141
28.738	0.739	0.758	-12.901	-30.081	-22.813	106.800	80.998
29.477	0.565	0.580	-12.901	-31.485	-18.247	106.107	61.494
30.042	0.198	0.201	-9.714	-23.167	-4.661	104.875	21.098
30.240	0.739	0.750	-9.714	-23.876	-17.907	104.936	78.704
30.979	0.249	0.252	-9.714	-24.640	-6.219	104.718	26.430
31.228	0.739	0.744	-6.394	-14.581	-10.846	103.109	76.702
31.967	0.033	0.033	-6.394	-14.889	-0.490	103.008	3.389
32.000	0.497	0.500	-6.394	-15.077	-7.542	103.151	51.602
32.497	0.739	0.741	-3.477	-5.221	-3.867	101.653	75.287
33.236	0.602	0.603	-3.477	-5.362	-3.231	101.691	61.285
33.838	0.739	0.739	-1.157	3.168	2.343	100.599	74.384
34.577	0.739	0.739	-1.157	3.249	2.402	100.670	74.437
35.316	0.097	0.097	-1.157	3.295	0.321	100.663	9.794
35.414	0.739	0.739	-0.741	4.980	3.682	100.416	74.240
36.153	0.728	0.728	-0.741	5.096	3.710	100.403	73.085
36.881	0.739	0.739	-0.279	7.115	5.260	100.144	74.034
37.620	0.663	0.663	-0.279	7.264	4.813	100.128	66.342
38.283	0.739	0.739	0.200	9.467	6.999	99.910	73.860
39.022	0.629	0.629	0.200	9.648	6.065	99.915	62.807
39.651	0.139	0.139	0.695	11.938	1.665	99.691	13.902
39.790	0.739	0.739	0.695	12.101	8.947	99.686	73.699
40.529	0.477	0.477	0.695	12.334	5.887	99.721	47.592
41.006	0.739	0.739	1.173	14.782	10.930	99.538	73.600
41.746	0.611	0.611	1.173	15.080	9.218	99.545	60.850
42.357	0.643	0.643	1.647	17.635	11.346	99.327	63.904

43.000	0.723	0.723	1.647	17.898	12.948	99.315	71.847
43.723	0.477	0.477	2.108	20.344	9.708	99.120	47.300
44.200	0.739	0.740	2.108	20.595	15.236	99.149	73.346
44.939	0.176	0.176	2.108	20.815	3.673	99.242	17.510
45.116	0.739	0.740	2.546	23.258	17.211	99.089	73.325
45.855	0.703	0.704	2.546	23.633	16.640	99.149	69.812
46.558	0.739	0.741	3.342	28.164	20.856	98.838	73.192
47.298	0.632	0.633	3.342	28.563	18.086	98.917	62.636
47.930	0.070	0.071	4.197	33.316	2.350	98.718	6.963
48.000	0.739	0.741	4.197	33.605	24.910	98.716	73.173
48.739	0.535	0.537	4.197	34.066	18.281	98.757	52.996
49.274	0.739	0.742	5.086	39.386	29.232	98.612	73.188
50.014	0.582	0.585	5.086	39.905	23.325	98.763	57.729
50.596	0.739	0.743	5.970	45.352	33.710	98.715	73.374
51.335	0.609	0.612	5.970	45.916	28.102	98.831	60.487
51.944	0.056	0.057	6.851	51.168	2.891	98.827	5.585
52.000	0.739	0.745	6.851	51.415	38.282	98.804	73.567
52.739	0.526	0.530	6.851	51.795	27.431	98.880	52.367
53.265	0.739	0.746	7.731	57.179	42.658	99.031	73.881
54.004	0.605	0.610	7.731	57.586	35.131	99.207	60.523
54.609	0.739	0.748	8.572	62.796	46.947	99.313	74.248
55.348	0.630	0.637	8.572	63.208	40.275	99.522	63.414
55.978	0.739	0.749	9.352	68.086	51.011	99.701	74.698
56.717	0.699	0.708	9.352	68.508	48.517	99.957	70.788
57.416	0.584	0.592	9.732	71.074	42.097	100.236	59.369
58.000	0.739	0.750	9.732	71.375	53.535	100.452	75.345
58.739	0.070	0.071	9.732	71.519	5.108	100.580	7.184
58.810	0.739	0.751	10.130	73.955	55.538	100.787	75.688
59.549	0.629	0.639	10.130	74.185	47.431	101.140	64.664
60.178	0.739	0.752	10.536	76.753	57.714	101.472	76.300
60.918	0.615	0.626	10.536	76.967	48.182	101.630	63.621
61.533	0.739	0.753	10.944	79.530	59.883	101.869	76.703
62.272	0.618	0.629	10.944	79.728	50.171	102.008	64.192
62.890	0.739	0.754	11.350	82.261	62.026	102.183	77.047
63.629	0.615	0.627	11.350	82.442	51.686	102.224	64.088
64.244	0.739	0.755	11.752	84.928	64.128	102.283	77.233
64.983	0.017	0.017	11.752	85.019	1.448	102.220	1.741
65.000	0.611	0.624	11.752	85.009	53.050	102.405	63.906
65.611	0.739	0.756	12.145	87.220	65.954	102.722	77.677
66.350	0.651	0.666	12.145	87.168	58.023	102.899	68.494
67.001	0.739	0.757	12.519	89.233	67.573	103.304	78.229
67.740	0.693	0.710	12.519	89.154	63.255	103.496	73.431
68.433	0.739	0.759	13.239	93.094	70.700	104.022	78.999
69.172	0.631	0.648	13.239	92.968	60.273	104.219	67.568
69.803	0.697	0.718	14.001	97.030	69.677	104.630	75.135
70.500	0.650	0.670	14.001	96.809	64.895	104.417	69.995
71.150	0.739	0.765	14.786	100.752	77.033	104.885	80.193
71.890	0.588	0.608	14.786	100.427	61.081	105.011	63.869
72.478	0.739	0.767	15.563	104.178	79.946	105.477	80.943
73.217	0.611	0.634	15.563	103.775	65.795	105.761	67.055
73.828	0.739	0.770	16.336	107.320	82.675	106.857	82.319
74.567	0.589	0.614	16.336	106.848	65.620	106.786	65.582
75.156	0.739	0.773	17.104	110.186	85.225	107.053	82.802
75.896	0.610	0.638	17.104	109.627	69.935	106.941	68.222
76.505	0.739	0.777	17.838	112.602	87.446	107.233	83.276
77.245	0.635	0.667	17.838	111.950	74.652	106.975	71.334
77.879	0.739	0.780	18.520	114.482	89.255	107.197	83.575
78.619	0.381	0.402	18.520	113.886	45.797	106.913	42.993
79.000	0.316	0.333	18.520	113.449	37.792	106.899	35.610
79.316	0.739	0.782	18.978	114.737	89.697	107.356	83.926
80.055	0.649	0.686	18.978	113.650	77.990	107.385	73.691
80.704	0.739	0.784	19.457	114.653	89.893	107.888	84.588
81.443	0.625	0.663	19.457	113.520	75.207	107.921	71.498
82.068	0.739	0.786	19.945	114.443	90.002	108.414	85.261
82.807	0.609	0.648	19.945	113.255	73.429	108.485	70.336
83.417	0.739	0.789	20.434	114.048	89.973	108.960	85.959

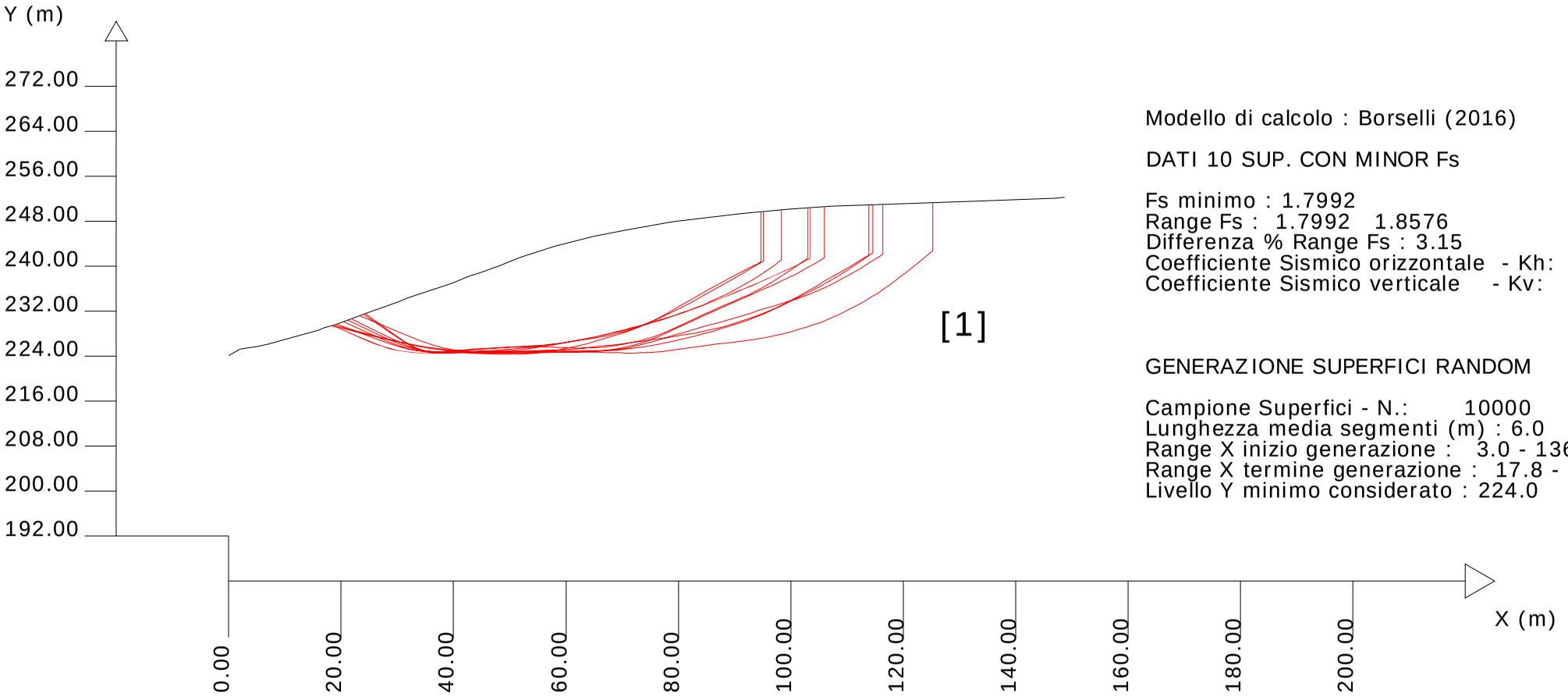
84.156	0.616	0.658	20.434	112.785	74.181	108.099	71.098
84.772	0.739	0.791	20.915	113.401	89.747	108.074	85.531
85.512	0.606	0.649	20.915	112.078	72.740	108.417	70.364
86.118	0.739	0.794	21.393	112.545	89.357	108.702	86.306
86.857	0.618	0.663	21.393	111.140	73.728	108.168	71.756
87.475	0.739	0.797	21.857	111.401	88.734	107.989	86.015
88.214	0.635	0.684	21.857	109.907	75.177	107.405	73.466
88.849	0.739	0.799	22.301	109.935	87.841	107.198	85.654
89.588	0.671	0.726	22.301	108.330	78.623	106.627	77.387
90.260	0.739	0.801	22.648	107.862	86.401	106.403	85.232
90.999	0.001	0.001	22.648	106.990	0.133	105.844	0.131
91.000	0.640	0.693	22.648	106.181	73.606	106.031	73.501
91.640	0.739	0.803	23.005	105.558	84.777	106.242	85.327
92.379	0.624	0.678	23.005	103.779	70.362	106.187	71.994
93.003	0.739	0.805	23.366	103.076	83.008	106.431	85.709
93.742	0.615	0.670	23.366	101.250	67.814	106.542	71.359
94.357	0.739	0.808	23.726	100.444	81.110	107.269	86.621
95.096	0.619	0.676	23.726	98.552	66.602	107.089	72.371
95.715	0.739	0.810	24.093	97.641	79.071	106.989	86.640
96.454	0.625	0.685	24.093	95.678	65.528	106.120	72.680
97.080	0.739	0.812	24.451	94.618	76.838	105.620	85.773
97.819	0.645	0.708	24.451	92.564	65.569	105.011	74.386
98.464	0.739	0.814	24.798	91.333	74.377	104.917	85.439
99.203	0.297	0.327	24.798	89.750	29.365	104.276	34.118
99.500	0.387	0.427	24.798	88.655	37.827	103.830	44.302
99.887	0.739	0.816	25.121	87.511	71.452	103.500	84.507
100.627	0.739	0.816	25.121	85.003	69.404	103.245	84.299
101.366	0.010	0.011	25.121	83.732	0.899	102.740	1.104
101.376	0.739	0.827	26.691	85.583	70.814	101.875	84.294
102.115	0.613	0.686	26.691	83.000	56.924	101.150	69.373
102.728	0.739	0.841	28.436	83.384	70.100	101.065	84.964

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
dl(m) : lunghezza base concio
alpha(°) : Angolo pendenza base concio
TauStress(kPa) : Sforzo di taglio su base concio
TauF (kN/m) : Forza di taglio su base concio
TauStrength(kPa) : Resistenza al taglio su base concio
TauS (kN/m) : Forza resistente al taglio su base concio

SSAP 5.0.2 (2021) - Slope Stability Analysis Program
Software by Dr.Geol. L.Borselli - www.lorenzo-borselli.eu
SSAP/DXF generator rel. 2.0 (2020)

Data : 18/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Borselli (2016)

DATI 10 SUP. CON MINOR Fs

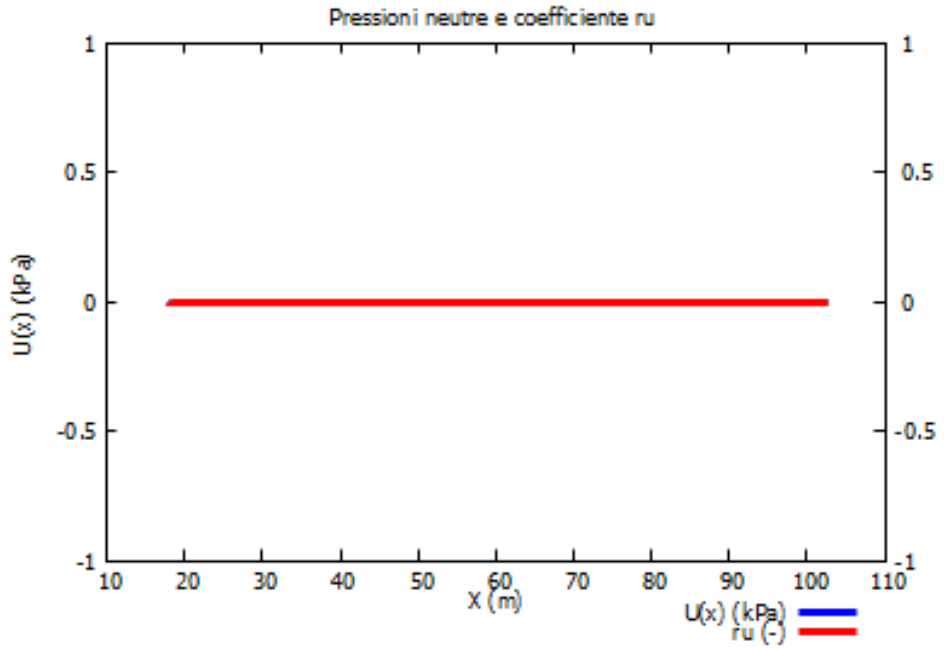
Fs minimo : 1.7992
Range Fs : 1.7992 1.8576
Differenza % Range Fs : 3.15
Coefficiente Sismico orizzontale - Kh: 0.0350
Coefficiente Sismico verticale - Kv: 0.0175

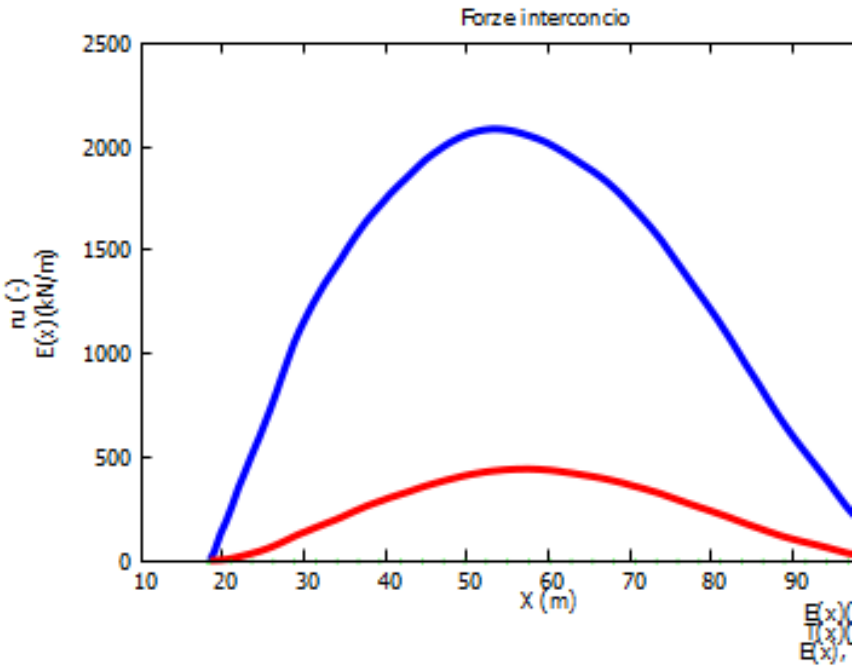
GENERAZIONE SUPERFICI RANDOM

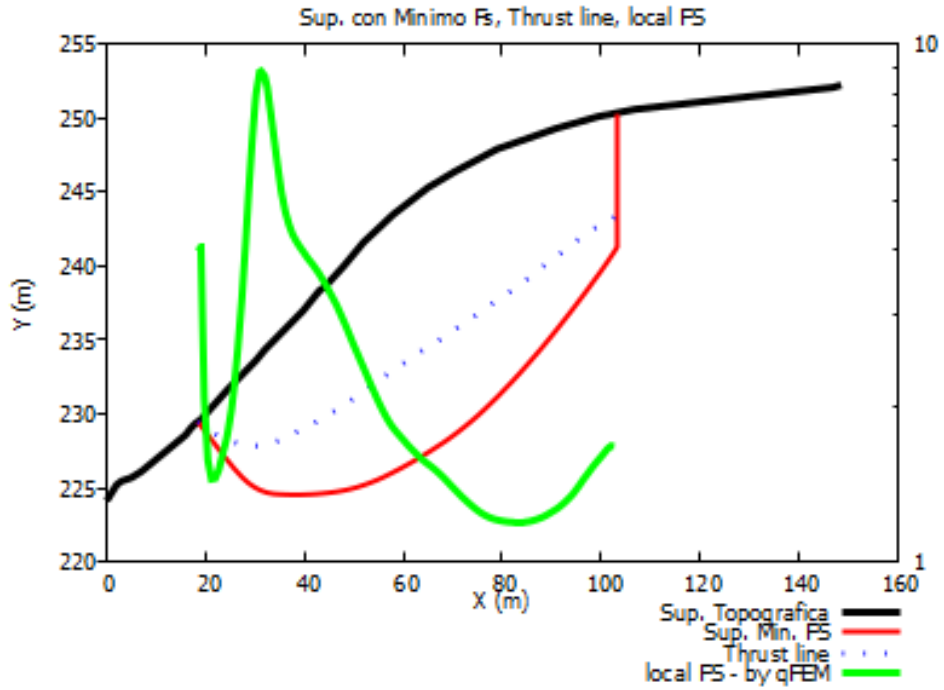
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 6.0
Range X inizio generazione : 3.0 - 136.8
Range X termine generazione : 17.8 - 145.7
Livello Y minimo considerato : 224.0

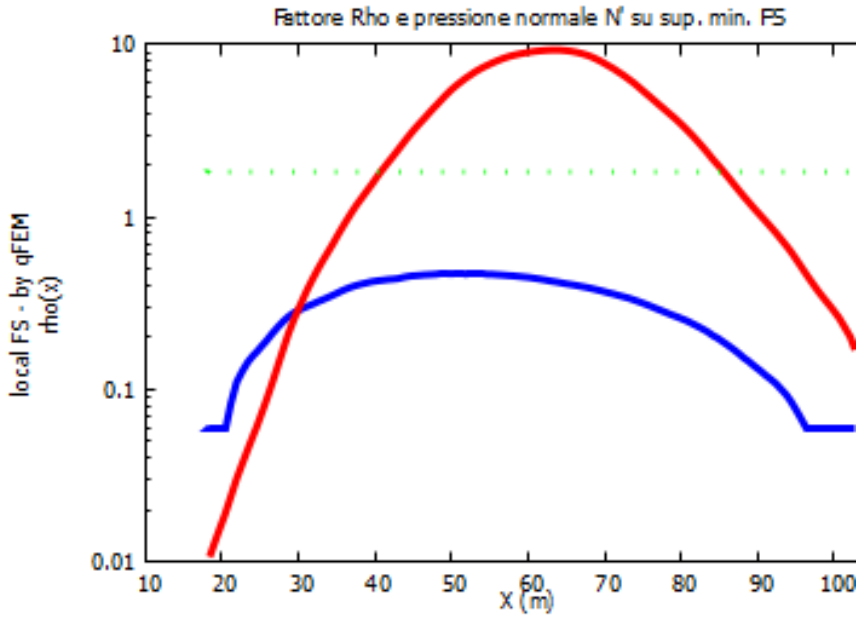
Parametri Geotecnici degli strati # ----------

N.	phi`	C`	Cu	Gamm	GammSat	sgci	GSI	mi	D
..	deg	kPa	kPa	kN/m3	kN/m3	MPa	..	..	..
1	0	0	100.00	20.00	22.00	0	0	0	0





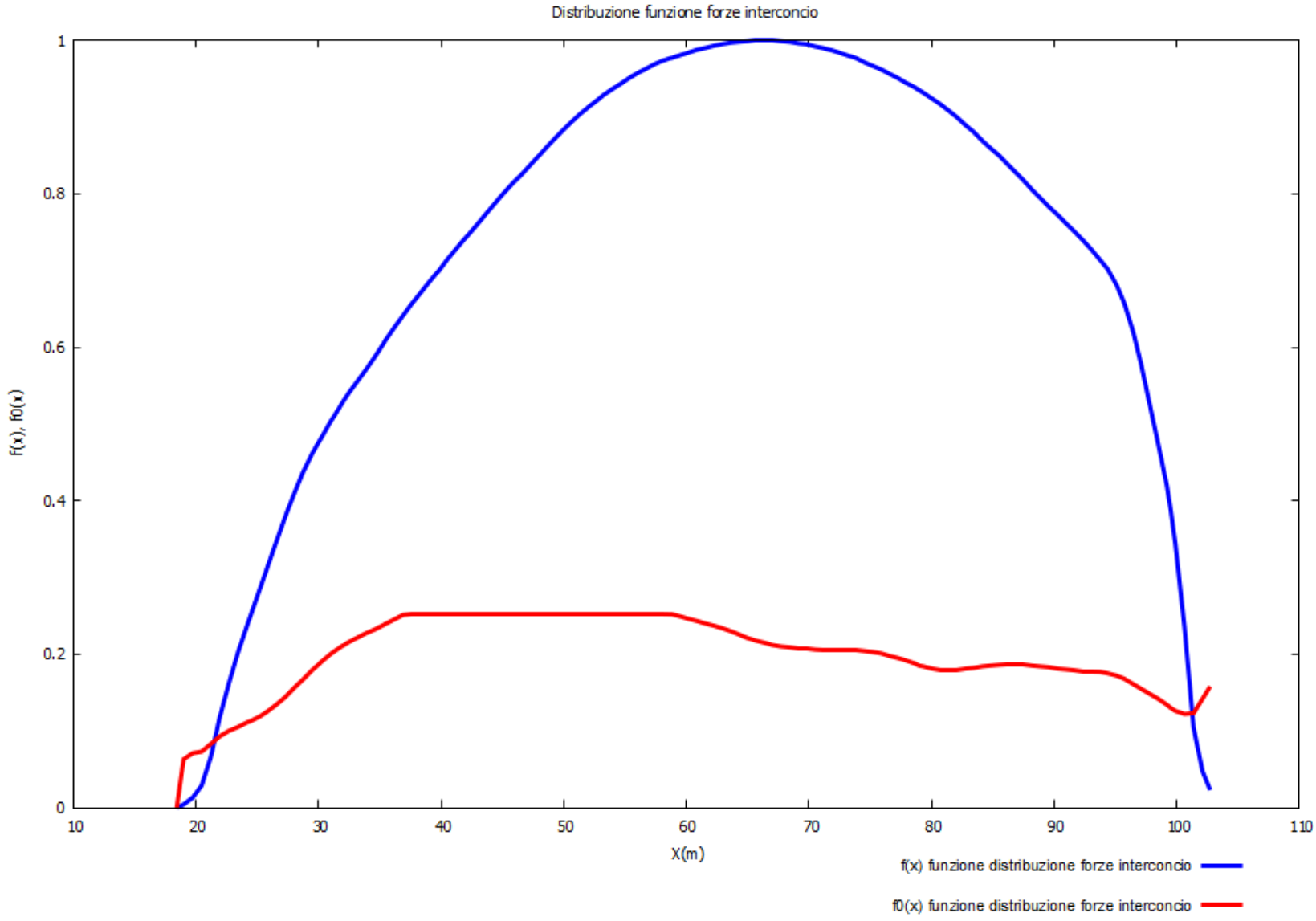


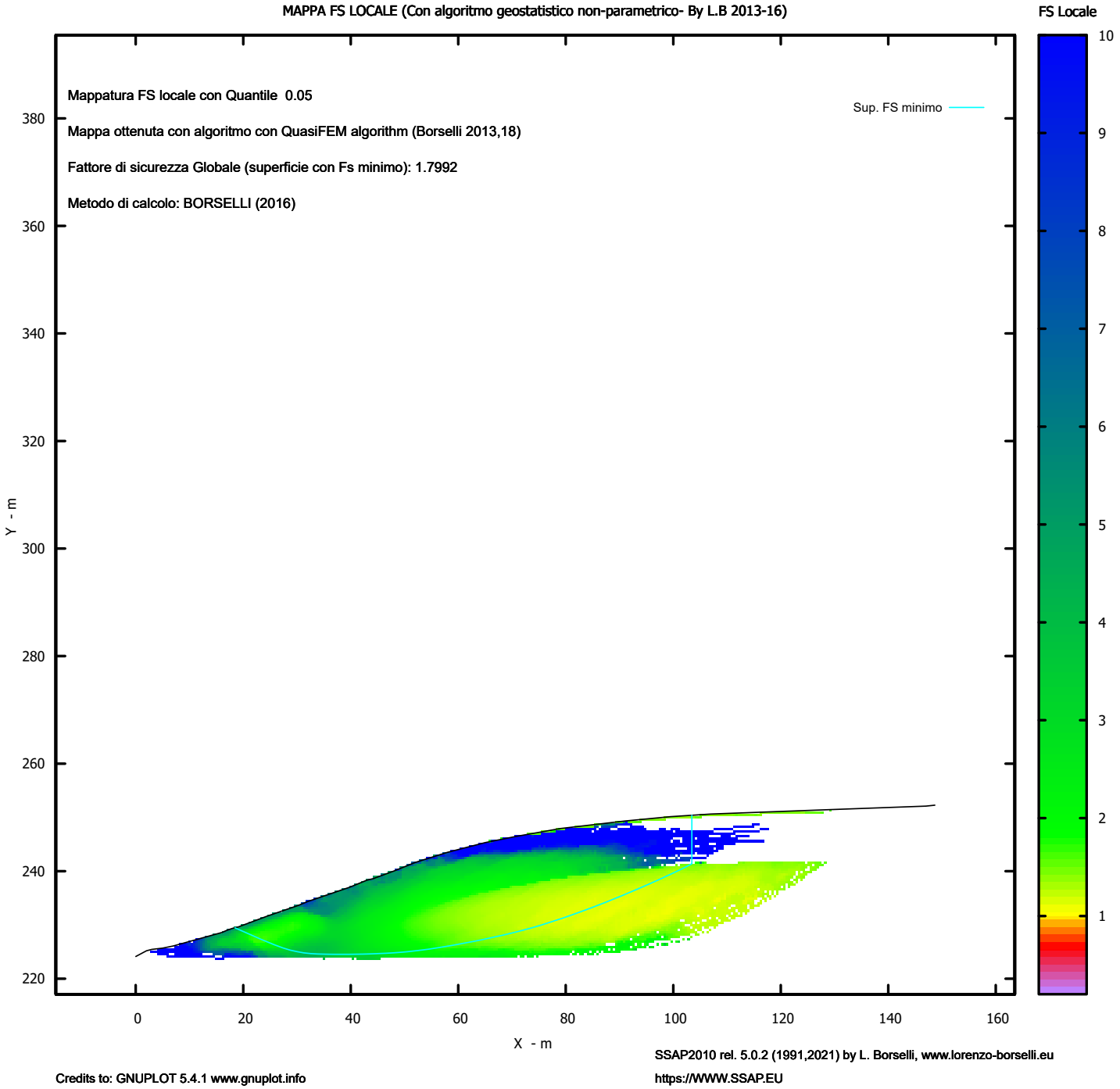


Metodo di calcolo: BORSELLI (2016)

SSAP2010 (versione 5.0.2 - 2021) - DISTRIBUZIONE FORZE e PRESSIONI

18/11/21 14:39

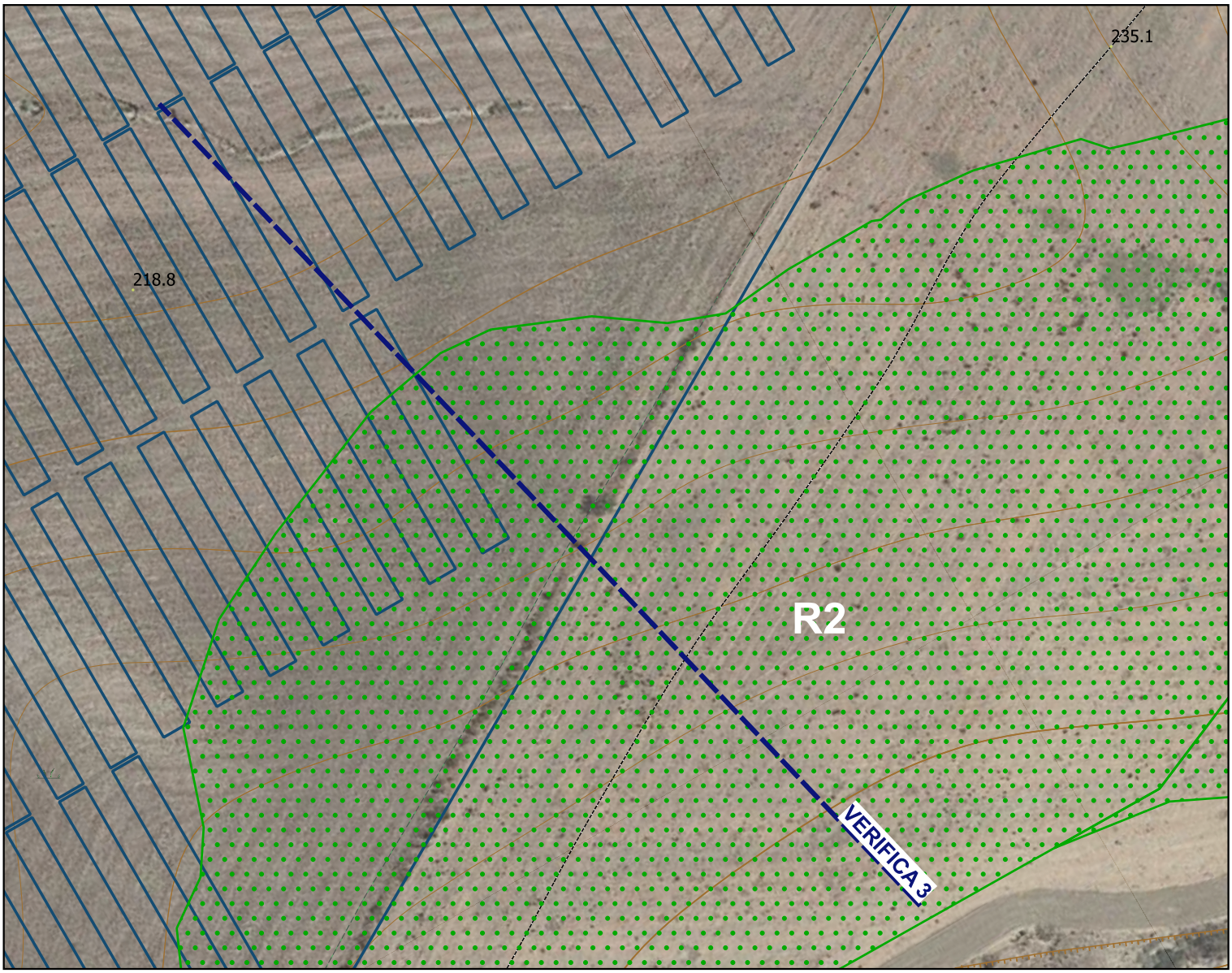

Distribuzione funzione forze interconcio
f(x), f0(x)
X(m)
0
0.2
0.4
0.6
0.8
1
10
20
30
40
50
60
70
80
90
100
110
f(x) funzione distribuzione forze interconcio
f0(x) funzione distribuzione forze interconcio


MAPPA FS LOCALE (Con algoritmo geostatistico non-parametrico- By L.B 2013-16)
FS Locale
Mappatura FS locale con Quantile 0.05
Mappa ottenuta con algoritmo con QuasiFEM algorithm (Borselli 2013,18)
Fattore di sicurezza Globale (superficie con Fs minimo): 1.7992
Metodo di calcolo: BORSELLI (2016)
Sup. FS minimo
Y - m
X - m
220
240
260
280
300
320
340
360
380
0
20
40
60
80
100
120
140
160
1
2
3
4
5
6
7
8
9
10
Credits to: GNUPLOT 5.4.1 www.gnuplot.info
SSAP2010 rel. 5.0.2 (1991,2021) by L. Borselli, www.lorenzo-borselli.eu
https://WWW.SSAP.EU

VERIFICA DI STABILITA' SEZIONE 3

CONDIZIONE DRENATA

SEZIONE DI VERIFICA N. 3



0 10 20 30 m

190

PICCHETTO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
DISTANZE PROGRESSIVE	0	3	8	13.5	15	21	24.5	32	41.5	49	55	66.5	68.5	78.5	83.5	87.5	94	100	102	109.5	117.5	129	145.5	154	164.5	173	176.59
DISTANZE PARZIALI		3	5	5.5	1.5	6	3.5	7.5	9.5	7.5	6	11.5	2	10	5	4	6.5	6	2	7.5	8	11.5	16.5	8.5	10.5	8.5	3.59
QUOTE	216.45	216.75	217.2	217.5	217.69	218.16	218.66	219.84	221.94	223.69	225.08	228.27	228.83	231.31	232.38	233.17	234.15	235.93	236.25	238.42	241.14	244.33	247.98	249.72	251.93	253.21	253.45

Report elaborazioni

SSAP 5.0.2 - Slope Stability Analysis Program (1991,2021)
WWW.SSAP.EU
Build No. 11893
BY
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** Gia' Ricercatore CNR-IRPI fino a Luglio 2011

Ultima Revisione struttura tabelle del report: 21 Febbraio 2021

File report: C:\SSAP2010\CRACO SERRACARUSO CAP\VERIFICA 3\DRENATA\MORG\MORG.txt
Data: 18/11/2021
Localita' :
Descrizione:
Modello pendio: DRENATA.mod

---------- PARAMETRI DEL MODELLO DEL PENDIO ----------

__ PARAMETRI GEOMETRICI - Coordinate X Y (in m) __

SUP T.		SUP 2		SUP 3		SUP 4	
X	Y	X	Y	X	Y	X	Y
0.00	216.45	-	-	-	-	-	-
3.00	216.75	-	-	-	-	-	-
8.00	217.20	-	-	-	-	-	-
13.50	217.50	-	-	-	-	-	-
15.00	217.69	-	-	-	-	-	-
21.00	218.16	-	-	-	-	-	-
24.50	218.66	-	-	-	-	-	-
32.00	219.84	-	-	-	-	-	-
41.50	221.94	-	-	-	-	-	-
49.00	223.69	-	-	-	-	-	-
55.00	225.08	-	-	-	-	-	-
66.50	228.27	-	-	-	-	-	-
68.50	228.83	-	-	-	-	-	-
78.50	231.31	-	-	-	-	-	-
83.50	232.38	-	-	-	-	-	-
87.50	233.17	-	-	-	-	-	-
94.00	234.15	-	-	-	-	-	-
100.00	235.93	-	-	-	-	-	-
102.00	236.25	-	-	-	-	-	-
109.50	238.42	-	-	-	-	-	-
117.50	241.14	-	-	-	-	-	-
129.00	244.33	-	-	-	-	-	-
145.50	247.98	-	-	-	-	-	-
154.00	249.72	-	-	-	-	-	-
164.50	251.93	-	-	-	-	-	-
173.00	253.21	-	-	-	-	-	-
176.59	253.45	-	-	-	-	-	-

ASSENZA DI FALDA

------- PARAMETRI GEOMECCANICI -------

	fi`	C`	Cu	Gamm	Gamm_sat	STR_IDX	sgci	GSI	mi	D
STRATO 1	26.00	19.50	0.00	20.00	22.00	2.279	0.00	0.00	0.00	0.00

LEGENDA: fi`_____ Angolo di attrito interno efficace(in gradi)
C` _____ Coesione efficace (in Kpa)

Cu _____ Resistenza al taglio Non drenata (in Kpa)
Gamm _____ Peso di volume terreno fuori falda (in KN/m^3)
Gamm_sat __ Peso di volume terreno immerso (in KN/m^3)
STR_IDX ___ Indice di resistenza (usato in solo in 'SNIFF SEARCH) (adimensionale)
---- SOLO Per AMMASSI ROCCIOSI FRATTURATI - Parametri Criterio di Rottura di Hoek (2002)-
sigci _____ Resistenza Compressione Uniassiale Roccia Intatta (in MPa)
GSI _____ Geological Strenght Index ammasso(adimensionale)
mi _____ Indice litologico ammasso(adimensionale)
D _____ Fattore di disturbo ammasso(adimensionale)
Fattore di riduzione NTC2018: gammaPHI=1.25 e gammaC=1.25 - DISATTIVATO (solo per ROCCE)
Uso CRITERIO DI ROTTURA Hoek et al.(2002,2006) - non-lineare - Generalizzato, secondo Lei et al.(2016)

---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
MOTORE DI RICERCA: RANDOM SEARCH - Siegel (1981)
FILTRAGGIO SUPERFICI : ATTIVATO
COORDINATE X1,X2,Y OSTACOLO : 0.00 0.00 0.00
LUNGHEZZA MEDIA SEGMENTI (m)*: 7.1 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 3.53 162.46
LIVELLO MINIMO CONSIDERATO (Ymin): 183.15
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 21.19 173.06
TOTALE SUPERFICI GENERATE : 10000
*NOTA IMPORTANTE: La lunghezza media dei segmenti non viene cosiderata nel caso
di uso del motore di recerca NEW RANOM SEARCH

---------- INFORMAZIONI PARAMETRI DI CALCOLO ----------
METODO DI CALCOLO : MORGENSTERN - PRICE (Morgenstern & Price, 1965)
METODO DI ESPLORAZIONE CAMPO VALORI (lambda0,Fs0) ADOTTATO : A (rapido)
COEFFICIENTE SISMICO UTILIZZATO Kh : 0.0350
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0175
COEFFICIENTE c=Kv/Kh UTILIZZATO : 0.5000
FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00

N.B. Le forze orizzontali addizionali in testa e alla base sono poste uguali a 0
durante le tutte le verifiche globali.
I valori >0 impostati dall'utente sono utilizzati solo in caso di verifica singola

---------- RISULTATO FINALE ELABORAZIONI ----------
---
* DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *

Fattore di sicurezza (FS) 2.1890 - Min. - X Y Lambda= 0.2920
33.49 220.17
43.76 216.01
48.52 214.21
51.67 213.21
54.24 212.59
56.82 212.21
59.11 212.05
61.63 212.07
64.35 212.25
67.71 212.64
70.70 213.03
73.51 213.45
76.20 213.90
78.91 214.41
81.55 214.95
84.24 215.55
86.97 216.22
89.86 216.97
92.69 217.71
95.46 218.45
98.23 219.20
100.97 219.94

103.73 220.70
106.50 221.48
109.31 222.27
112.18 223.09
114.92 223.91
117.62 224.76
120.27 225.65
122.99 226.60
125.68 227.59
128.44 228.66
131.32 229.81
134.42 231.10
137.17 232.35
139.81 233.67
142.33 235.05
145.00 236.65
147.83 238.52
151.12 240.86
155.91 244.49
161.74 249.03
161.74 251.35

Fattore di sicurezza (FS) 2.1918 - N.2 -- X Y Lambda= 0.2956
28.38 219.27
41.73 213.19
47.73 210.65
51.55 209.33
54.53 208.62
57.68 208.30
60.32 208.30
63.32 208.63
66.64 209.28
70.91 210.34
74.84 211.33
78.52 212.26
82.09 213.17
85.55 214.05
89.03 214.95
92.53 215.86
96.08 216.78
99.68 217.72
103.12 218.68
106.50 219.68
109.83 220.73
113.25 221.86
116.62 223.04
120.09 224.31
123.69 225.70
127.59 227.26
131.06 228.77
134.39 230.35
137.57 232.02
140.94 233.93
144.52 236.17
148.67 238.96
154.70 243.27
162.83 249.25
162.83 251.58

Fattore di sicurezza (FS) 2.1934 - N.3 -- X Y Lambda= 0.3051
32.21 219.89
41.28 214.97
45.46 212.83
48.19 211.62

50.38 210.85
52.62 210.31
54.57 210.01
56.77 209.88
59.19 209.90
62.29 210.09
64.91 210.31
67.33 210.60
69.59 210.95
71.93 211.41
74.14 211.92
76.46 212.53
78.87 213.26
81.55 214.14
84.06 214.93
86.48 215.66
88.85 216.34
91.23 217.00
93.59 217.61
96.00 218.21
98.49 218.79
101.15 219.38
103.56 219.98
105.89 220.63
108.13 221.33
110.48 222.14
112.73 222.98
115.06 223.94
117.48 225.01
120.14 226.25
122.63 227.45
125.04 228.66
127.39 229.88
129.77 231.15
132.11 232.45
134.48 233.80
136.89 235.23
139.41 236.75
141.86 238.22
144.27 239.64
146.66 241.03
149.05 242.41
151.73 243.92
154.72 245.57
158.93 247.88
159.92 248.42
159.92 250.97

Fattore di sicurezza (FS) 2.1959 - N.4 -- X Y Lambda= 0.2895
24.96 218.73
38.26 213.41
44.27 211.19
48.14 210.05
51.19 209.45
54.37 209.22
57.09 209.28
60.14 209.65
63.49 210.32
67.73 211.40
71.64 212.38
75.31 213.28
78.87 214.15
82.33 214.98
85.82 215.80
89.35 216.62

92.96 217.44
96.69 218.28
100.12 219.14
103.47 220.07
106.71 221.08
110.10 222.23
113.38 223.44
116.77 224.81
120.29 226.33
124.17 228.10
127.74 229.80
131.18 231.53
134.52 233.30
137.94 235.20
141.66 237.39
145.89 240.01
151.96 243.91
158.08 247.92
158.08 250.58

Fattore di sicurezza (FS) 2.1966 - N.5 -- X Y Lambda= 0.2940
33.58 220.19
41.41 217.33
45.02 216.11
47.40 215.45
49.32 215.07
51.28 214.88
53.00 214.84
54.89 214.95
56.93 215.20
59.44 215.62
61.73 215.99
63.89 216.31
65.98 216.60
68.05 216.87
70.10 217.11
72.19 217.33
74.33 217.53
76.57 217.72
78.67 217.94
80.71 218.19
82.70 218.48
84.75 218.82
86.74 219.19
88.77 219.61
90.84 220.08
93.04 220.62
95.19 221.16
97.31 221.69
99.41 222.22
101.49 222.75
103.59 223.29
105.70 223.84
107.85 224.41
110.05 224.99
112.12 225.58
114.15 226.20
116.13 226.86
118.18 227.58
120.18 228.33
122.21 229.15
124.30 230.03
126.52 231.01
128.67 231.98
130.77 232.94

132.84 233.91
134.91 234.90
136.98 235.90
139.05 236.92
141.15 237.98
143.30 239.07
145.41 240.16
147.49 241.25
149.55 242.36
151.63 243.48
153.95 244.76
156.54 246.21
160.20 248.29
160.20 251.03

Fattore di sicurezza (FS) 2.1998 - N.6 -- X Y Lambda= 0.2942
21.63 218.25
32.91 213.26
38.16 211.08
41.63 209.84
44.47 209.05
47.32 208.52
49.86 208.24
52.64 208.14
55.65 208.23
59.36 208.49
62.65 208.79
65.72 209.13
68.67 209.52
71.64 209.98
74.54 210.50
77.51 211.09
80.57 211.76
83.86 212.55
86.96 213.33
89.97 214.14
92.92 214.97
95.92 215.87
98.85 216.80
101.82 217.78
104.85 218.83
107.99 219.96
111.09 221.07
114.14 222.15
117.18 223.22
120.20 224.27
123.27 225.33
126.40 226.39
129.66 227.49
133.11 228.64
136.04 229.77
138.85 231.03
141.48 232.39
144.38 234.09
147.37 236.12
150.93 238.80
156.21 243.08
163.66 249.35
163.66 251.75

Fattore di sicurezza (FS) 2.1998 - N.7 -- X Y Lambda= 0.3046
24.80 218.71
38.51 212.50
44.66 209.92

48.58	208.58
51.63	207.87
54.85	207.55
57.56	207.57
60.65	207.93
64.08	208.62
68.51	209.75
72.53	210.80
76.28	211.81
79.90	212.81
83.42	213.81
86.95	214.83
90.50	215.89
94.11	216.99
97.82	218.14
101.38	219.29
104.88	220.47
108.33	221.69
111.84	222.98
115.31	224.32
118.86	225.73
122.50	227.23
126.35	228.87
129.92	230.48
133.39	232.14
136.77	233.84
140.26	235.71
144.04	237.87
148.36	240.46
154.55	244.35
160.80	248.35
160.80	251.15

Fattore di sicurezza (FS) 2.1999 - N.8 -- X Y Lambda= 0.2979

26.78	219.02
39.64	216.40
45.75	215.29
49.88	214.73
53.33	214.45
56.70	214.41
59.79	214.53
63.06	214.83
66.50	215.31
70.47	216.02
74.26	216.69
77.91	217.33
81.50	217.95
85.02	218.55
88.59	219.16
92.19	219.77
95.88	220.39
99.67	221.02
103.14	221.69
106.52	222.45
109.78	223.29
113.22	224.28
116.52	225.35
119.95	226.57
123.54	227.96
127.52	229.61
131.15	231.20
134.64	232.82
138.01	234.48
141.48	236.28
145.23	238.38

149.52 240.91
155.67 244.70
161.88 248.61
161.88 251.38

Fattore di sicurezza (FS) 2.2009 - N.9 -- X Y Lambda= 0.2964
31.05 219.69
41.70 215.16
46.52 213.26
49.64 212.25
52.10 211.70
54.66 211.44
56.86 211.42
59.34 211.64
62.07 212.10
65.57 212.86
68.68 213.50
71.57 214.06
74.33 214.54
77.09 214.97
79.79 215.36
82.57 215.71
85.42 216.02
88.46 216.32
91.28 216.64
94.01 217.02
96.67 217.44
99.41 217.94
102.07 218.49
104.82 219.12
107.67 219.83
110.76 220.66
113.60 221.48
116.34 222.34
119.00 223.24
121.74 224.23
124.42 225.27
127.19 226.42
130.09 227.69
133.28 229.15
136.09 230.55
138.78 232.01
141.34 233.53
144.05 235.27
146.92 237.31
150.26 239.85
155.12 243.78
161.02 248.68
161.02 251.20

Fattore di sicurezza (FS) 2.2014 - N.10 -- X Y Lambda= 0.3049
30.21 219.56
41.16 215.17
46.12 213.33
49.32 212.37
51.85 211.86
54.49 211.64
56.74 211.67
59.27 211.94
62.05 212.45
65.56 213.28
68.77 214.06
71.78 214.81
74.70 215.55

77.55	216.30
80.39	217.06
83.25	217.84
86.13	218.65
89.07	219.49
91.96	220.34
94.81	221.19
97.65	222.06
100.50	222.94
103.34	223.85
106.20	224.77
109.07	225.72
111.99	226.71
114.88	227.67
117.75	228.61
120.61	229.55
123.46	230.46
126.36	231.38
129.29	232.31
132.32	233.25
135.49	234.22
138.30	235.19
141.01	236.24
143.60	237.38
146.37	238.73
149.29	240.34
152.71	242.39
157.70	245.61
162.74	248.98
162.74	251.56

---------- ANALISI DEFICIT DI RESISTENZA ----------
DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *
Analisi Deficit in riferimento a FS(progetto) = 1.100

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	2.189	19218.5	8779.6	9560.9	Surplus
2	2.192	22194.9	10126.3	11055.9	Surplus
3	2.193	19541.9	8909.3	9741.7	Surplus
4	2.196	20106.5	9156.5	10034.3	Surplus
5	2.197	15588.4	7096.5	7782.2	Surplus
6	2.200	23918.2	10872.8	11958.1	Surplus
7	2.200	21624.5	9830.1	10811.4	Surplus
8	2.200	17450.7	7932.6	8724.8	Surplus
9	2.201	20408.5	9273.0	10208.3	Surplus
10	2.201	17396.1	7902.3	8703.5	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 7782.2

Note: FTR --> Forza totale Resistente lungo la superficie
di scivolamento
FTA --> Forza totale Agente lungo la superficie
di scivolamento

IMPORTANTE! : Il Deficit o il Surplus di resistenza viene espresso in kN
per metro di LARGHEZZA rispetto al fronte della scarpata

TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (°)	W (kN/m)	ru (-)	U (kPa)	phi' (°)	(c',Cu) (kPa)

33.487	0.972	-22.05	6.01	0.00	0.00	26.00	19.50
34.458	0.972	-22.05	18.04	0.00	0.00	26.00	19.50
35.430	0.972	-22.05	30.07	0.00	0.00	26.00	19.50
36.402	0.972	-22.05	42.10	0.00	0.00	26.00	19.50
37.373	0.972	-22.05	54.13	0.00	0.00	26.00	19.50
38.345	0.972	-22.05	66.16	0.00	0.00	26.00	19.50
39.316	0.972	-22.05	78.19	0.00	0.00	26.00	19.50
40.288	0.972	-22.05	90.22	0.00	0.00	26.00	19.50
41.260	0.240	-22.05	24.18	0.00	0.00	26.00	19.50
41.500	0.972	-22.05	105.35	0.00	0.00	26.00	19.50
42.472	0.972	-22.05	117.61	0.00	0.00	26.00	19.50
43.443	0.313	-22.05	40.53	0.00	0.00	26.00	19.50
43.756	0.972	-20.71	133.57	0.00	0.00	26.00	19.50
44.728	0.972	-20.71	145.32	0.00	0.00	26.00	19.50
45.700	0.972	-20.71	157.07	0.00	0.00	26.00	19.50
46.671	0.972	-20.71	168.82	0.00	0.00	26.00	19.50
47.643	0.880	-20.71	163.08	0.00	0.00	26.00	19.50
48.523	0.477	-17.61	92.23	0.00	0.00	26.00	19.50
49.000	0.972	-17.61	195.80	0.00	0.00	26.00	19.50
49.972	0.972	-17.61	206.35	0.00	0.00	26.00	19.50
50.943	0.728	-17.61	161.42	0.00	0.00	26.00	19.50
51.671	0.972	-13.51	224.06	0.00	0.00	26.00	19.50
52.642	0.972	-13.51	233.12	0.00	0.00	26.00	19.50
53.614	0.622	-13.51	154.05	0.00	0.00	26.00	19.50
54.236	0.764	-8.26	193.63	0.00	0.00	26.00	19.50
55.000	0.972	-8.26	253.21	0.00	0.00	26.00	19.50
55.972	0.848	-8.26	227.64	0.00	0.00	26.00	19.50
56.820	0.972	-4.02	267.70	0.00	0.00	26.00	19.50
57.791	0.972	-4.02	274.38	0.00	0.00	26.00	19.50
58.763	0.347	-4.02	99.53	0.00	0.00	26.00	19.50
59.110	0.972	0.32	282.71	0.00	0.00	26.00	19.50
60.081	0.972	0.32	287.93	0.00	0.00	26.00	19.50
61.053	0.573	0.32	172.25	0.00	0.00	26.00	19.50
61.626	0.972	3.93	295.63	0.00	0.00	26.00	19.50
62.597	0.972	3.93	299.64	0.00	0.00	26.00	19.50
63.569	0.783	3.93	244.42	0.00	0.00	26.00	19.50
64.352	0.972	6.55	306.44	0.00	0.00	26.00	19.50
65.324	0.972	6.55	309.56	0.00	0.00	26.00	19.50
66.295	0.205	6.55	65.57	0.00	0.00	26.00	19.50
66.500	0.972	6.55	313.36	0.00	0.00	26.00	19.50
67.472	0.233	6.55	75.75	0.00	0.00	26.00	19.50
67.705	0.795	7.42	259.28	0.00	0.00	26.00	19.50
68.500	0.972	7.42	319.20	0.00	0.00	26.00	19.50
69.472	0.972	7.42	321.46	0.00	0.00	26.00	19.50
70.443	0.257	7.42	85.27	0.00	0.00	26.00	19.50
70.700	0.972	8.43	324.15	0.00	0.00	26.00	19.50
71.671	0.972	8.43	326.07	0.00	0.00	26.00	19.50
72.643	0.867	8.43	292.44	0.00	0.00	26.00	19.50
73.510	0.972	9.51	329.51	0.00	0.00	26.00	19.50
74.481	0.972	9.51	331.06	0.00	0.00	26.00	19.50
75.453	0.751	9.51	257.11	0.00	0.00	26.00	19.50
76.204	0.972	10.62	333.61	0.00	0.00	26.00	19.50
77.176	0.972	10.62	334.77	0.00	0.00	26.00	19.50
78.148	0.352	10.62	121.72	0.00	0.00	26.00	19.50
78.500	0.413	10.62	142.91	0.00	0.00	26.00	19.50
78.913	0.972	11.66	336.07	0.00	0.00	26.00	19.50
79.885	0.972	11.66	336.22	0.00	0.00	26.00	19.50
80.857	0.694	11.66	240.24	0.00	0.00	26.00	19.50
81.551	0.972	12.69	336.29	0.00	0.00	26.00	19.50
82.522	0.972	12.69	336.07	0.00	0.00	26.00	19.50
83.494	0.006	12.69	2.13	0.00	0.00	26.00	19.50
83.500	0.738	12.69	254.91	0.00	0.00	26.00	19.50
84.238	0.972	13.67	335.12	0.00	0.00	26.00	19.50
85.209	0.972	13.67	334.24	0.00	0.00	26.00	19.50
86.181	0.793	13.67	272.20	0.00	0.00	26.00	19.50
86.974	0.526	14.58	180.13	0.00	0.00	26.00	19.50

87.500	0.972	14.58	331.38	0.00	0.00	26.00	19.50
88.472	0.972	14.58	329.28	0.00	0.00	26.00	19.50
89.443	0.416	14.58	140.33	0.00	0.00	26.00	19.50
89.859	0.972	14.74	326.26	0.00	0.00	26.00	19.50
90.831	0.972	14.74	324.10	0.00	0.00	26.00	19.50
91.802	0.883	14.74	292.59	0.00	0.00	26.00	19.50
92.685	0.972	14.90	319.95	0.00	0.00	26.00	19.50
93.657	0.343	14.90	112.48	0.00	0.00	26.00	19.50
94.000	0.972	14.90	318.36	0.00	0.00	26.00	19.50
94.972	0.493	14.90	161.72	0.00	0.00	26.00	19.50
95.464	0.972	15.07	319.21	0.00	0.00	26.00	19.50
96.436	0.972	15.07	319.74	0.00	0.00	26.00	19.50
97.408	0.818	15.07	269.70	0.00	0.00	26.00	19.50
98.226	0.972	15.24	320.68	0.00	0.00	26.00	19.50
99.198	0.802	15.24	265.16	0.00	0.00	26.00	19.50
100.000	0.968	15.24	319.04	0.00	0.00	26.00	19.50
100.968	0.972	15.41	318.03	0.00	0.00	26.00	19.50
101.940	0.060	15.41	19.68	0.00	0.00	26.00	19.50
102.000	0.972	15.41	316.92	0.00	0.00	26.00	19.50
102.972	0.755	15.41	246.46	0.00	0.00	26.00	19.50
103.727	0.972	15.57	317.36	0.00	0.00	26.00	19.50
104.698	0.972	15.57	317.56	0.00	0.00	26.00	19.50
105.670	0.830	15.57	271.46	0.00	0.00	26.00	19.50
106.500	0.972	15.74	317.91	0.00	0.00	26.00	19.50
107.472	0.972	15.74	318.06	0.00	0.00	26.00	19.50
108.443	0.871	15.74	285.30	0.00	0.00	26.00	19.50
109.314	0.186	15.90	60.80	0.00	0.00	26.00	19.50
109.500	0.972	15.90	318.81	0.00	0.00	26.00	19.50
110.472	0.972	15.90	319.87	0.00	0.00	26.00	19.50
111.443	0.737	15.90	243.30	0.00	0.00	26.00	19.50
112.180	0.972	16.71	321.59	0.00	0.00	26.00	19.50
113.152	0.972	16.71	322.35	0.00	0.00	26.00	19.50
114.123	0.796	16.71	264.75	0.00	0.00	26.00	19.50
114.920	0.972	17.57	323.59	0.00	0.00	26.00	19.50
115.891	0.972	17.57	324.04	0.00	0.00	26.00	19.50
116.863	0.637	17.57	212.73	0.00	0.00	26.00	19.50
117.500	0.118	17.57	39.31	0.00	0.00	26.00	19.50
117.618	0.972	18.45	323.93	0.00	0.00	26.00	19.50
118.589	0.972	18.45	322.85	0.00	0.00	26.00	19.50
119.561	0.714	18.45	236.55	0.00	0.00	26.00	19.50
120.275	0.972	19.32	320.81	0.00	0.00	26.00	19.50
121.247	0.972	19.32	319.40	0.00	0.00	26.00	19.50
122.218	0.772	19.32	252.89	0.00	0.00	26.00	19.50
122.990	0.972	20.21	316.71	0.00	0.00	26.00	19.50
123.962	0.972	20.21	314.97	0.00	0.00	26.00	19.50
124.934	0.746	20.21	240.79	0.00	0.00	26.00	19.50
125.680	0.972	21.07	311.72	0.00	0.00	26.00	19.50
126.652	0.972	21.07	309.65	0.00	0.00	26.00	19.50
127.623	0.820	21.07	259.62	0.00	0.00	26.00	19.50
128.443	0.557	21.89	175.50	0.00	0.00	26.00	19.50
129.000	0.972	21.89	303.76	0.00	0.00	26.00	19.50
129.972	0.972	21.89	300.29	0.00	0.00	26.00	19.50
130.943	0.375	21.89	115.08	0.00	0.00	26.00	19.50
131.319	0.972	22.61	295.34	0.00	0.00	26.00	19.50
132.290	0.972	22.61	291.59	0.00	0.00	26.00	19.50
133.262	0.972	22.61	287.84	0.00	0.00	26.00	19.50
134.233	0.191	22.61	56.01	0.00	0.00	26.00	19.50
134.424	0.972	24.43	282.99	0.00	0.00	26.00	19.50
135.396	0.972	24.43	278.51	0.00	0.00	26.00	19.50
136.367	0.804	24.43	227.20	0.00	0.00	26.00	19.50
137.172	0.972	26.52	269.90	0.00	0.00	26.00	19.50
138.143	0.972	26.52	264.56	0.00	0.00	26.00	19.50
139.115	0.693	26.52	185.56	0.00	0.00	26.00	19.50
139.808	0.972	28.75	254.94	0.00	0.00	26.00	19.50
140.780	0.972	28.75	248.65	0.00	0.00	26.00	19.50
141.752	0.574	28.75	144.02	0.00	0.00	26.00	19.50

142.326	0.972	30.86	238.17	0.00	0.00	26.00	19.50
143.298	0.972	30.86	230.95	0.00	0.00	26.00	19.50
144.269	0.729	30.86	168.43	0.00	0.00	26.00	19.50
144.998	0.502	33.46	113.59	0.00	0.00	26.00	19.50
145.500	0.972	33.46	213.16	0.00	0.00	26.00	19.50
146.472	0.972	33.46	204.40	0.00	0.00	26.00	19.50
147.443	0.384	33.46	78.42	0.00	0.00	26.00	19.50
147.828	0.972	35.45	191.68	0.00	0.00	26.00	19.50
148.799	0.972	35.45	181.93	0.00	0.00	26.00	19.50
149.771	0.972	35.45	172.18	0.00	0.00	26.00	19.50
150.742	0.377	35.45	64.20	0.00	0.00	26.00	19.50
151.119	0.972	37.11	158.23	0.00	0.00	26.00	19.50
152.091	0.972	37.11	147.63	0.00	0.00	26.00	19.50
153.063	0.937	37.11	132.37	0.00	0.00	26.00	19.50
154.000	0.972	37.11	126.85	0.00	0.00	26.00	19.50
154.972	0.941	37.11	112.91	0.00	0.00	26.00	19.50
155.913	0.972	37.90	105.99	0.00	0.00	26.00	19.50
156.885	0.972	37.90	95.07	0.00	0.00	26.00	19.50
157.856	0.972	37.90	84.16	0.00	0.00	26.00	19.50
158.828	0.972	37.90	73.25	0.00	0.00	26.00	19.50
159.800	0.972	37.90	62.33	0.00	0.00	26.00	19.50
160.771	0.972	37.90	51.42	0.00	0.00	26.00	19.50

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
alpha(°) : Angolo pendenza base concio
W(kN/m) : Forza peso concio
ru(-) : Coefficiente locale pressione interstiziale
U(kPa) : Pressione totale dei pori base concio
phi'(°) : Angolo di attrito efficace base concio
c'/Cu (kPa) : Coesione efficace o Resistenza al taglio in condizioni non drenate
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TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	ht (m)	yt (m)	yt' (--)	E(x) (kN/m)	T(x) (kN/m)	E' (kN)	rho(x) (--)	FS_qFEM (--)	FS_srmFEM (--)		
33.487	0.000	220.169	-0.247	0.0000000000E+000	0.0000000000E+000	1.1869313162E+000	0.073	12.364	9.160		
34.458	0.153	219.928	-0.247	2.7477088394E+000	4.6180984917E-003	4.4690184519E+000	0.073	12.364	9.160		
35.430	0.308	219.690	-0.241	8.6843497607E+000	7.6458529142E-002	9.7107430176E+000	0.073	8.455	6.439		
36.402	0.472	219.460	-0.230	2.1617957353E+001	5.5992521588E-001	1.6906610298E+001	0.073	8.220	6.828		
37.373	0.649	219.244	-0.236	4.1537854099E+001	2.2008953669E+000	2.5198928481E+001	0.073	8.439	7.304		
38.345	0.800	219.001	-0.237	7.0585378473E+001	6.3166450103E+000	3.7560161274E+001	0.147	8.480	7.074		
39.316	0.976	218.783	-0.204	1.1452604627E+002	1.2386577292E+001	4.9281252050E+001	0.213	8.288	6.534		
40.288	1.190	218.603	-0.174	1.6635039579E+002	1.9686338020E+001	5.8928395783E+001	0.262	7.988	6.029		
41.260	1.425	218.444	-0.166	2.2903772379E+002	2.9083603691E+001	6.6090676031E+001	0.308	7.619	5.575		
41.500	1.481	218.403	-0.169	2.4501628886E+002	3.1537009207E+001	6.7285935139E+001	0.318	7.529	5.485		
42.472	1.711	218.240	-0.162	3.1355959736E+002	4.2097845829E+001	7.5086985326E+001	0.351	7.171	5.148		
43.443	1.952	218.087	-0.155	3.9092789116E+002	5.4554946697E+001	8.4631769759E+001	0.382	6.803	4.840		
43.756	2.033	218.041	-0.148	4.1794137065E+002	5.9078035353E+001	8.8740490488E+001	0.392	6.677	4.744		
44.728	2.257	217.898	-0.144	5.1168542378E+002	7.5410216024E+001	1.0148573105E+002	0.426	6.259	4.451		
45.700	2.489	217.762	-0.137	6.1515192006E+002	9.4352472586E+001	1.1246001624E+002	0.460	5.841	4.188		
46.671	2.726	217.632	-0.130	7.3022158012E+002	1.1659039208E+002	1.2468592756E+002	0.494	5.428	3.950		
47.643	2.971	217.509	-0.121	8.5744588613E+002	1.4254184409E+002	1.3308036554E+002	0.528	5.009	3.735		
48.523	3.202	217.408	-0.112	9.7629093729E+002	1.6787088084E+002	1.3831952854E+002	0.558	4.663	3.567		
49.000	3.302	217.356	-0.092	1.0431036237E+003	1.8255990256E+002	1.3776112736E+002	0.574	4.489	3.483		
49.972	3.529	217.274	-0.077	1.1723090225E+003	2.1273899860E+002	1.3370013986E+002	0.605	4.170	3.336		
50.943	3.769	217.207	-0.062	1.3029143159E+003	2.4470661130E+002	1.3601368781E+002	0.635	3.884	3.206		
51.671	3.963	217.170	-0.039	1.4027355584E+003	2.7046939445E+002	1.3382405166E+002	0.657	3.685	3.115		
52.642	4.168	217.141	-0.021	1.5283720819E+003	3.0450278728E+002	1.2671954869E+002	0.687	3.454	3.008		
53.614	4.390	217.130	-0.004	1.6489813267E+003	3.3857519452E+002	1.2351150943E+002	0.714	3.258	2.914		
54.236	4.545	217.135	0.016	1.7255820113E+003	3.6117234979E+002	1.2034203304E+002	0.731	3.143	2.855		
55.000	4.672	217.151	0.032	1.8149017264E+003	3.8838224474E+002	1.1550524971E+002	0.752	3.020	2.790		

55.972	4.852	217.190	0.049	1.9253561715E+003	4.2329813426E+002	1.0999230933E+002	0.777	2.883	2.713
56.820	5.026	217.240	0.069	2.0159029288E+003	4.5316953140E+002	1.0093535162E+002	0.797	2.780	2.650
57.791	5.169	217.315	0.085	2.1074751636E+003	4.8489922086E+002	9.0409636249E+001	0.820	2.683	2.587
58.763	5.328	217.406	0.100	2.1915900313E+003	5.1530144541E+002	8.4905293182E+001	0.840	2.599	2.529
59.110	5.394	217.448	0.127	2.2208234911E+003	5.2641515032E+002	8.2630472144E+001	0.848	2.570	2.508
60.081	5.513	217.573	0.141	2.2965345632E+003	5.5605070122E+002	7.6231321418E+001	0.868	2.498	2.454
61.053	5.658	217.722	0.156	2.3689588065E+003	5.8569671330E+002	7.0224838047E+001	0.889	2.430	2.401
61.626	5.745	217.813	0.162	2.4077398802E+003	6.0200314702E+002	6.4545856551E+001	0.900	2.394	2.372
62.597	5.838	217.973	0.171	2.4652900814E+003	6.2708242172E+002	5.6258985489E+001	0.918	2.341	2.329
63.569	5.945	218.146	0.179	2.5170642682E+003	6.5043835057E+002	5.0005380530E+001	0.934	2.294	2.290
64.352	6.032	218.287	0.180	2.5541528027E+003	6.6756262597E+002	4.4911917110E+001	0.945	2.261	2.262
65.324	6.094	218.461	0.180	2.5948378929E+003	6.8675045183E+002	3.9698256465E+001	0.958	2.225	2.231
66.295	6.158	218.636	0.180	2.6312958147E+003	7.0420146914E+002	3.6680078022E+001	0.969	2.194	2.203
66.500	6.171	218.673	0.172	2.6387629760E+003	7.0777829555E+002	3.5402142365E+001	0.972	2.187	2.197
67.472	6.225	218.838	0.169	2.6680817348E+003	7.2193509170E+002	2.8835116477E+001	0.980	2.163	2.175
67.705	6.237	218.877	0.173	2.6747365950E+003	7.2515165222E+002	2.8282523311E+001	0.982	2.158	2.170
68.500	6.273	219.016	0.179	2.6965961803E+003	7.3578766689E+002	2.7052808242E+001	0.989	2.140	2.153
69.472	6.324	219.194	0.183	2.7223539421E+003	7.4837793564E+002	2.5290438509E+001	0.997	2.121	2.133
70.443	6.375	219.371	0.184	2.7457414269E+003	7.5987495759E+002	2.3047943229E+001	1.004	2.103	2.115
70.700	6.390	219.420	0.211	2.7515858537E+003	7.6278288506E+002	2.3131103801E+001	1.005	2.098	2.111
71.671	6.456	219.630	0.219	2.7753601087E+003	7.7477859049E+002	2.3688751512E+001	1.013	2.080	2.092
72.643	6.527	219.845	0.224	2.7976186472E+003	7.8613597010E+002	2.2281893092E+001	1.020	2.062	2.074
73.510	6.596	220.042	0.232	2.8164433988E+003	7.9584796900E+002	2.0965311373E+001	1.026	2.046	2.058
74.481	6.662	220.271	0.228	2.8359884750E+003	8.0610434749E+002	1.8498576555E+001	1.033	2.028	2.042
75.453	6.713	220.485	0.211	2.8523904665E+003	8.1487210926E+002	1.4840651773E+001	1.038	2.013	2.028
76.204	6.737	220.635	0.206	2.8623568131E+003	8.2031113214E+002	1.2353326967E+001	1.041	2.002	2.019
77.176	6.761	220.840	0.212	2.8732173469E+003	8.2633768178E+002	9.9984528696E+000	1.045	1.988	2.010
78.148	6.784	221.046	0.212	2.8817861492E+003	8.3115222941E+002	7.2410778314E+000	1.048	1.977	2.002
78.500	6.793	221.121	0.204	2.8841363435E+003	8.3248022046E+002	5.8078988702E+000	1.049	1.973	2.000
78.913	6.797	221.203	0.206	2.8861198719E+003	8.3361474496E+002	4.4564445854E+000	1.049	1.969	1.998
79.885	6.800	221.406	0.209	2.8896694304E+003	8.3569433028E+002	2.6841704189E+000	1.051	1.960	1.995
80.857	6.803	221.609	0.209	2.8913358438E+003	8.3675186096E+002	7.5573007007E-001	1.052	1.953	1.994
81.551	6.805	221.755	0.214	2.8913847669E+003	8.3688599097E+002	-7.2982496597E-001	1.052	1.948	1.993
82.522	6.798	221.967	0.212	2.8895869700E+003	8.3609312212E+002	-2.7017615822E+000	1.051	1.942	1.995
83.494	6.780	222.167	0.207	2.8861346112E+003	8.3441500948E+002	-4.5214718333E+000	1.050	1.938	1.997
83.500	6.780	222.169	0.201	2.8861067563E+003	8.3440115249E+002	-4.5329783257E+000	1.050	1.938	1.997
84.238	6.762	222.317	0.206	2.8822876333E+003	8.3247961829E+002	-5.9151398249E+000	1.049	1.935	2.000
85.209	6.730	222.521	0.213	2.8755963249E+003	8.2908176117E+002	-7.6978811139E+000	1.047	1.933	2.004
86.181	6.704	222.731	0.215	2.8673288470E+003	8.2485547874E+002	-9.5174486258E+000	1.045	1.932	2.010
86.974	6.679	222.899	0.211	2.8591269585E+003	8.2065711273E+002	-1.0794746419E+001	1.043	1.933	2.015
87.500	6.652	223.009	0.217	2.8532910040E+003	8.1768005466E+002	-1.1641633136E+001	1.041	1.933	2.019
88.472	6.614	223.224	0.220	2.8410001462E+003	8.1145274003E+002	-1.3039158061E+001	1.038	1.936	2.027
89.443	6.575	223.438	0.219	2.8279528654E+003	8.0489833882E+002	-1.3592769856E+001	1.035	1.940	2.035
89.859	6.557	223.527	0.226	2.8222693680E+003	8.0206998303E+002	-1.4002611742E+001	1.033	1.941	2.038
90.831	6.525	223.751	0.228	2.8078937528E+003	7.9502810527E+002	-1.4843948825E+001	1.030	1.946	2.046
91.802	6.489	223.971	0.223	2.7934240981E+003	7.8813086725E+002	-1.4753596982E+001	1.026	1.951	2.054
92.685	6.451	224.165	0.222	2.7805115853E+003	7.8221415700E+002	-1.4762803566E+001	1.024	1.955	2.060
93.657	6.411	224.383	0.226	2.7660231396E+003	7.7582255442E+002	-1.5052321185E+001	1.021	1.961	2.066
94.000	6.398	224.462	0.246	2.7608403204E+003	7.7359462326E+002	-1.5454372702E+001	1.020	1.962	2.069
94.972	6.384	224.706	0.251	2.7448552722E+003	7.6708625265E+002	-1.6337335560E+001	1.016	1.967	2.074
95.464	6.376	224.830	0.258	2.7368317300E+003	7.6396372733E+002	-1.6509719476E+001	1.014	1.970	2.077
96.436	6.369	225.084	0.265	2.7203490088E+003	7.5780105408E+002	-1.7160481362E+001	1.010	1.974	2.081
97.408	6.368	225.345	0.262	2.7034848947E+003	7.5175850751E+002	-1.6923596975E+001	1.007	1.978	2.085
98.226	6.357	225.554	0.259	2.6899343802E+003	7.4714492231E+002	-1.6845196193E+001	1.005	1.981	2.087
99.198	6.347	225.809	0.263	2.6732368864E+003	7.4165786910E+002	-1.7266174072E+001	1.002	1.984	2.089
100.000	6.339	226.019	0.263	2.6593300779E+003	7.3721598356E+002	-1.7433962442E+001	1.000	1.985	2.090
100.968	6.330	226.274	0.265	2.6423353608E+003	7.3192853240E+002	-1.7832808456E+001	0.999	1.987	2.090
101.940	6.322	226.534	0.268	2.6247385478E+003	7.2661627947E+002	-1.8481102572E+001	0.999	1.988	2.089
102.000	6.321	226.550	0.275	2.6236219687E+003	7.2628941618E+002	-1.8519839784E+001	0.999	1.988	2.089
102.972	6.321	226.817	0.269	2.6053814838E+003	7.2098819269E+002	-1.8293996227E+001	0.997	1.988	2.086
103.727	6.310	227.014	0.270	2.5918499128E+003	7.1714895132E+002	-1.8457242234E+001	0.995	1.988	2.083
104.698	6.308	227.283	0.280	2.5732467076E+003	7.1198413187E+002	-1.9338645079E+001	0.994	1.987	2.077
105.670	6.312	227.557	0.281	2.5542703951E+003	7.0681738318E+002	-1.9479281889E+001	0.992	1.985	2.070
106.500	6.312	227.789	0.287	2.5381374688E+003	7.0251009072E+002	-1.9938284171E+001	0.991	1.983	2.064
107.472	6.324	228.074	0.293	2.5181931638E+003	6.9728330758E+002	-2.0589941698E+001	0.990	1.980	2.054
108.443	6.334	228.359	0.294	2.4981263887E+003	6.9211309343E+002	-2.0868145050E+001	0.989	1.976	2.043

109.314	6.346	228.616	0.298	2.4797784666E+003	6.8743916322E+002	-2.2280691836E+001	0.988	1.972	2.032
109.500	6.351	228.674	0.315	2.4755946791E+003	6.8637689223E+002	-2.2675346336E+001	0.988	1.971	2.029
110.472	6.381	228.980	0.317	2.4528772882E+003	6.8064485594E+002	-2.3851239665E+001	0.986	1.965	2.015
111.443	6.414	229.290	0.314	2.4292461331E+003	6.7468715952E+002	-2.4224985877E+001	0.984	1.958	1.999
112.180	6.430	229.517	0.314	2.4114490272E+003	6.7018817729E+002	-2.4976256019E+001	0.983	1.952	1.988
113.152	6.449	229.827	0.319	2.3861254560E+003	6.6372785469E+002	-2.6516027263E+001	0.981	1.945	1.972
114.123	6.467	230.136	0.314	2.3599221746E+003	6.5694788347E+002	-2.7186625449E+001	0.979	1.937	1.956
114.920	6.475	230.383	0.313	2.3381318451E+003	6.5120134075E+002	-2.8204167490E+001	0.977	1.930	1.944
115.891	6.475	230.691	0.315	2.3097335408E+003	6.4352901581E+002	-2.9750323074E+001	0.974	1.922	1.930
116.863	6.472	230.995	0.305	2.2803199981E+003	6.3535409012E+002	-2.9832245867E+001	0.971	1.914	1.916
117.500	6.456	231.181	0.289	2.2614969266E+003	6.2995616078E+002	-2.8983314179E+001	0.969	1.909	1.909
117.618	6.451	231.213	0.287	2.2580981893E+003	6.2895850976E+002	-2.9138232874E+001	0.969	1.909	1.908
118.589	6.407	231.494	0.292	2.2277144282E+003	6.1984680621E+002	-3.2329880453E+001	0.965	1.902	1.897
119.561	6.370	231.781	0.295	2.1952736580E+003	6.0978935638E+002	-3.4040913416E+001	0.961	1.895	1.887
120.275	6.342	231.991	0.301	2.1706272028E+003	6.0190390474E+002	-3.5661600177E+001	0.958	1.891	1.881
121.247	6.299	232.289	0.318	2.1344688035E+003	5.9001286716E+002	-3.9248275397E+001	0.952	1.885	1.872
122.218	6.278	232.608	0.330	2.0943586094E+003	5.7644746095E+002	-4.2178171944E+001	0.945	1.880	1.863
122.990	6.264	232.865	0.342	2.0612327671E+003	5.6502152987E+002	-4.4416716938E+001	0.938	1.876	1.857
123.962	6.245	233.204	0.355	2.0162113411E+003	5.4929066915E+002	-4.7645857948E+001	0.929	1.873	1.851
124.934	6.238	233.554	0.348	1.9686457036E+003	5.3253532704E+002	-4.7362177726E+001	0.918	1.870	1.845
125.680	6.211	233.802	0.323	1.9342059717E+003	5.2033390453E+002	-4.5624347910E+001	0.910	1.869	1.842
126.652	6.143	234.109	0.326	1.8905267009E+003	5.0484132563E+002	-4.6929898874E+001	0.900	1.869	1.840
127.623	6.095	234.435	0.327	1.8430101844E+003	4.8802463337E+002	-4.7975158321E+001	0.888	1.871	1.840
128.443	6.039	234.695	0.318	1.8043275692E+003	4.7439003934E+002	-4.7608070044E+001	0.878	1.873	1.842
129.000	5.993	234.872	0.314	1.7776554114E+003	4.6502503709E+002	-4.7786572810E+001	0.871	1.875	1.844
129.972	5.904	235.174	0.305	1.7314028429E+003	4.4886722813E+002	-4.7136761556E+001	0.860	1.879	1.849
130.943	5.805	235.466	0.295	1.6860576415E+003	4.3310241093E+002	-4.5209143563E+001	0.849	1.884	1.856
131.319	5.761	235.572	0.302	1.6692997639E+003	4.2729020875E+002	-4.5880896379E+001	0.845	1.886	1.859
132.290	5.656	235.872	0.311	1.6216123996E+003	4.1075379444E+002	-4.9813290676E+001	0.832	1.892	1.868
133.262	5.556	236.177	0.311	1.5725008709E+003	3.9372610367E+002	-5.0487558250E+001	0.819	1.898	1.879
134.233	5.452	236.477	0.312	1.5235032467E+003	3.7675235814E+002	-5.3117904073E+001	0.805	1.904	1.890
134.424	5.435	236.539	0.334	1.5132812137E+003	3.7321669393E+002	-5.3954909260E+001	0.801	1.905	1.893
135.396	5.319	236.865	0.341	1.4593235468E+003	3.5461230159E+002	-5.6616817772E+001	0.785	1.911	1.906
136.367	5.214	237.201	0.346	1.4032614738E+003	3.3538756830E+002	-5.7956565033E+001	0.767	1.918	1.921
137.172	5.127	237.480	0.367	1.3564685490E+003	3.1948051819E+002	-6.1170894689E+001	0.752	1.924	1.934
138.143	5.016	237.853	0.390	1.2935111886E+003	2.9843206052E+002	-6.5833136993E+001	0.730	1.934	1.953
139.115	4.916	238.238	0.387	1.2285393418E+003	2.7706516498E+002	-6.4623276671E+001	0.707	1.945	1.973
139.808	4.829	238.497	0.398	1.1848374701E+003	2.6299085865E+002	-6.5870313370E+001	0.692	1.954	1.989
140.780	4.699	238.900	0.418	1.1169563350E+003	2.4178622419E+002	-7.0038722786E+001	0.667	1.971	2.015
141.752	4.574	239.309	0.417	1.0487358245E+003	2.2104335820E+002	-6.9096536929E+001	0.642	1.992	2.046
142.326	4.496	239.546	0.403	1.0094299172E+003	2.0943271789E+002	-6.7226143353E+001	0.627	2.006	2.065
143.298	4.302	239.932	0.413	9.4610105648E+002	1.9137451721E+002	-6.6961471159E+001	0.605	2.034	2.101
144.269	4.137	240.347	0.428	8.7930809235E+002	1.7308849509E+002	-6.8059113165E+001	0.580	2.070	2.145
144.998	4.014	240.659	0.422	8.3009683534E+002	1.6005086792E+002	-6.5390631017E+001	0.562	2.100	2.181
145.500	3.888	240.866	0.426	7.9799911341E+002	1.5178288808E+002	-6.4580542467E+001	0.550	2.122	2.207
146.472	3.667	241.287	0.439	7.3398201758E+002	1.3569446837E+002	-6.5759588045E+001	0.527	2.172	2.264
147.443	3.457	241.719	0.443	6.7021282905E+002	1.2015154760E+002	-6.3318338871E+001	0.502	2.230	2.328
147.828	3.371	241.887	0.451	6.4623322563E+002	1.1447350781E+002	-6.2670743082E+001	0.492	2.254	2.354
148.799	3.123	242.330	0.467	5.8468421450E+002	1.0017803567E+002	-6.3430433828E+001	0.467	2.320	2.425
149.771	2.895	242.795	0.478	5.2297303354E+002	8.6216156394E+001	-6.1696361931E+001	0.439	2.394	2.503
150.742	2.668	243.259	0.480	4.6479373033E+002	7.3467870569E+001	-5.9045231334E+001	0.411	2.468	2.580
151.119	2.582	243.442	0.505	4.4264998005E+002	6.8694353691E+001	-5.8726741253E+001	0.399	2.497	2.609
152.091	2.346	243.941	0.525	3.8557744913E+002	5.6776215292E+001	-5.7797548976E+001	0.367	2.570	2.681
153.063	2.132	244.462	0.537	3.3033580279E+002	4.5702472096E+001	-5.4326512704E+001	0.332	2.633	2.739
154.000	1.926	244.965	0.554	2.8170138022E+002	3.6460719354E+001	-5.4329830338E+001	0.298	2.718	2.820
154.972	1.745	245.519	0.573	2.2645316898E+002	2.5704111461E+001	-5.4104585923E+001	0.244	2.787	2.880
155.913	1.576	246.062	0.590	1.7803056703E+002	1.6920960033E+001	-4.9512193580E+001	0.188	2.822	2.899
156.885	1.404	246.647	0.589	1.3184929632E+002	9.3463186702E+000	-4.2984506270E+001	0.125	2.787	2.836
157.856	1.208	247.207	0.587	9.4501601827E+001	4.3695244241E+000	-3.5921955793E+001	0.073	2.661	2.666
158.828	1.033	247.788	0.606	6.2044521164E+001	1.4623511720E+000	-3.0474352475E+001	0.073	2.438	2.390
159.800	0.873	248.385	0.621	3.5282796071E+001	3.6051315294E-001	-2.4582962742E+001	0.073	2.164	2.079
160.771	0.726	248.995	0.621	1.4274065771E+001	6.6132055622E-002	-1.8156738388E+001	0.073	1.971	1.863

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio

ht(m) : Altezza linea di thrust da nodo sinistro base concio
yt(m) : coordinata Y linea di trust
yt'(-) : gradiente pendenza locale linea di trust
E(x)(kN/m) : Forza Normale interconcio
T(x)(kN/m) : Forza Tangenziale interconcio
E' (kN) : derivata Forza normale interconcio
Rho(x) (-) : fattore mobilizzazione resistenza al taglio verticale interconcio ZhU et al.(2003)
FS_qFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by qFEM
FS_srmFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by SRM Procedure
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TABELLA SFORZI DI TAGLIO DISTRIBUITI LUNGO SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	dl (m)	alpha (°)	TauStress (kPa)	TauF (kN/m)	TauStrength (kPa)	TauS (kN/m)
33.487	0.972	1.048	-22.055	-1.968	-2.063	22.136	23.206
34.458	0.972	1.048	-22.055	-5.905	-6.190	27.479	28.807
35.430	0.972	1.048	-22.055	-9.841	-10.317	33.240	34.846
36.402	0.972	1.048	-22.055	-13.778	-14.444	39.907	41.836
37.373	0.972	1.048	-22.055	-17.715	-18.571	48.176	50.504
38.345	0.972	1.048	-22.055	-21.651	-22.698	55.811	58.509
39.316	0.972	1.048	-22.055	-25.588	-26.824	62.567	65.590
40.288	0.972	1.048	-22.055	-29.524	-30.951	70.377	73.778
41.260	0.240	0.259	-22.055	-31.980	-8.293	74.290	19.266
41.500	0.972	1.048	-22.055	-34.473	-36.139	78.405	82.194
42.472	0.972	1.048	-22.055	-38.487	-40.347	86.073	90.233
43.443	0.313	0.338	-22.055	-41.141	-13.904	91.532	30.933
43.756	0.972	1.039	-20.714	-41.273	-42.873	98.285	102.096
44.728	0.972	1.039	-20.714	-44.903	-46.644	106.605	110.737
45.700	0.972	1.039	-20.714	-48.533	-50.414	115.736	120.223
46.671	0.972	1.039	-20.714	-52.162	-54.185	125.362	130.222
47.643	0.880	0.941	-20.714	-55.622	-52.342	132.722	124.897
48.523	0.477	0.500	-17.612	-49.629	-24.830	139.246	69.667
49.000	0.972	1.019	-17.612	-51.708	-52.711	143.152	145.929
49.972	0.972	1.019	-17.612	-54.494	-55.551	149.994	152.903
50.943	0.728	0.763	-17.612	-56.930	-43.455	156.944	119.795
51.671	0.972	0.999	-13.514	-44.764	-44.732	160.297	160.182
52.642	0.972	0.999	-13.514	-46.576	-46.542	164.675	164.557
53.614	0.622	0.640	-13.514	-48.061	-30.755	169.433	108.422
54.236	0.764	0.772	-8.258	-27.342	-21.103	169.307	130.674
55.000	0.972	0.982	-8.258	-28.109	-27.597	172.965	169.816
55.972	0.848	0.857	-8.258	-28.952	-24.810	176.159	150.954
56.820	0.972	0.974	-4.025	-9.694	-9.442	174.400	169.869
57.791	0.972	0.974	-4.025	-9.936	-9.678	176.873	172.277
58.763	0.347	0.348	-4.025	-10.100	-3.511	179.629	62.438
59.110	0.972	0.972	0.324	11.828	11.493	175.882	170.893
60.081	0.972	0.972	0.324	12.046	11.705	178.507	173.443
61.053	0.573	0.573	0.324	12.220	7.002	179.613	102.921
61.626	0.972	0.974	3.926	31.382	30.563	175.519	170.939
62.597	0.972	0.974	3.926	31.808	30.978	176.922	172.305
63.569	0.783	0.785	3.926	32.192	25.269	177.998	139.719
64.352	0.972	0.978	6.553	46.654	45.628	175.316	171.460
65.324	0.972	0.978	6.553	47.129	46.093	176.440	172.559
66.295	0.205	0.206	6.553	47.417	9.764	177.261	36.500
66.500	0.972	0.978	6.553	47.709	46.659	177.526	173.622
67.472	0.233	0.235	6.553	48.008	11.279	178.313	41.891
67.705	0.795	0.802	7.416	52.971	42.466	177.877	142.603
68.500	0.972	0.980	7.416	53.357	52.280	178.928	175.316
69.472	0.972	0.980	7.416	53.735	52.650	179.816	176.186
70.443	0.257	0.259	7.416	53.974	13.966	180.419	46.683
70.700	0.972	0.982	8.428	59.796	58.733	179.870	176.672
71.671	0.972	0.982	8.428	60.149	59.080	180.702	177.490
72.643	0.867	0.876	8.428	60.484	52.987	181.511	159.013
73.510	0.972	0.985	9.506	66.786	65.794	180.698	178.014
74.481	0.972	0.985	9.506	67.099	66.103	181.269	178.576

75.453	0.751	0.762	9.506	67.378	51.337	181.724	138.461
76.204	0.972	0.989	10.618	73.791	72.946	180.683	178.613
77.176	0.972	0.989	10.618	74.048	73.200	181.150	179.074
78.148	0.352	0.359	10.618	74.223	26.614	181.443	65.058
78.500	0.413	0.421	10.618	74.294	31.248	181.520	76.346
78.913	0.972	0.992	11.655	80.048	79.413	180.221	178.792
79.885	0.972	0.992	11.655	80.083	79.448	180.255	178.826
80.857	0.694	0.709	11.655	80.114	56.768	180.285	127.749
81.551	0.972	0.996	12.693	85.719	85.372	178.898	178.175
82.522	0.972	0.996	12.693	85.664	85.317	178.801	178.078
83.494	0.006	0.006	12.693	85.636	0.540	178.752	1.127
83.500	0.738	0.756	12.693	85.584	64.712	178.658	135.086
84.238	0.972	1.000	13.675	90.626	90.622	177.117	177.111
85.209	0.972	1.000	13.675	90.388	90.384	176.740	176.733
86.181	0.793	0.816	13.675	90.171	73.607	176.404	144.000
86.974	0.526	0.543	14.577	94.647	51.436	174.965	95.085
87.500	0.972	1.004	14.577	94.256	94.626	174.381	175.067
88.472	0.972	1.004	14.577	93.659	94.027	173.429	174.111
89.443	0.416	0.430	14.577	93.232	40.072	172.735	74.243
89.859	0.972	1.005	14.737	93.600	94.037	171.862	172.665
90.831	0.972	1.005	14.737	92.981	93.415	170.847	171.644
91.802	0.883	0.913	14.737	92.391	84.333	169.857	155.042
92.685	0.972	1.005	14.902	92.601	93.104	168.673	169.590
93.657	0.343	0.355	14.902	92.167	32.731	167.969	59.651
94.000	0.972	1.005	14.902	92.138	92.639	167.942	168.854
94.972	0.493	0.510	14.902	92.266	47.058	168.115	85.743
95.464	0.972	1.006	15.069	93.198	93.778	168.099	169.145
96.436	0.972	1.006	15.069	93.352	93.932	168.332	169.379
97.408	0.818	0.847	15.069	93.494	79.233	168.502	142.800
98.226	0.972	1.007	15.238	94.449	95.113	168.495	169.679
99.198	0.802	0.832	15.238	94.575	78.645	168.681	140.270
100.000	0.968	1.003	15.238	94.315	94.627	168.265	168.823
100.968	0.972	1.008	15.406	94.480	95.220	167.035	168.343
101.940	0.060	0.063	15.406	94.130	5.892	166.485	10.421
102.000	0.972	1.008	15.406	94.149	94.886	166.518	167.822
102.972	0.755	0.783	15.406	94.218	73.791	166.587	130.469
103.727	0.972	1.009	15.572	95.073	95.895	166.488	167.927
104.698	0.972	1.009	15.572	95.135	95.957	166.583	168.022
105.670	0.830	0.862	15.572	95.192	82.028	166.655	143.609
106.500	0.972	1.009	15.736	96.022	96.930	166.533	168.106
107.472	0.972	1.009	15.736	96.066	96.974	166.593	168.167
108.443	0.871	0.905	15.736	96.108	86.987	166.661	150.845
109.314	0.186	0.193	15.895	96.888	18.698	166.526	32.138
109.500	0.972	1.010	15.895	97.052	98.046	166.796	168.504
110.472	0.972	1.010	15.895	97.375	98.372	167.313	169.027
111.443	0.737	0.766	15.895	97.659	74.824	167.738	128.518
112.180	0.972	1.014	16.707	101.761	103.230	167.066	169.478
113.152	0.972	1.014	16.707	102.003	103.476	167.466	169.884
114.123	0.796	0.831	16.707	102.223	84.986	167.820	139.521
114.920	0.972	1.019	17.566	106.421	108.458	166.976	170.172
115.891	0.972	1.019	17.566	106.569	108.609	167.276	170.477
116.863	0.637	0.668	17.566	106.692	71.302	167.455	111.909
117.500	0.118	0.123	17.566	106.725	13.174	167.502	20.677
117.618	0.972	1.024	18.450	110.588	113.272	166.157	170.189
118.589	0.972	1.024	18.450	110.219	112.894	165.887	169.912
119.561	0.714	0.753	18.450	109.899	82.717	165.620	124.655
120.275	0.972	1.030	19.320	113.379	116.735	164.201	169.061
121.247	0.972	1.030	19.320	112.882	116.223	164.010	168.864
122.218	0.772	0.818	19.320	112.436	92.020	163.660	133.943
122.990	0.972	1.035	20.210	115.721	119.813	162.240	167.977
123.962	0.972	1.035	20.210	115.084	119.154	161.775	167.496
124.934	0.746	0.795	20.210	114.521	91.092	160.851	127.943
125.680	0.972	1.041	21.074	117.421	122.266	158.848	165.402
126.652	0.972	1.041	21.074	116.640	121.453	158.376	164.910
127.623	0.820	0.878	21.074	115.920	101.830	157.343	138.219
128.443	0.557	0.600	21.887	118.498	71.121	155.646	93.417

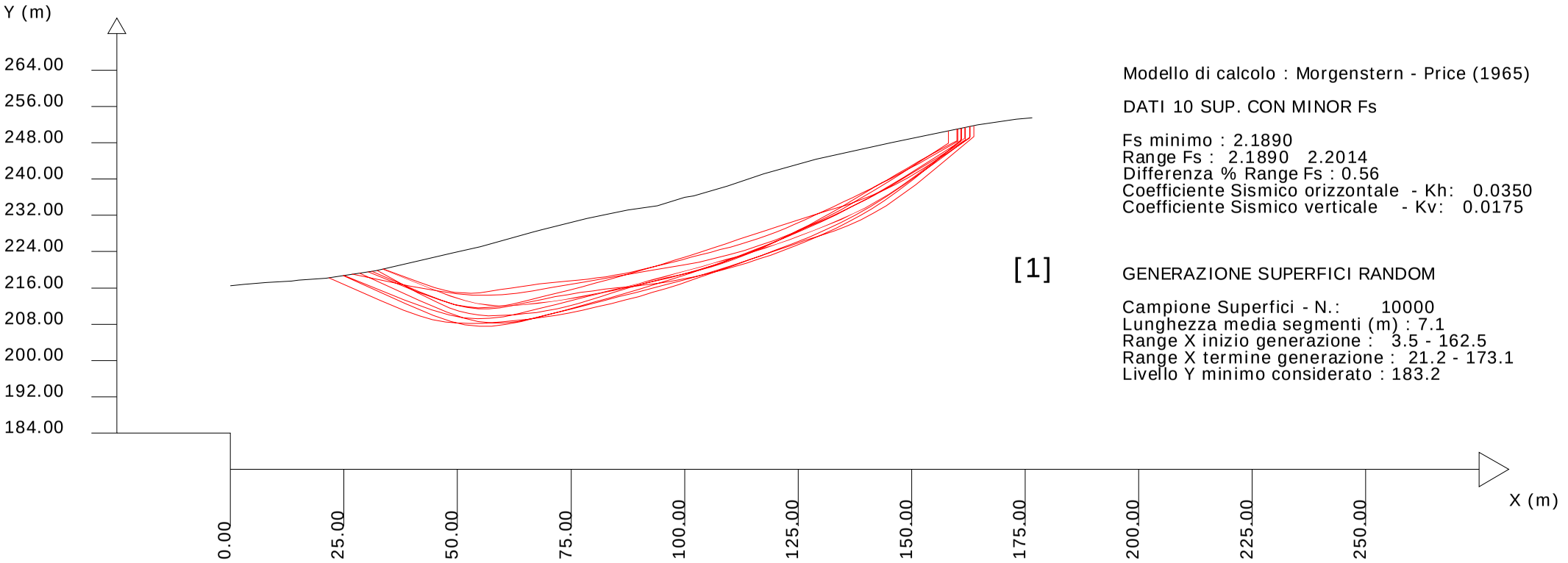
129.000	0.972	1.047	21.887	117.562	123.098	154.553	161.831
129.972	0.972	1.047	21.887	116.220	121.692	152.939	160.140
130.943	0.375	0.405	21.887	115.289	46.636	151.664	61.351
131.319	0.972	1.052	22.608	116.938	123.076	150.151	158.033
132.290	0.972	1.052	22.608	115.453	121.513	148.753	156.561
133.262	0.972	1.052	22.608	113.968	119.950	147.152	154.876
134.233	0.191	0.206	22.608	113.080	23.341	146.599	30.259
134.424	0.972	1.067	24.427	118.115	126.046	143.430	153.060
135.396	0.972	1.067	24.427	116.247	124.052	141.865	151.390
136.367	0.804	0.884	24.427	114.540	101.198	140.185	123.855
137.172	0.972	1.086	26.524	118.778	128.983	136.560	148.293
138.143	0.972	1.086	26.524	116.429	126.432	134.611	146.176
139.115	0.693	0.775	26.524	114.416	88.676	131.984	102.292
139.808	0.972	1.108	28.748	117.701	130.437	127.945	141.790
140.780	0.972	1.108	28.748	114.797	127.220	125.305	138.864
141.752	0.574	0.655	28.748	112.488	73.689	122.790	80.438
142.326	0.972	1.132	30.858	114.255	129.318	116.996	132.421
143.298	0.972	1.132	30.858	110.787	125.393	114.520	129.618
144.269	0.729	0.849	30.858	107.753	91.451	111.670	94.775
144.998	0.502	0.602	33.460	109.532	65.944	105.479	63.504
145.500	0.972	1.165	33.460	106.259	123.753	103.303	120.311
146.472	0.972	1.165	33.460	101.890	118.665	99.937	116.391
147.443	0.384	0.461	33.460	98.842	45.527	97.036	44.695
147.828	0.972	1.193	35.452	97.792	116.642	92.212	109.986
148.799	0.972	1.193	35.452	92.819	110.711	88.802	105.919
149.771	0.972	1.193	35.452	87.847	104.780	84.749	101.085
150.742	0.377	0.463	35.452	84.396	39.069	82.224	38.063
151.119	0.972	1.218	37.108	81.980	99.878	77.793	94.777
152.091	0.972	1.218	37.108	76.487	93.186	73.852	89.976
153.063	0.937	1.175	37.108	71.092	83.555	69.473	81.653
154.000	0.972	1.218	37.108	65.725	80.074	67.154	81.815
154.972	0.941	1.181	37.108	60.374	71.274	62.650	73.960
155.913	0.972	1.231	37.903	55.254	68.039	57.627	70.961
156.885	0.972	1.231	37.903	49.565	61.033	52.284	64.381
157.856	0.972	1.231	37.903	43.875	54.027	47.353	58.309
158.828	0.972	1.231	37.903	38.186	47.021	42.627	52.490
159.800	0.972	1.231	37.903	32.496	40.015	38.680	47.630
160.771	0.972	1.231	37.903	26.806	33.009	35.184	43.325

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
dl(m) : lunghezza base concio
alpha(°) : Angolo pendenza base concio
TauStress(kPa) : Sforzo di taglio su base concio
TauF (kN/m) : Forza di taglio su base concio
TauStrength(kPa) : Resistenza al taglio su base concio
TauS (kN/m) : Forza resistente al taglio su base concio

SSAP 5.0.2 (2021) - Slope Stability Analysis Program
Software by Dr.Geol. L.Borselli - www.lorenzo-borselli.eu
SSAP/DXF generator rel. 2.0 (2020)

Data : 18/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Morgenstern - Price (1965)

DATI 10 SUP. CON MINOR Fs

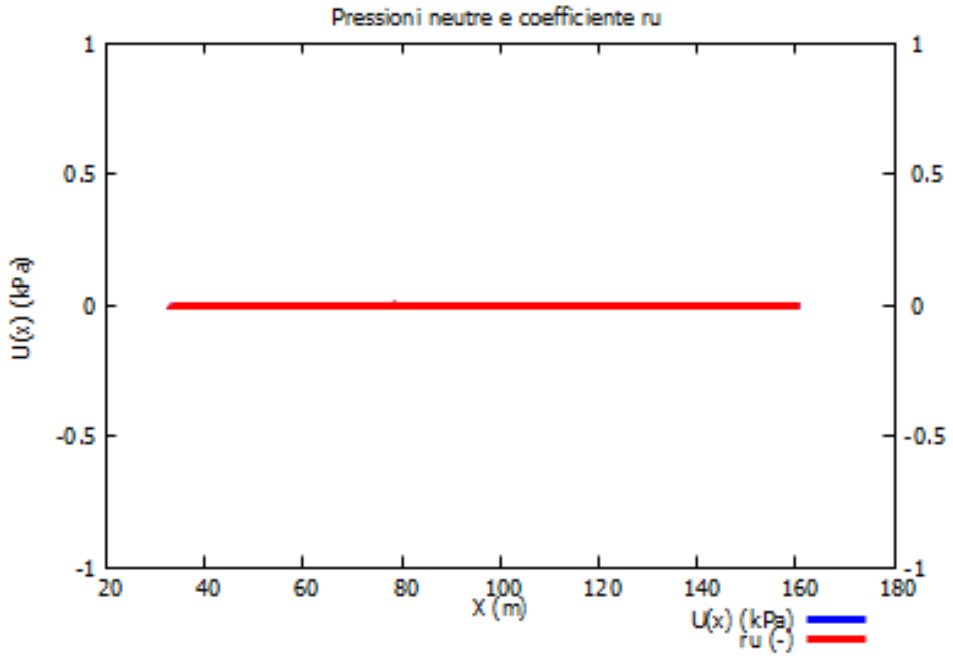
Fs minimo : 2.1890
Range Fs : 2.1890 2.2014
Differenza % Range Fs : 0.56
Coefficiente Sismico orizzontale - Kh: 0.0350
Coefficiente Sismico verticale - Kv: 0.0175

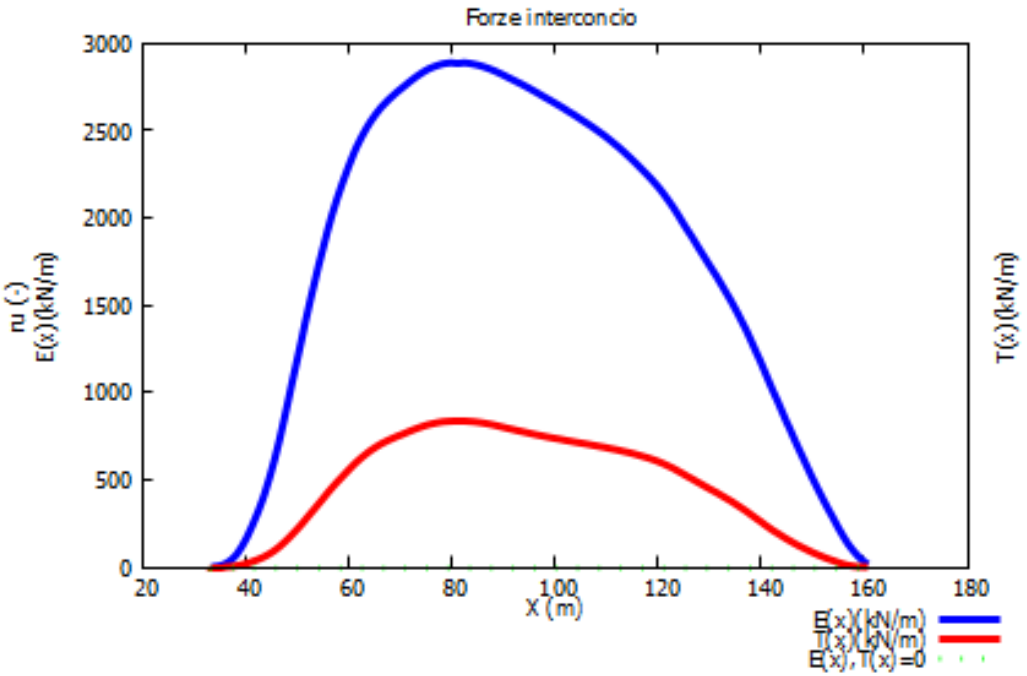
GENERAZIONE SUPERFICI RANDOM

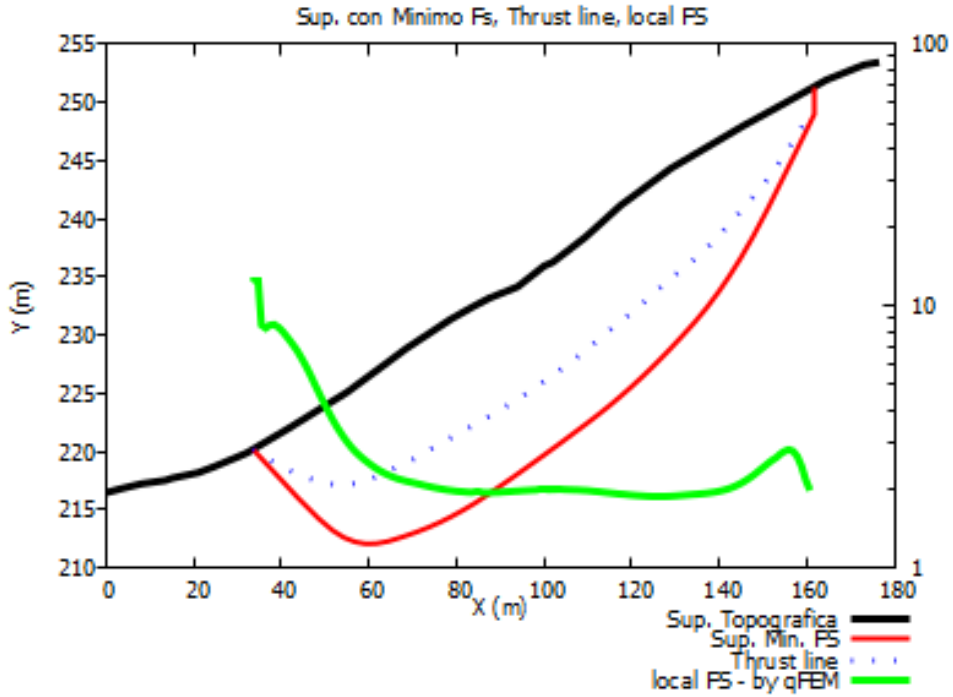
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 7.1
Range X inizio generazione : 3.5 - 162.5
Range X termine generazione : 21.2 - 173.1
Livello Y minimo considerato : 183.2

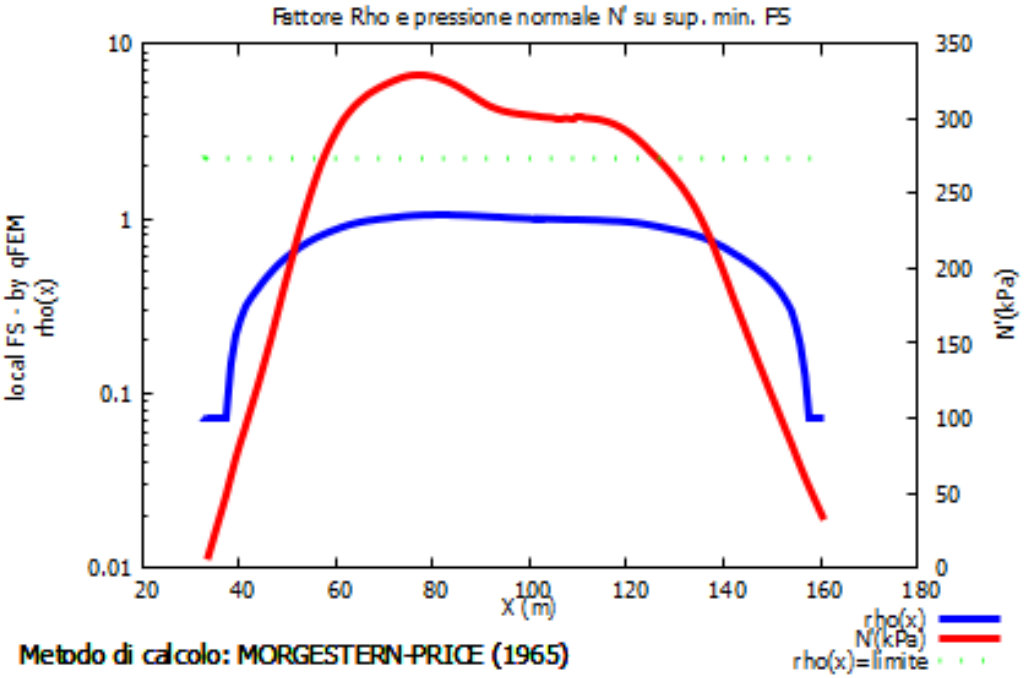
Parametri Geotecnici degli strati # ----------

N.	phi`	C`	Cu	Gamm	GammSat	sgci	GSI	mi	D
..	deg	kPa	kPa	kN/m3	kN/m3	MPa	..	..	..
1	26.00	19.50	0	20.00	22.00	0	0	0	0





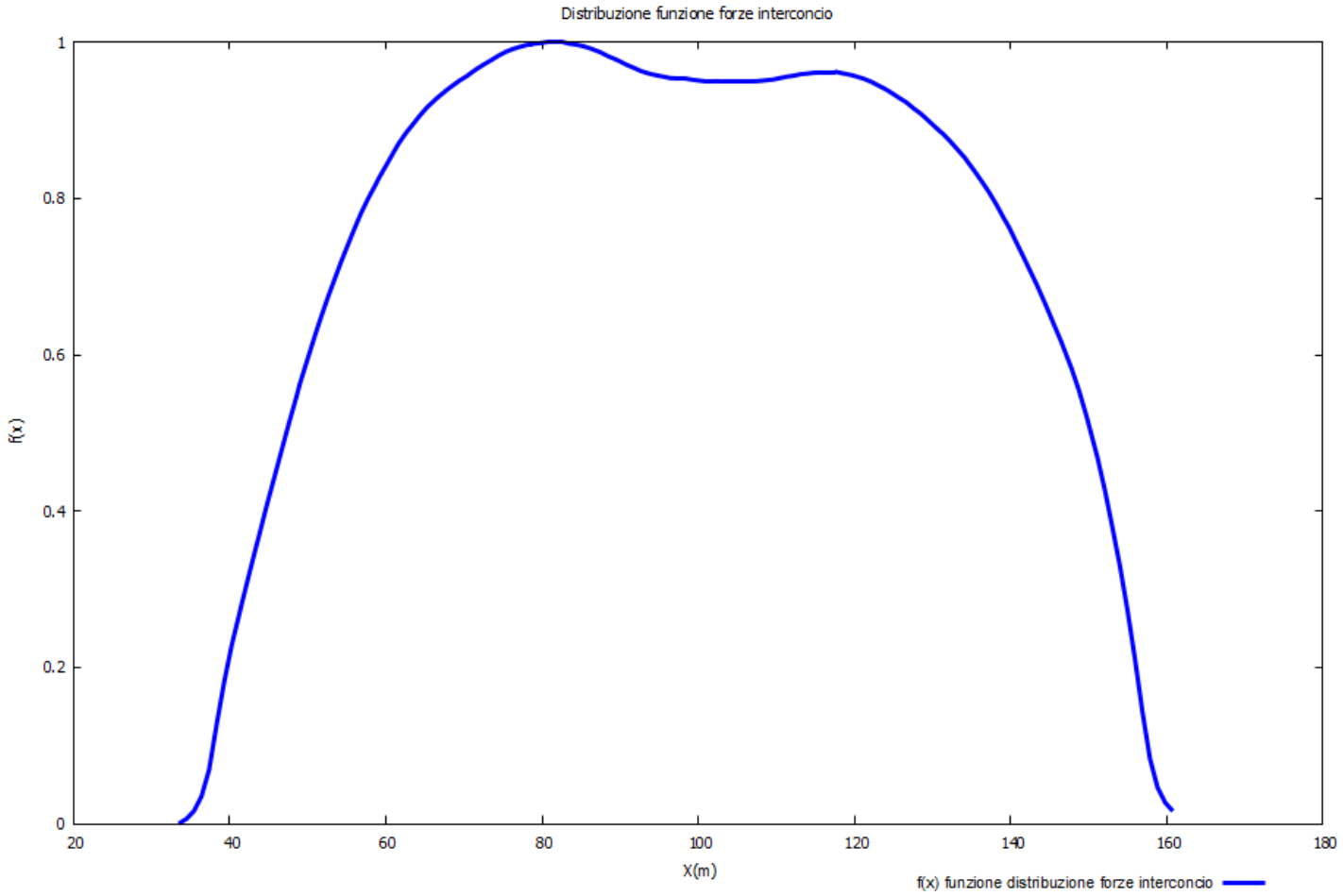




Metodo di calcolo: MORGESTERN-PRICE (1965)

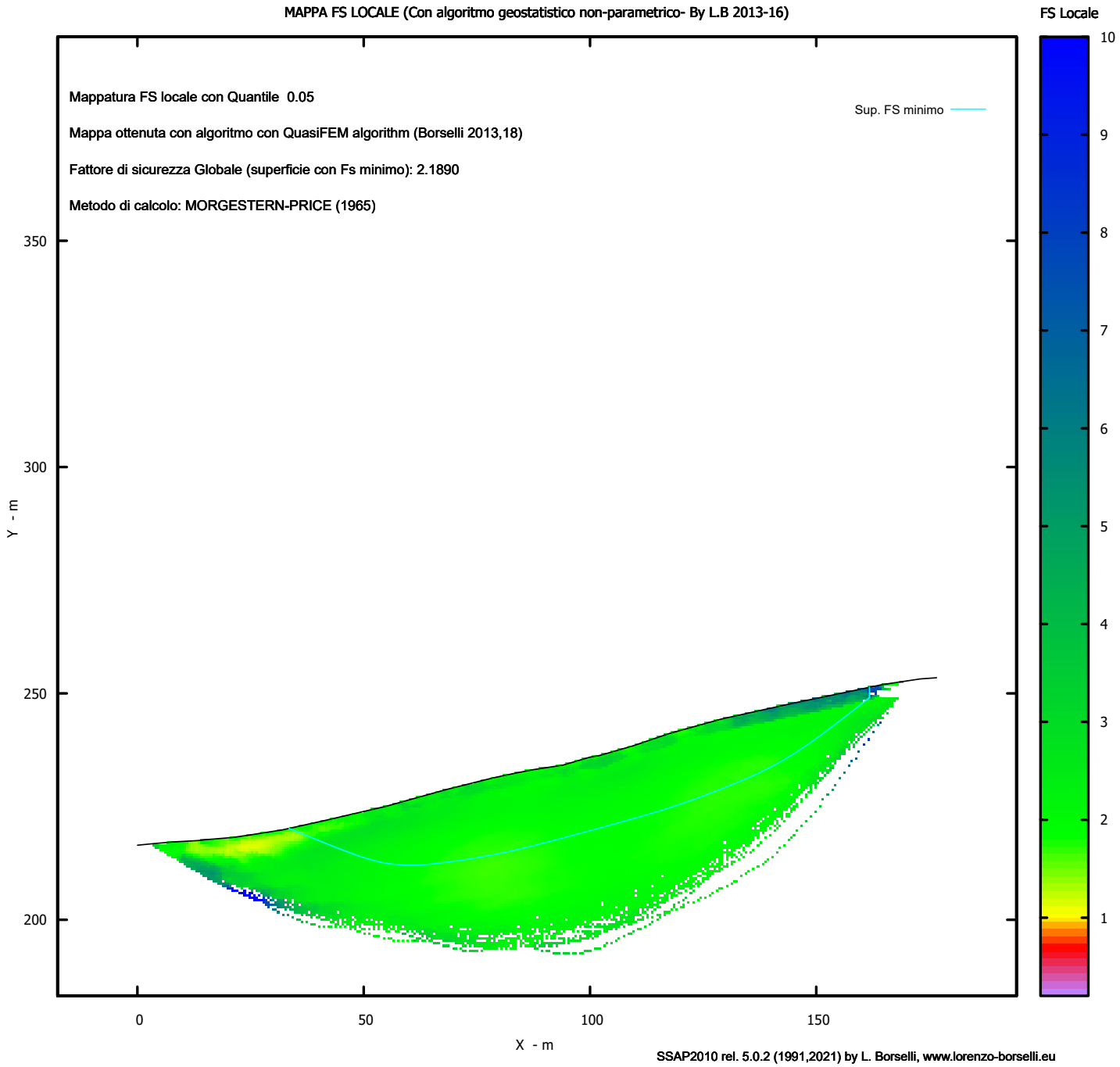
SSAP2010 (versione 5.0.2 - 2021) - DISTRIBUZIONE FORZE e PRESSIONI

18/11/21 14:56



Graphic rendering,Credits to: GNUPLOT 5.4.1 www.gnuplot.info

SSAP2010 rel. 5.0.2 (1991,2021) by L. Borselli - www.ssap.eu


MAPPA FS LOCALE (Con algoritmo geostatistico non-parametrico- By L.B 2013-16)
FS Locale
Mappatura FS locale con Quantile 0.05
Mappa ottenuta con algoritmo con QuasiFEM algorithm (Borselli 2013,18)
Fattore di sicurezza Globale (superficie con Fs minimo): 2.1890
Metodo di calcolo: MORGESTERN-PRICE (1965)
Sup. FS minimo
Y - m
X - m
350
300
250
200
0
50
100
150
10
9
8
7
6
5
4
3
2
1
Credits to: GNUPLOT 5.4.1 www.gnuplot.info
SSAP2010 rel. 5.0.2 (1991,2021) by L. Borselli, www.lorenzo-borselli.eu
https://WWW.SSAP.EU

Report elaborazioni

SSAP 5.0.2 - Slope Stability Analysis Program (1991,2021)
WWW.SSAP.EU
Build No. 11893
BY
Dr. Geol. LORENZO BORSELLI *,**
*UASLP, San Luis Potosi, Mexico
e-mail: lborselli@gmail.com
CV e WEB page personale: WWW.LORENZO-BORSELLI.EU
** Gia' Ricercatore CNR-IRPI fino a Luglio 2011

Ultima Revisione struttura tabelle del report: 21 Febbraio 2021

File report: C:\SSAP2010\CRACO SERRACARUSO CAP\VERIFICA 3\DRENATA\BERSELLI\BERSELLI.txt
Data: 18/11/2021
Localita' :
Descrizione:
Modello pendio: DRENATA.mod

---------- PARAMETRI DEL MODELLO DEL PENDIO ----------

__ PARAMETRI GEOMETRICI - Coordinate X Y (in m) __

SUP T.		SUP 2		SUP 3		SUP 4	
X	Y	X	Y	X	Y	X	Y
0.00	216.45	-	-	-	-	-	-
3.00	216.75	-	-	-	-	-	-
8.00	217.20	-	-	-	-	-	-
13.50	217.50	-	-	-	-	-	-
15.00	217.69	-	-	-	-	-	-
21.00	218.16	-	-	-	-	-	-
24.50	218.66	-	-	-	-	-	-
32.00	219.84	-	-	-	-	-	-
41.50	221.94	-	-	-	-	-	-
49.00	223.69	-	-	-	-	-	-
55.00	225.08	-	-	-	-	-	-
66.50	228.27	-	-	-	-	-	-
68.50	228.83	-	-	-	-	-	-
78.50	231.31	-	-	-	-	-	-
83.50	232.38	-	-	-	-	-	-
87.50	233.17	-	-	-	-	-	-
94.00	234.15	-	-	-	-	-	-
100.00	235.93	-	-	-	-	-	-
102.00	236.25	-	-	-	-	-	-
109.50	238.42	-	-	-	-	-	-
117.50	241.14	-	-	-	-	-	-
129.00	244.33	-	-	-	-	-	-
145.50	247.98	-	-	-	-	-	-
154.00	249.72	-	-	-	-	-	-
164.50	251.93	-	-	-	-	-	-
173.00	253.21	-	-	-	-	-	-
176.59	253.45	-	-	-	-	-	-

ASSENZA DI FALDA

------- PARAMETRI GEOMECCANICI -------

	fi`	C`	Cu	Gamm	Gamm_sat	STR_IDX	sgci	GSI	mi	D
STRATO 1	26.00	19.50	0.00	20.00	22.00	2.279	0.00	0.00	0.00	0.00

LEGENDA: fi`_____ Angolo di attrito interno efficace(in gradi)
C` _____ Coesione efficace (in Kpa)

Cu _____ Resistenza al taglio Non drenata (in Kpa)
Gamm _____ Peso di volume terreno fuori falda (in KN/m^3)
Gamm_sat __ Peso di volume terreno immerso (in KN/m^3)
STR_IDX ___ Indice di resistenza (usato in solo in 'SNIFF SEARCH) (adimensionale)
---- SOLO Per AMMASSI ROCCIOSI FRATTURATI - Parametri Criterio di Rottura di Hoek (2002)-
sigci _____ Resistenza Compressione Uniassiale Roccia Intatta (in MPa)
GSI _____ Geological Strenght Index ammasso(adimensionale)
mi _____ Indice litologico ammasso(adimensionale)
D _____ Fattore di disturbo ammasso(adimensionale)
Fattore di riduzione NTC2018: gammaPHI=1.25 e gammaC=1.25 - DISATTIVATO (solo per ROCCE)
Uso CRITERIO DI ROTTURA Hoek et al.(2002,2006) - non-lineare - Generalizzato, secondo Lei et al.(2016)

---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
MOTORE DI RICERCA: RANDOM SEARCH - Siegel (1981)
FILTRAGGIO SUPERFICI : ATTIVATO
COORDINATE X1,X2,Y OSTACOLO : 0.00 0.00 0.00
LUNGHEZZA MEDIA SEGMENTI (m)*: 7.1 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 3.53 162.46
LIVELLO MINIMO CONSIDERATO (Ymin): 183.15
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 21.19 173.06
TOTALE SUPERFICI GENERATE : 10000
*NOTA IMPORTANTE: La lunghezza media dei segmenti non viene cosiderata nel caso
di uso del motore di recerca NEW RANOM SEARCH

---------- INFORMAZIONI PARAMETRI DI CALCOLO ----------
METODO DI CALCOLO : BORSELLI (Borselli, 2016)
METODO DI ESPLORAZIONE CAMPO VALORI (lambda0,Fs0) ADOTTATO : A (rapido)
COEFFICIENTE SISMICO UTILIZZATO Kh : 0.0350
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0175
COEFFICIENTE c=Kv/Kh UTILIZZATO : 0.5000
FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00

N.B. Le forze orizzontali addizionali in testa e alla base sono poste uguali a 0
durante le tutte le verifiche globali.
I valori >0 impostati dall'utente sono utilizzati solo in caso di verifica singola

---------- RISULTATO FINALE ELABORAZIONI ----------
---
* DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *

Fattore di sicurezza (FS) 2.1853 - Min. - X Y Lambda= 0.2321
30.00 219.53
39.01 216.00
43.14 214.50
45.85 213.69
48.02 213.23
50.25 212.99
52.18 212.94
54.33 213.07
56.64 213.36
59.51 213.87
62.15 214.35
64.65 214.81
67.07 215.28
69.45 215.75
71.82 216.24
74.20 216.73
76.60 217.25
79.03 217.79
81.44 218.33
83.82 218.87
86.20 219.43
88.58 219.99

90.96 220.56
93.35 221.15
95.75 221.74
98.18 222.36
100.58 222.97
102.96 223.60
105.33 224.23
107.71 224.88
110.10 225.54
112.51 226.22
114.97 226.92
117.50 227.66
119.88 228.40
122.20 229.18
124.47 229.99
126.82 230.88
129.11 231.81
131.46 232.82
133.89 233.92
136.51 235.16
138.95 236.36
141.31 237.59
143.60 238.83
145.95 240.17
148.52 241.72
151.44 243.55
155.61 246.28
158.56 248.24
158.56 250.68

Fattore di sicurezza (FS) 2.1857 - N.2 -- X Y Lambda= 0.2290
26.45 218.97
37.99 212.63
43.20 209.94
46.55 208.47
49.17 207.60
51.91 207.06
54.23 206.84
56.86 206.87
59.78 207.15
63.56 207.73
66.95 208.27
70.09 208.82
73.11 209.37
76.09 209.96
79.02 210.58
81.98 211.23
84.98 211.93
88.07 212.68
91.13 213.43
94.16 214.18
97.18 214.93
100.18 215.67
103.21 216.43
106.26 217.20
109.36 217.99
112.52 218.80
115.49 219.61
118.41 220.48
121.27 221.40
124.23 222.41
127.13 223.47
130.14 224.64
133.30 225.94
136.79 227.44

139.80 228.87
142.66 230.39
145.36 231.99
148.26 233.88
151.30 236.11
154.87 238.96
160.11 243.41
167.67 250.06
167.67 252.41

Fattore di sicurezza (FS) 2.1928 - N.3 -- X Y Lambda= 0.2383
23.63 218.54
34.76 213.29
39.85 211.04
43.15 209.81
45.79 209.08
48.51 208.63
50.86 208.46
53.50 208.51
56.41 208.78
60.11 209.31
63.35 209.84
66.35 210.39
69.21 210.98
72.09 211.65
74.88 212.36
77.73 213.16
80.66 214.03
83.78 215.04
86.80 215.99
89.77 216.91
92.70 217.80
95.62 218.67
98.54 219.53
101.47 220.37
104.44 221.21
107.46 222.04
110.41 222.88
113.32 223.74
116.21 224.61
119.13 225.52
122.06 226.47
125.06 227.46
128.19 228.52
131.53 229.68
134.41 230.81
137.16 232.04
139.75 233.38
142.58 235.00
145.51 236.93
148.98 239.44
154.09 243.42
160.29 248.41
160.29 251.04

Fattore di sicurezza (FS) 2.1928 - N.4 -- X Y Lambda= 0.2343
25.76 218.86
39.56 213.82
45.82 211.72
49.88 210.64
53.09 210.09
56.43 209.91
59.30 210.01
62.51 210.42

66.01 211.13
70.39 212.25
74.44 213.27
78.26 214.22
81.97 215.14
85.58 216.01
89.23 216.88
92.93 217.75
96.73 218.64
100.67 219.54
104.23 220.47
107.69 221.49
111.01 222.60
114.53 223.91
117.87 225.28
121.33 226.84
124.90 228.57
128.82 230.59
132.62 232.56
136.32 234.49
139.98 236.41
143.59 238.31
147.66 240.47
152.19 242.88
158.54 246.29
163.85 249.14
163.85 251.79

Fattore di sicurezza (FS) 2.1958 - N.5 -- X Y Lambda= 0.2376
22.42 218.36
33.73 212.83
38.77 210.53
41.94 209.35
44.38 208.74
46.99 208.46
49.14 208.48
51.63 208.80
54.41 209.41
58.03 210.42
61.36 211.34
64.47 212.21
67.49 213.05
70.39 213.86
73.31 214.68
76.22 215.49
79.14 216.31
82.05 217.12
84.95 217.93
87.85 218.73
90.75 219.52
93.65 220.31
96.57 221.09
99.49 221.87
102.46 222.66
105.48 223.44
108.37 224.24
111.22 225.08
114.03 225.94
116.89 226.87
119.73 227.84
122.65 228.88
125.67 230.00
128.92 231.26
131.82 232.48
134.62 233.77

137.30 235.11
140.13 236.66
143.14 238.46
146.63 240.71
151.69 244.17
157.07 247.95
157.07 250.37

Fattore di sicurezza (FS) 2.1961 - N.6 -- X Y Lambda= 0.2375
17.94 217.92
32.10 212.09
38.53 209.63
42.70 208.33
46.01 207.62
49.44 207.27
52.39 207.25
55.69 207.53
59.31 208.11
63.88 209.08
68.03 210.00
71.91 210.89
75.66 211.79
79.35 212.71
83.01 213.67
86.72 214.67
90.50 215.73
94.43 216.86
98.17 218.00
101.83 219.17
105.44 220.37
109.12 221.66
112.75 222.99
116.46 224.41
120.29 225.93
124.36 227.61
128.10 229.25
131.72 230.94
135.23 232.70
138.88 234.64
142.81 236.90
147.32 239.64
153.81 243.77
161.61 248.87
161.61 251.32

Fattore di sicurezza (FS) 2.1969 - N.7 -- X Y Lambda= 0.2369
30.07 219.54
40.49 215.21
45.24 213.38
48.32 212.41
50.78 211.86
53.32 211.59
55.50 211.54
57.93 211.72
60.59 212.10
63.92 212.76
66.98 213.38
69.86 213.98
72.66 214.57
75.39 215.17
78.12 215.78
80.86 216.40
83.63 217.05
86.45 217.72

89.21 218.36
91.93 218.97
94.64 219.55
97.36 220.11
100.10 220.65
102.88 221.18
105.76 221.70
108.79 222.23
111.51 222.79
114.13 223.42
116.64 224.12
119.30 224.98
121.84 225.89
124.51 226.96
127.33 228.19
130.53 229.68
133.36 231.09
136.05 232.54
138.61 234.04
141.29 235.72
144.15 237.67
147.45 240.07
152.23 243.75
157.88 248.19
157.88 250.54

Fattore di sicurezza (FS) 2.1987 - N.8 -- X Y Lambda= 0.2351
18.78 217.99
32.80 214.06
39.34 212.40
43.68 211.53
47.25 211.07
50.82 210.92
54.01 210.99
57.48 211.31
61.19 211.86
65.64 212.71
69.75 213.54
73.64 214.36
77.42 215.19
81.17 216.06
84.89 216.96
88.67 217.91
92.52 218.92
96.54 220.01
100.33 221.10
104.05 222.23
107.69 223.41
111.41 224.68
115.07 226.00
118.80 227.42
122.62 228.94
126.69 230.62
130.53 232.27
134.27 233.94
137.94 235.65
141.68 237.45
145.78 239.53
150.42 241.97
157.03 245.56
163.65 249.22
163.65 251.75

Fattore di sicurezza (FS) 2.2008 - N.9 -- X Y Lambda= 0.2324

33.36 220.14
45.61 217.15
51.39 215.88
55.26 215.22
58.48 214.86
61.66 214.75
64.54 214.82
67.64 215.08
70.93 215.52
74.81 216.19
78.39 216.85
81.81 217.51
85.13 218.19
88.44 218.90
91.72 219.65
95.05 220.44
98.46 221.29
102.03 222.21
105.38 223.13
108.65 224.10
111.86 225.11
115.14 226.21
118.36 227.36
121.66 228.60
125.06 229.94
128.71 231.45
132.09 232.92
135.37 234.42
138.57 235.97
141.86 237.64
145.43 239.57
149.50 241.87
155.33 245.31
160.23 248.26
160.23 251.03

Fattore di sicurezza (FS) 2.2010 - N.10 -- X Y Lambda= 0.2346
25.52 218.82
32.77 215.32
36.13 213.79
38.35 212.92
40.15 212.35
41.97 211.97
43.57 211.75
45.32 211.65
47.19 211.67
49.49 211.80
51.62 211.92
53.65 212.02
55.62 212.11
57.55 212.20
59.49 212.27
61.44 212.34
63.41 212.40
65.41 212.46
67.35 212.53
69.27 212.62
71.16 212.74
73.08 212.87
74.98 213.03
76.92 213.21
78.89 213.41
80.95 213.64
82.90 213.89
84.82 214.16

86.70	214.46
88.61	214.79
90.49	215.14
92.39	215.52
94.33	215.95
96.36	216.41
98.34	216.88
100.29	217.35
102.22	217.82
104.15	218.30
106.09	218.80
108.05	219.31
110.05	219.84
112.11	220.39
114.03	220.95
115.92	221.54
117.77	222.16
119.67	222.85
121.53	223.56
123.43	224.34
125.41	225.19
127.53	226.16
129.51	227.09
131.43	228.04
133.30	229.01
135.20	230.05
137.07	231.12
138.98	232.25
140.95	233.47
143.06	234.81
145.03	236.11
146.95	237.43
148.83	238.76
150.74	240.17
152.84	241.78
155.21	243.67
158.60	246.45
161.68	249.02
161.68	251.34

---------- ANALISI DEFICIT DI RESISTENZA ----------
DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *
Analisi Deficit in riferimento a FS(progetto) = 1.100

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	2.185	16281.4	7450.4	8085.9	Surplus
2	2.186	26114.4	11947.7	12972.0	Surplus
3	2.193	21429.2	9772.3	10679.6	Surplus
4	2.193	20065.6	9150.5	10000.1	Surplus
5	2.196	19005.7	8655.4	9484.7	Surplus
6	2.196	22557.3	10271.5	11258.6	Surplus
7	2.197	18649.7	8489.1	9311.7	Surplus
8	2.199	19248.9	8754.7	9618.6	Surplus
9	2.201	16205.1	7363.3	8105.5	Surplus
10	2.201	21735.4	9875.3	10872.6	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 8085.9

Note: FTR --> Forza totale Resistente lungo la superficie
di scivolamento
FTA --> Forza totale Agente lungo la superficie
di scivolamento

IMPORTANTE! : Il Deficit o il Surplus di resistenza viene espresso in kN
per metro di LARGHEZZA rispetto al fronte della scarpata

TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (°)	W (kN/m)	ru (-)	U (kPa)	phi' (°)	(c',Cu) (kPa)
30.005	0.983	-21.39	5.40	0.00	0.00	26.00	19.50
30.988	0.983	-21.39	16.20	0.00	0.00	26.00	19.50
31.971	0.029	-21.39	0.63	0.00	0.00	26.00	19.50
32.000	0.983	-21.39	27.95	0.00	0.00	26.00	19.50
32.983	0.983	-21.39	40.00	0.00	0.00	26.00	19.50
33.967	0.983	-21.39	52.06	0.00	0.00	26.00	19.50
34.950	0.983	-21.39	64.12	0.00	0.00	26.00	19.50
35.933	0.983	-21.39	76.17	0.00	0.00	26.00	19.50
36.917	0.983	-21.39	88.23	0.00	0.00	26.00	19.50
37.900	0.983	-21.39	100.28	0.00	0.00	26.00	19.50
38.883	0.124	-21.39	13.51	0.00	0.00	26.00	19.50
39.007	0.983	-19.96	113.58	0.00	0.00	26.00	19.50
39.990	0.983	-19.96	125.08	0.00	0.00	26.00	19.50
40.974	0.526	-19.96	71.66	0.00	0.00	26.00	19.50
41.500	0.983	-19.96	142.85	0.00	0.00	26.00	19.50
42.483	0.658	-19.96	102.22	0.00	0.00	26.00	19.50
43.142	0.983	-16.58	161.80	0.00	0.00	26.00	19.50
44.125	0.983	-16.58	172.25	0.00	0.00	26.00	19.50
45.108	0.739	-16.58	136.25	0.00	0.00	26.00	19.50
45.847	0.983	-12.00	189.71	0.00	0.00	26.00	19.50
46.830	0.983	-12.00	198.48	0.00	0.00	26.00	19.50
47.814	0.211	-12.00	43.71	0.00	0.00	26.00	19.50
48.024	0.976	-6.14	206.44	0.00	0.00	26.00	19.50
49.000	0.983	-6.14	214.74	0.00	0.00	26.00	19.50
49.983	0.265	-6.14	58.93	0.00	0.00	26.00	19.50
50.248	0.983	-1.47	222.41	0.00	0.00	26.00	19.50
51.231	0.954	-1.47	220.52	0.00	0.00	26.00	19.50
52.185	0.983	3.33	231.56	0.00	0.00	26.00	19.50
53.168	0.983	3.33	234.97	0.00	0.00	26.00	19.50
54.151	0.174	3.33	41.86	0.00	0.00	26.00	19.50
54.325	0.675	7.23	163.35	0.00	0.00	26.00	19.50
55.000	0.983	7.23	240.18	0.00	0.00	26.00	19.50
55.983	0.659	7.23	162.61	0.00	0.00	26.00	19.50
56.642	0.983	10.02	244.63	0.00	0.00	26.00	19.50
57.626	0.983	10.02	246.62	0.00	0.00	26.00	19.50
58.609	0.898	10.02	226.93	0.00	0.00	26.00	19.50
59.507	0.983	10.29	250.36	0.00	0.00	26.00	19.50
60.490	0.983	10.29	252.25	0.00	0.00	26.00	19.50
61.473	0.677	10.29	174.88	0.00	0.00	26.00	19.50
62.151	0.983	10.59	255.38	0.00	0.00	26.00	19.50
63.134	0.983	10.59	257.16	0.00	0.00	26.00	19.50
64.117	0.530	10.59	139.34	0.00	0.00	26.00	19.50
64.647	0.983	10.91	259.85	0.00	0.00	26.00	19.50
65.631	0.869	10.91	231.09	0.00	0.00	26.00	19.50
66.500	0.575	10.91	153.53	0.00	0.00	26.00	19.50
67.075	0.983	11.24	263.96	0.00	0.00	26.00	19.50
68.058	0.442	11.24	119.15	0.00	0.00	26.00	19.50
68.500	0.951	11.24	257.10	0.00	0.00	26.00	19.50
69.451	0.983	11.54	266.85	0.00	0.00	26.00	19.50
70.434	0.983	11.54	267.71	0.00	0.00	26.00	19.50
71.417	0.402	11.54	109.82	0.00	0.00	26.00	19.50
71.820	0.983	11.85	268.87	0.00	0.00	26.00	19.50
72.803	0.983	11.85	269.62	0.00	0.00	26.00	19.50
73.786	0.412	11.85	113.19	0.00	0.00	26.00	19.50
74.198	0.983	12.15	270.63	0.00	0.00	26.00	19.50
75.182	0.983	12.15	271.27	0.00	0.00	26.00	19.50
76.165	0.432	12.15	119.29	0.00	0.00	26.00	19.50

76.597	0.983	12.45	272.15	0.00	0.00	26.00	19.50
77.580	0.920	12.45	255.14	0.00	0.00	26.00	19.50
78.500	0.529	12.45	146.68	0.00	0.00	26.00	19.50
79.029	0.983	12.66	272.74	0.00	0.00	26.00	19.50
80.012	0.983	12.66	272.54	0.00	0.00	26.00	19.50
80.995	0.440	12.66	121.88	0.00	0.00	26.00	19.50
81.435	0.983	12.87	272.20	0.00	0.00	26.00	19.50
82.418	0.983	12.87	271.91	0.00	0.00	26.00	19.50
83.402	0.098	12.87	27.15	0.00	0.00	26.00	19.50
83.500	0.322	12.87	89.01	0.00	0.00	26.00	19.50
83.822	0.983	13.09	271.19	0.00	0.00	26.00	19.50
84.806	0.983	13.09	270.50	0.00	0.00	26.00	19.50
85.789	0.414	13.09	113.63	0.00	0.00	26.00	19.50
86.203	0.983	13.31	269.49	0.00	0.00	26.00	19.50
87.186	0.314	13.31	85.91	0.00	0.00	26.00	19.50
87.500	0.983	13.31	268.01	0.00	0.00	26.00	19.50
88.483	0.098	13.31	26.57	0.00	0.00	26.00	19.50
88.581	0.983	13.53	266.12	0.00	0.00	26.00	19.50
89.564	0.983	13.53	264.35	0.00	0.00	26.00	19.50
90.548	0.413	13.53	110.54	0.00	0.00	26.00	19.50
90.961	0.983	13.74	261.80	0.00	0.00	26.00	19.50
91.944	0.983	13.74	259.96	0.00	0.00	26.00	19.50
92.928	0.419	13.74	110.22	0.00	0.00	26.00	19.50
93.347	0.653	13.95	171.18	0.00	0.00	26.00	19.50
94.000	0.983	13.95	257.45	0.00	0.00	26.00	19.50
94.983	0.767	13.95	201.49	0.00	0.00	26.00	19.50
95.750	0.983	14.16	259.09	0.00	0.00	26.00	19.50
96.734	0.983	14.16	259.97	0.00	0.00	26.00	19.50
97.717	0.460	14.16	121.98	0.00	0.00	26.00	19.50
98.177	0.983	14.42	261.20	0.00	0.00	26.00	19.50
99.161	0.839	14.42	223.59	0.00	0.00	26.00	19.50
100.000	0.577	14.42	153.50	0.00	0.00	26.00	19.50
100.577	0.983	14.68	260.13	0.00	0.00	26.00	19.50
101.560	0.440	14.68	115.72	0.00	0.00	26.00	19.50
102.000	0.958	14.68	251.90	0.00	0.00	26.00	19.50
102.958	0.983	14.94	258.97	0.00	0.00	26.00	19.50
103.942	0.983	14.94	259.42	0.00	0.00	26.00	19.50
104.925	0.407	14.94	107.64	0.00	0.00	26.00	19.50
105.332	0.983	15.20	259.99	0.00	0.00	26.00	19.50
106.316	0.983	15.20	260.34	0.00	0.00	26.00	19.50
107.299	0.411	15.20	108.79	0.00	0.00	26.00	19.50
107.709	0.983	15.47	260.78	0.00	0.00	26.00	19.50
108.693	0.807	15.47	214.26	0.00	0.00	26.00	19.50
109.500	0.598	15.47	159.08	0.00	0.00	26.00	19.50
110.098	0.983	15.73	262.44	0.00	0.00	26.00	19.50
111.082	0.983	15.73	263.59	0.00	0.00	26.00	19.50
112.065	0.444	15.73	119.43	0.00	0.00	26.00	19.50
112.509	0.983	15.99	265.21	0.00	0.00	26.00	19.50
113.492	0.983	15.99	266.26	0.00	0.00	26.00	19.50
114.476	0.493	15.99	133.85	0.00	0.00	26.00	19.50
114.968	0.983	16.23	267.80	0.00	0.00	26.00	19.50
115.952	0.983	16.23	268.76	0.00	0.00	26.00	19.50
116.935	0.565	16.23	154.86	0.00	0.00	26.00	19.50
117.500	0.001	16.23	0.22	0.00	0.00	26.00	19.50
117.501	0.983	17.31	269.46	0.00	0.00	26.00	19.50
118.484	0.983	17.31	268.78	0.00	0.00	26.00	19.50
119.467	0.408	17.31	111.39	0.00	0.00	26.00	19.50
119.876	0.983	18.48	267.60	0.00	0.00	26.00	19.50
120.859	0.983	18.48	266.49	0.00	0.00	26.00	19.50
121.842	0.359	18.48	96.98	0.00	0.00	26.00	19.50
122.201	0.983	19.70	264.72	0.00	0.00	26.00	19.50
123.184	0.983	19.70	263.13	0.00	0.00	26.00	19.50
124.168	0.307	19.70	81.80	0.00	0.00	26.00	19.50
124.475	0.983	20.89	260.82	0.00	0.00	26.00	19.50
125.458	0.983	20.89	258.76	0.00	0.00	26.00	19.50
126.441	0.380	20.89	99.35	0.00	0.00	26.00	19.50

126.821	0.983	22.08	255.68	0.00	0.00	26.00	19.50
127.804	0.983	22.08	253.16	0.00	0.00	26.00	19.50
128.788	0.212	22.08	54.37	0.00	0.00	26.00	19.50
129.000	0.109	22.08	27.96	0.00	0.00	26.00	19.50
129.109	0.983	23.25	248.89	0.00	0.00	26.00	19.50
130.093	0.983	23.25	244.79	0.00	0.00	26.00	19.50
131.076	0.386	23.25	94.96	0.00	0.00	26.00	19.50
131.462	0.983	24.33	238.86	0.00	0.00	26.00	19.50
132.445	0.983	24.33	234.31	0.00	0.00	26.00	19.50
133.429	0.464	24.33	109.01	0.00	0.00	26.00	19.50
133.893	0.983	25.29	227.42	0.00	0.00	26.00	19.50
134.876	0.983	25.29	222.48	0.00	0.00	26.00	19.50
135.859	0.655	25.29	145.54	0.00	0.00	26.00	19.50
136.515	0.983	26.29	214.03	0.00	0.00	26.00	19.50
137.498	0.983	26.29	208.66	0.00	0.00	26.00	19.50
138.481	0.466	26.29	96.97	0.00	0.00	26.00	19.50
138.947	0.983	27.39	200.51	0.00	0.00	26.00	19.50
139.930	0.983	27.39	194.67	0.00	0.00	26.00	19.50
140.914	0.392	27.39	75.90	0.00	0.00	26.00	19.50
141.305	0.983	28.53	186.25	0.00	0.00	26.00	19.50
142.289	0.983	28.53	179.91	0.00	0.00	26.00	19.50
143.272	0.329	28.53	58.83	0.00	0.00	26.00	19.50
143.601	0.983	29.65	171.19	0.00	0.00	26.00	19.50
144.585	0.915	29.65	153.22	0.00	0.00	26.00	19.50
145.500	0.454	29.65	73.70	0.00	0.00	26.00	19.50
145.954	0.983	31.06	154.17	0.00	0.00	26.00	19.50
146.937	0.983	31.06	146.35	0.00	0.00	26.00	19.50
147.920	0.599	31.06	85.27	0.00	0.00	26.00	19.50
148.519	0.983	32.17	133.50	0.00	0.00	26.00	19.50
149.502	0.983	32.17	125.15	0.00	0.00	26.00	19.50
150.486	0.950	32.17	112.97	0.00	0.00	26.00	19.50
151.435	0.983	33.15	108.50	0.00	0.00	26.00	19.50
152.419	0.983	33.15	99.68	0.00	0.00	26.00	19.50
153.402	0.598	33.15	56.30	0.00	0.00	26.00	19.50
154.000	0.983	33.15	85.54	0.00	0.00	26.00	19.50
154.983	0.623	33.15	49.68	0.00	0.00	26.00	19.50
155.606	0.983	33.66	71.19	0.00	0.00	26.00	19.50
156.590	0.983	33.66	62.22	0.00	0.00	26.00	19.50
157.573	0.983	33.66	53.26	0.00	0.00	26.00	19.50

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
alpha(°) : Angolo pendenza base concio
W(kN/m) : Forza peso concio
ru(-) : Coefficiente locale pressione interstiziale
U(kPa) : Pressione totale dei pori base concio
phi'(°) : Angolo di attrito efficace base concio
c'/Cu (kPa) : Coesione efficace o Resistenza al taglio in condizioni non drenate

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TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	ht (m)	yt (m)	yt' (--)	E(x) (kN/m)	T(x) (kN/m)	E' (kN)	rho(x) (--)	FS_qFEM (--)	FS_srmFEM (--)		
30.005	0.000	219.526	-0.252	0.0000000000E+000	0.0000000000E+000	1.0536090550E+000	0.073	19.320	13.661		
30.988	0.136	219.276	-0.252	2.5883256134E+000	4.2249672475E-003	4.2109154926E+000	0.073	19.320	13.661		
31.971	0.274	219.030	-0.248	8.2812571787E+000	7.2958633378E-002	7.0257386355E+000	0.073	11.499	8.791		
32.000	0.281	219.026	-0.184	8.4830907024E+000	7.8382337718E-002	7.1801706949E+000	0.073	11.454	8.776		
32.983	0.484	218.843	-0.193	1.9552212402E+001	5.3614506707E-001	1.4782770521E+001	0.073	10.647	8.792		
33.967	0.671	218.645	-0.212	3.7555135656E+001	2.3105380720E+000	2.7005935890E+001	0.080	10.965	8.426		
34.950	0.838	218.427	-0.216	7.2662539800E+001	6.8702664165E+000	4.3910925018E+001	0.163	10.899	7.192		
35.933	1.016	218.220	-0.197	1.2391109879E+002	1.3828552227E+001	5.8120389581E+001	0.235	10.240	6.175		
36.917	1.220	218.039	-0.172	1.8696307475E+002	2.2926803999E+001	6.6298296592E+001	0.292	9.301	5.489		

37.900	1.449	217.883	-0.161	2.5429444311E+002	3.3258308728E+001	6.8438686298E+001	0.337	8.382	5.038
38.883	1.675	217.723	-0.160	3.2155574544E+002	4.3852231478E+001	6.8209704887E+001	0.368	7.691	4.720
39.007	1.705	217.705	-0.142	3.3001262661E+002	4.5214488940E+001	6.9161690160E+001	0.371	7.610	4.685
39.990	1.923	217.566	-0.132	4.0563150138E+002	5.7972938908E+001	8.2091659016E+001	0.403	6.929	4.419
40.974	2.160	217.446	-0.118	4.9145546291E+002	7.3724540261E+001	9.0109143676E+001	0.439	6.232	4.171
41.500	2.292	217.387	-0.104	5.3966698482E+002	8.2961808934E+001	9.2967971270E+001	0.457	5.889	4.051
42.483	2.551	217.289	-0.095	6.3355520225E+002	1.0177234774E+002	1.0185838241E+002	0.490	5.302	3.849
43.142	2.732	217.231	-0.080	7.0343700581E+002	1.1673169267E+002	1.0630357054E+002	0.515	4.919	3.718
44.125	2.951	217.157	-0.066	8.0822356209E+002	1.4008169420E+002	1.0658946162E+002	0.550	4.447	3.547
45.108	3.187	217.100	-0.051	9.1305763243E+002	1.6467313776E+002	1.0591194523E+002	0.582	4.059	3.397
45.847	3.376	217.069	-0.031	9.9089046622E+002	1.8379494213E+002	1.0438568878E+002	0.605	3.811	3.296
46.830	3.563	217.046	-0.007	1.0922256308E+003	2.1008471286E+002	9.9270890248E+001	0.636	3.532	3.173
47.814	3.781	217.056	0.012	1.1861182674E+003	2.3652891765E+002	8.7507174814E+001	0.666	3.296	3.059
48.024	3.830	217.060	0.034	1.2042117149E+003	2.4182450200E+002	8.5830534567E+001	0.672	3.252	3.038
49.000	3.970	217.096	0.047	1.2880997774E+003	2.6720605521E+002	8.0697613320E+001	0.700	3.068	2.941
49.983	4.134	217.153	0.062	1.3622040482E+003	2.9122067973E+002	7.3363439998E+001	0.726	2.917	2.854
50.248	4.183	217.173	0.083	1.3814738898E+003	2.9772539633E+002	7.0597205424E+001	0.733	2.880	2.832
51.231	4.291	217.257	0.094	1.4427498862E+003	3.1947114202E+002	5.9290625826E+001	0.756	2.762	2.758
52.185	4.415	217.356	0.114	1.4964899791E+003	3.3981274448E+002	5.3185093289E+001	0.778	2.662	2.691
53.168	4.479	217.477	0.130	1.5455715171E+003	3.5972225118E+002	4.5890540954E+001	0.801	2.572	2.627
54.151	4.556	217.612	0.139	1.5867390882E+003	3.7777434753E+002	3.9629682288E+001	0.822	2.496	2.570
54.325	4.572	217.637	0.161	1.5935532549E+003	3.8089064258E+002	3.8528971418E+001	0.825	2.483	2.560
55.000	4.597	217.749	0.173	1.6177062626E+003	3.9261370245E+002	3.4005720063E+001	0.840	2.436	2.523
55.983	4.648	217.924	0.182	1.6485927691E+003	4.0864632659E+002	2.8036702130E+001	0.859	2.375	2.472
56.642	4.688	218.047	0.204	1.6655780312E+003	4.1823996608E+002	2.4772822791E+001	0.871	2.339	2.441
57.626	4.725	218.258	0.216	1.6884660917E+003	4.3220991087E+002	2.0636058987E+001	0.889	2.289	2.395
58.609	4.765	218.472	0.225	1.7061612516E+003	4.4403504912E+002	1.6871248261E+001	0.904	2.248	2.355
59.507	4.816	218.682	0.240	1.7203884113E+003	4.5401954534E+002	1.5119196153E+001	0.917	2.214	2.321
60.490	4.879	218.923	0.255	1.7344741219E+003	4.6411661718E+002	1.3865559615E+001	0.930	2.180	2.285
61.473	4.960	219.183	0.263	1.7476566538E+003	4.7351797946E+002	1.2637193500E+001	0.941	2.150	2.251
62.151	5.014	219.359	0.245	1.7558586035E+003	4.7926421434E+002	1.1081953797E+001	0.948	2.132	2.231
63.134	5.060	219.589	0.231	1.7652920854E+003	4.8560884334E+002	9.1341370917E+000	0.955	2.113	2.207
64.117	5.101	219.814	0.230	1.7738219510E+003	4.9110428038E+002	8.3115093791E+000	0.961	2.097	2.186
64.647	5.126	219.938	0.228	1.7781230929E+003	4.9370922365E+002	7.8835281766E+000	0.964	2.090	2.176
65.631	5.158	220.159	0.223	1.7854513011E+003	4.9798581855E+002	7.1280339682E+000	0.967	2.078	2.160
66.500	5.182	220.351	0.226	1.7913978464E+003	5.0131174641E+002	6.7426720987E+000	0.970	2.070	2.147
67.075	5.206	220.486	0.228	1.7952360226E+003	5.0338284427E+002	6.4313323533E+000	0.972	2.065	2.139
68.058	5.232	220.707	0.221	1.8011457803E+003	5.0649125507E+002	5.5748301923E+000	0.974	2.057	2.127
68.500	5.238	220.801	0.230	1.8035228916E+003	5.0772061258E+002	5.3985308464E+000	0.975	2.055	2.122
69.451	5.275	221.027	0.233	1.8086942124E+003	5.1035577289E+002	5.0706865950E+000	0.977	2.049	2.112
70.434	5.300	221.253	0.230	1.8133045623E+003	5.1266069910E+002	4.4379741182E+000	0.979	2.044	2.103
71.417	5.327	221.480	0.237	1.8174220069E+003	5.1466607451E+002	4.0897915216E+000	0.980	2.040	2.094
71.820	5.345	221.581	0.234	1.8190519670E+003	5.1543381031E+002	3.8075093287E+000	0.980	2.039	2.091
72.803	5.363	221.805	0.228	1.8222136898E+003	5.1685934128E+002	2.9715058576E+000	0.981	2.036	2.085
73.786	5.381	222.029	0.234	1.8248957803E+003	5.1796449470E+002	2.5390525933E+000	0.982	2.034	2.080
74.198	5.397	222.132	0.234	1.8259093214E+003	5.1831738612E+002	2.2652339507E+000	0.982	2.033	2.078
75.182	5.409	222.355	0.232	1.8276795588E+003	5.1878722292E+002	1.5607905773E+000	0.981	2.032	2.075
76.165	5.429	222.587	0.234	1.8289787984E+003	5.1884525229E+002	8.4001508181E-001	0.980	2.032	2.073
76.597	5.435	222.686	0.231	1.8292502083E+003	5.1860715554E+002	5.4793345305E-001	0.979	2.032	2.073
77.580	5.445	222.914	0.232	1.8296080239E+003	5.1786601617E+002	1.5868963998E-001	0.977	2.033	2.073
78.500	5.456	223.127	0.227	1.8295773694E+003	5.1687288949E+002	-2.9540585835E-001	0.975	2.035	2.075
79.029	5.454	223.242	0.220	1.8293416557E+003	5.1606897623E+002	-5.7466079018E-001	0.974	2.036	2.077
80.012	5.450	223.459	0.220	1.8285411570E+003	5.1434269267E+002	-1.0348724517E+000	0.971	2.039	2.081
80.995	5.446	223.675	0.220	1.8273064581E+003	5.1224599754E+002	-1.5656169853E+000	0.968	2.042	2.087
81.435	5.444	223.772	0.222	1.8265566003E+003	5.1112567666E+002	-1.7462102601E+000	0.966	2.043	2.090
82.418	5.438	223.991	0.223	1.8247474510E+003	5.0866006860E+002	-1.9627182464E+000	0.962	2.046	2.097
83.402	5.433	224.210	0.223	1.8226966856E+003	5.0612962880E+002	-2.4146523084E+000	0.959	2.050	2.105
83.500	5.432	224.232	0.218	1.8224562409E+003	5.0585808526E+002	-2.4591584784E+000	0.958	2.050	2.105
83.822	5.428	224.302	0.212	1.8216515810E+003	5.0495778125E+002	-2.5186544074E+000	0.957	2.051	2.108
84.806	5.407	224.509	0.202	1.8191108874E+003	5.0234131103E+002	-2.7415931469E+000	0.954	2.054	2.117
85.789	5.367	224.698	0.195	1.8162599178E+003	4.9973708064E+002	-3.2150311339E+000	0.950	2.057	2.125
86.203	5.355	224.782	0.195	1.8148745592E+003	4.9861932087E+002	-3.3848176270E+000	0.949	2.058	2.129
87.186	5.311	224.970	0.192	1.8114599125E+003	4.9623062708E+002	-3.6576013292E+000	0.946	2.060	2.137
87.500	5.297	225.031	0.195	1.8102926496E+003	4.9550772114E+002	-3.7770024845E+000	0.946	2.061	2.139
88.483	5.257	225.224	0.196	1.8063929949E+003	4.9341877444E+002	-4.2187287158E+000	0.945	2.063	2.147
88.581	5.254	225.243	0.195	1.8059777750E+003	4.9321908429E+002	-4.2496694346E+000	0.945	2.063	2.148

89.564	5.208	225.435	0.200	1.8017419253E+003	4.9154863129E+002	-4.5470549340E+000	0.945	2.064	2.154
90.548	5.174	225.637	0.213	1.7970354604E+003	4.9013752516E+002	-5.3525046812E+000	0.945	2.064	2.160
90.961	5.170	225.733	0.217	1.7947257676E+003	4.8960766940E+002	-5.5100187596E+000	0.946	2.064	2.162
91.944	5.137	225.940	0.215	1.7894957916E+003	4.8883255035E+002	-5.5192761497E+000	0.948	2.064	2.165
92.928	5.111	226.155	0.226	1.7838714664E+003	4.8832652027E+002	-6.2719021342E+000	0.951	2.062	2.167
93.347	5.111	226.257	0.238	1.7811446420E+003	4.8812651314E+002	-6.4559260138E+000	0.952	2.061	2.167
94.000	5.102	226.410	0.249	1.7769784669E+003	4.8789782779E+002	-6.7099532473E+000	0.954	2.060	2.167
94.983	5.112	226.664	0.256	1.7698863361E+003	4.8750972088E+002	-7.2593795959E+000	0.956	2.057	2.165
95.750	5.116	226.859	0.253	1.7642897633E+003	4.8716384361E+002	-7.3626619272E+000	0.957	2.055	2.163
96.734	5.116	227.107	0.251	1.7569658881E+003	4.8656109979E+002	-7.5366593736E+000	0.958	2.051	2.160
97.717	5.113	227.352	0.257	1.7494680423E+003	4.8570282370E+002	-8.3271456441E+000	0.959	2.048	2.156
98.177	5.123	227.478	0.260	1.7454841308E+003	4.8512082255E+002	-8.5451253742E+000	0.959	2.046	2.154
99.161	5.120	227.728	0.254	1.7373140229E+003	4.8368758124E+002	-8.4691598616E+000	0.959	2.043	2.149
100.000	5.117	227.941	0.264	1.7300898957E+003	4.8224252743E+002	-9.3313812203E+000	0.959	2.040	2.144
100.577	5.130	228.102	0.266	1.7244201974E+003	4.8100721348E+002	-9.6794690348E+000	0.959	2.038	2.141
101.560	5.125	228.355	0.255	1.7151542469E+003	4.7881457241E+002	-9.4127428901E+000	0.961	2.034	2.134
102.000	5.119	228.465	0.261	1.7110156189E+003	4.7778244991E+002	-9.7059117124E+000	0.961	2.033	2.131
102.958	5.125	228.721	0.266	1.7010932511E+003	4.7527481146E+002	-1.0452064499E+001	0.960	2.029	2.124
103.942	5.122	228.981	0.267	1.6907174569E+003	4.7262611572E+002	-1.0813955166E+001	0.959	2.025	2.115
104.925	5.125	229.246	0.277	1.6798263452E+003	4.6987011727E+002	-1.1958337600E+001	0.958	2.021	2.105
105.332	5.136	229.366	0.281	1.6748043656E+003	4.6862024761E+002	-1.2167527325E+001	0.957	2.019	2.100
106.316	5.141	229.638	0.277	1.6632111962E+003	4.6578865148E+002	-1.1977373609E+001	0.956	2.014	2.088
107.299	5.148	229.912	0.287	1.6512494613E+003	4.6292603760E+002	-1.3208154876E+001	0.955	2.009	2.074
107.709	5.162	230.038	0.291	1.6456483425E+003	4.6160611257E+002	-1.3418864531E+001	0.955	2.007	2.067
108.693	5.170	230.318	0.287	1.6329831393E+003	4.5867022634E+002	-1.3122655140E+001	0.954	2.002	2.051
109.500	5.180	230.551	0.295	1.6222299666E+003	4.5619557381E+002	-1.3916032871E+001	0.953	1.997	2.036
110.098	5.196	230.733	0.313	1.6136418614E+003	4.5421453423E+002	-1.4763381765E+001	0.952	1.993	2.024
111.082	5.232	231.046	0.317	1.5984672401E+003	4.5068671156E+002	-1.5531835510E+001	0.951	1.986	2.002
112.065	5.266	231.356	0.322	1.5830966926E+003	4.4707205893E+002	-1.6771210475E+001	0.949	1.979	1.979
112.509	5.291	231.506	0.317	1.5754196873E+003	4.4522340882E+002	-1.7032757475E+001	0.948	1.976	1.968
113.492	5.312	231.809	0.308	1.5592225400E+003	4.4125526685E+002	-1.6555588029E+001	0.946	1.968	1.946
114.476	5.333	232.112	0.308	1.5428611896E+003	4.3712911297E+002	-1.8197081773E+001	0.943	1.960	1.924
114.968	5.344	232.264	0.309	1.5335081275E+003	4.3467094518E+002	-1.8565607709E+001	0.942	1.955	1.913
115.952	5.362	232.568	0.301	1.5160613943E+003	4.2994103079E+002	-1.8144963284E+001	0.939	1.946	1.893
116.935	5.363	232.856	0.293	1.4978239378E+003	4.2478653178E+002	-1.9399069571E+001	0.935	1.937	1.875
117.500	5.365	233.022	0.294	1.4865870477E+003	4.2147651413E+002	-1.9144136601E+001	0.932	1.931	1.865
117.501	5.365	233.022	0.281	1.4865713629E+003	4.2147185018E+002	-1.9144057990E+001	0.932	1.931	1.865
118.484	5.335	233.299	0.288	1.4665655260E+003	4.1538395414E+002	-2.1585158653E+001	0.929	1.920	1.849
119.467	5.318	233.588	0.298	1.4441216271E+003	4.0832542054E+002	-2.4089945325E+001	0.924	1.909	1.835
119.876	5.315	233.713	0.295	1.4340733385E+003	4.0510629735E+002	-2.4707386525E+001	0.921	1.904	1.829
120.859	5.273	233.999	0.309	1.4095598407E+003	3.9709403917E+002	-2.7372201723E+001	0.916	1.893	1.817
121.842	5.265	234.320	0.332	1.3802427066E+003	3.8736710484E+002	-3.2054086355E+001	0.908	1.881	1.806
122.201	5.269	234.444	0.335	1.3684456881E+003	3.8343354567E+002	-3.2811171007E+001	0.905	1.877	1.802
123.184	5.242	234.769	0.336	1.3363443909E+003	3.7267355920E+002	-3.3925078349E+001	0.896	1.866	1.794
124.168	5.226	235.105	0.343	1.3017280588E+003	3.6108934825E+002	-3.6324255985E+001	0.886	1.857	1.789
124.475	5.223	235.212	0.336	1.2904728692E+003	3.5733675213E+002	-3.6548765436E+001	0.883	1.854	1.787
125.458	5.174	235.539	0.321	1.2549284507E+003	3.4554039626E+002	-3.5686000550E+001	0.873	1.847	1.785
126.441	5.103	235.843	0.311	1.2202921807E+003	3.3412627174E+002	-3.6096723403E+001	0.863	1.842	1.786
126.821	5.077	235.962	0.308	1.2064612971E+003	3.2959818280E+002	-3.6401540971E+001	0.859	1.841	1.787
127.804	4.979	236.263	0.299	1.1707489230E+003	3.1797806503E+002	-3.5944594045E+001	0.849	1.839	1.791
128.788	4.867	236.550	0.293	1.1357720544E+003	3.0665331169E+002	-3.7127944096E+001	0.838	1.839	1.798
129.000	4.844	236.614	0.302	1.1278116753E+003	3.0407277611E+002	-3.7944036551E+001	0.836	1.839	1.799
129.109	4.833	236.647	0.301	1.1236315414E+003	3.0271716736E+002	-3.8179065040E+001	0.835	1.839	1.800
130.093	4.707	236.943	0.301	1.0861958642E+003	2.9059150627E+002	-3.8424157084E+001	0.824	1.841	1.809
131.076	4.580	237.238	0.307	1.0480659484E+003	2.7820555760E+002	-4.1163063296E+001	0.813	1.845	1.820
131.462	4.539	237.363	0.328	1.0318167978E+003	2.7289306172E+002	-4.2407724935E+001	0.808	1.847	1.824
132.445	4.419	237.688	0.332	9.8934498302E+002	2.5893821776E+002	-4.3501603761E+001	0.794	1.854	1.837
133.429	4.302	238.016	0.344	9.4626581278E+002	2.4470453163E+002	-4.6868578782E+001	0.778	1.863	1.851
133.893	4.263	238.187	0.368	9.2384499350E+002	2.3728346105E+002	-4.8287581284E+001	0.769	1.867	1.858
134.876	4.161	238.549	0.373	8.7641409137E+002	2.2155446954E+002	-4.8695382223E+001	0.749	1.879	1.873
135.859	4.067	238.920	0.397	8.2807983642E+002	2.0557010691E+002	-5.2709366682E+001	0.727	1.892	1.890
136.515	4.038	239.200	0.394	7.9198312157E+002	1.9378845974E+002	-5.1988473518E+001	0.709	1.903	1.903
137.498	3.918	239.566	0.376	7.4542129408E+002	1.7881111065E+002	-4.7396058604E+001	0.686	1.918	1.921
138.481	3.805	239.938	0.384	6.9877323616E+002	1.6417368154E+002	-4.8250501901E+001	0.662	1.936	1.940
138.947	3.758	240.122	0.378	6.7611945025E+002	1.5722171706E+002	-4.7454368324E+001	0.651	1.945	1.950
139.930	3.612	240.486	0.372	6.3190684179E+002	1.4403213695E+002	-4.4806626583E+001	0.629	1.964	1.972

140.914	3.471	240.854	0.381	5.8800198537E+002	1.3132422651E+002	-4.5815926865E+001	0.606	1.985	1.996
141.305	3.423	241.009	0.378	5.6987947801E+002	1.2621464596E+002	-4.5219205046E+001	0.596	1.995	2.007
142.289	3.253	241.374	0.373	5.2803480858E+002	1.1476317823E+002	-4.2252555429E+001	0.575	2.018	2.033
143.272	3.087	241.742	0.376	4.8678489238E+002	1.0379090562E+002	-4.1864874526E+001	0.554	2.043	2.062
143.601	3.033	241.867	0.377	4.7300751917E+002	1.0017753297E+002	-4.1453181062E+001	0.546	2.052	2.072
144.585	2.843	242.236	0.383	4.3337118591E+002	9.0050580687E+001	-4.0412030764E+001	0.525	2.079	2.102
145.500	2.679	242.594	0.394	3.9628954667E+002	8.0744755364E+001	-4.0535961190E+001	0.503	2.105	2.131
145.954	2.603	242.776	0.416	3.7789249477E+002	7.6182480584E+001	-4.0672507604E+001	0.492	2.118	2.145
146.937	2.426	243.191	0.427	3.3763761361E+002	6.6356616709E+001	-4.0390562656E+001	0.466	2.147	2.173
147.920	2.258	243.616	0.449	2.9845973543E+002	5.6965340464E+001	-4.1051364514E+001	0.438	2.174	2.196
148.519	2.183	243.901	0.465	2.7344307144E+002	5.1084597263E+001	-4.0359888980E+001	0.417	2.190	2.208
149.502	2.015	244.352	0.466	2.3606191100E+002	4.2480675749E+001	-3.7347911631E+001	0.385	2.211	2.218
150.486	1.862	244.817	0.475	1.9999404074E+002	3.4409972389E+001	-3.6740531241E+001	0.349	2.235	2.229
151.435	1.719	245.271	0.484	1.6504073702E+002	2.6578611598E+001	-3.6291184325E+001	0.305	2.254	2.230
152.419	1.557	245.752	0.484	1.2987212553E+002	1.8845722663E+001	-3.3612681976E+001	0.250	2.263	2.212
153.402	1.387	246.223	0.467	9.8937471730E+001	1.2475294634E+001	-2.8176224097E+001	0.193	2.258	2.171
154.000	1.262	246.490	0.445	8.3283576776E+001	9.5284396617E+000	-2.4997094057E+001	0.162	2.247	2.136
154.983	1.058	246.928	0.443	6.0615745011E+001	5.8221844965E+000	-2.0906692502E+001	0.117	2.214	2.063
155.606	0.924	247.201	0.488	4.8439400097E+001	4.2285158256E+000	-1.9606011158E+001	0.095	2.179	2.006
156.590	0.781	247.712	0.566	2.9069461070E+001	2.2284061541E+000	-1.8985382925E+001	0.073	2.079	1.876
157.573	0.729	248.315	0.566	1.1102426959E+001	6.8889245725E-001	-1.4781456649E+001	0.073	2.028	1.812

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
ht(m) : Altezza linea di thrust da nodo sinistro base concio
yt(m) : coordinata Y linea di trust
yt'(-) : gradiente pendenza locale linea di trust
E(x)(kN/m) : Forza Normale interconcio
T(x)(kN/m) : Forza Tangenziale interconcio
E' (kN) : derivata Forza normale interconcio
Rho(x) (-) : fattore mobilizzazione resistenza al taglio verticale interconcio ZhU et al.(2003)
FS_qFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by qFEM
FS_srmFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by SRM Procedure

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TABELLA SFORZI DI TAGLIO DISTRIBUITI LUNGO SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	dl (m)	alpha (°)	TauStress (kPa)	TauF (kN/m)	TauStrength (kPa)	TauS (kN/m)
30.005	0.983	1.056	-21.389	-1.699	-1.794	21.860	23.085
30.988	0.983	1.056	-21.389	-5.096	-5.381	26.645	28.138
31.971	0.029	0.031	-21.389	-6.844	-0.210	29.208	0.897
32.000	0.983	1.056	-21.389	-8.789	-9.282	32.225	34.031
32.983	0.983	1.056	-21.389	-12.580	-13.286	39.041	41.229
33.967	0.983	1.056	-21.389	-16.372	-17.290	47.597	50.264
34.950	0.983	1.056	-21.389	-20.164	-21.294	55.694	58.815
35.933	0.983	1.056	-21.389	-23.955	-25.298	63.485	67.043
36.917	0.983	1.056	-21.389	-27.747	-29.302	70.202	74.136
37.900	0.983	1.056	-21.389	-31.538	-33.306	75.768	80.015
38.883	0.124	0.133	-21.389	-33.673	-4.485	78.972	10.519
39.007	0.983	1.046	-19.962	-33.494	-35.041	84.593	88.499
39.990	0.983	1.046	-19.962	-36.885	-38.587	93.141	97.441
40.974	0.526	0.560	-19.962	-39.487	-22.106	98.796	55.309
41.500	0.983	1.046	-19.962	-42.125	-44.069	104.549	109.375
42.483	0.658	0.701	-19.962	-45.014	-31.535	112.960	79.135
43.142	0.983	1.026	-16.578	-39.707	-40.737	118.820	121.903
44.125	0.983	1.026	-16.578	-42.271	-43.368	124.950	128.193
45.108	0.739	0.771	-16.578	-44.516	-34.303	130.084	100.241
45.847	0.983	1.005	-12.002	-32.783	-32.956	134.559	135.270
46.830	0.983	1.005	-12.002	-34.299	-34.480	138.897	139.631
47.814	0.211	0.216	-12.002	-35.220	-7.594	139.820	30.146
48.024	0.976	0.981	-6.138	-15.175	-14.889	140.503	137.857
49.000	0.983	0.989	-6.138	-15.661	-15.488	142.643	141.071
49.983	0.265	0.266	-6.138	-15.969	-4.250	144.842	38.547

50.248	0.983	0.984	-1.474	2.097	2.062	141.865	139.544
51.231	0.954	0.954	-1.474	2.144	2.045	143.914	137.278
52.185	0.983	0.985	3.335	21.889	21.560	141.006	138.888
53.168	0.983	0.985	3.335	22.212	21.878	142.011	139.878
54.151	0.174	0.174	3.335	22.401	3.897	142.852	24.852
54.325	0.675	0.680	7.228	38.546	26.223	138.760	94.401
55.000	0.983	0.991	7.228	38.900	38.557	139.603	138.373
55.983	0.659	0.664	7.228	39.301	26.106	140.444	93.289
56.642	0.983	0.999	10.015	51.051	50.976	137.847	137.644
57.626	0.983	0.999	10.015	51.465	51.389	138.580	138.376
58.609	0.898	0.912	10.015	51.861	47.287	139.397	127.104
59.507	0.983	0.999	10.286	53.361	53.328	139.867	139.778
60.490	0.983	0.999	10.286	53.764	53.730	140.705	140.616
61.473	0.677	0.689	10.286	54.103	37.250	141.370	97.333
62.151	0.983	1.000	10.590	55.702	55.722	141.588	141.637
63.134	0.983	1.000	10.590	56.091	56.110	142.369	142.418
64.117	0.530	0.539	10.590	56.389	30.403	142.969	77.083
64.647	0.983	1.001	10.905	58.008	58.089	143.216	143.415
65.631	0.869	0.885	10.905	58.359	51.660	143.928	127.408
66.500	0.575	0.585	10.905	58.635	34.323	144.502	84.585
67.075	0.983	1.003	11.235	60.339	60.491	144.744	145.109
68.058	0.442	0.451	11.235	60.604	27.305	145.274	65.452
68.500	0.951	0.969	11.235	60.793	58.920	145.666	141.176
69.451	0.983	1.004	11.543	62.322	62.547	145.745	146.270
70.434	0.983	1.004	11.543	62.524	62.749	146.140	146.667
71.417	0.402	0.411	11.543	62.665	25.742	146.421	60.147
71.820	0.983	1.005	11.849	64.116	64.419	146.341	147.031
72.803	0.983	1.005	11.849	64.295	64.599	146.686	147.378
73.786	0.412	0.421	11.849	64.423	27.120	146.930	61.853
74.198	0.983	1.006	12.151	65.840	66.225	146.830	147.688
75.182	0.983	1.006	12.151	65.997	66.382	147.126	147.985
76.165	0.432	0.442	12.151	66.109	29.192	147.333	65.058
76.597	0.983	1.007	12.445	67.481	67.951	147.221	148.247
77.580	0.920	0.942	12.445	67.610	63.704	147.463	138.944
78.500	0.529	0.541	12.445	67.663	36.624	147.562	79.870
79.029	0.983	1.008	12.657	68.543	69.078	147.281	148.430
80.012	0.983	1.008	12.657	68.491	69.025	147.185	148.333
80.995	0.440	0.451	12.657	68.453	30.868	147.115	66.340
81.435	0.983	1.009	12.873	69.329	69.930	146.812	148.083
82.418	0.983	1.009	12.873	69.256	69.856	146.679	147.949
83.402	0.098	0.101	12.873	69.216	6.975	146.608	14.774
83.500	0.322	0.331	12.873	69.187	22.868	146.555	48.439
83.822	0.983	1.010	13.090	69.998	70.666	146.128	147.522
84.806	0.983	1.010	13.090	69.821	70.487	145.806	147.197
85.789	0.414	0.425	13.090	69.694	29.609	145.578	61.848
86.203	0.983	1.010	13.308	70.474	71.210	145.105	146.620
87.186	0.314	0.323	13.308	70.342	22.701	144.865	46.752
87.500	0.983	1.010	13.308	70.089	70.821	144.410	145.918
88.483	0.098	0.101	13.308	69.846	7.022	143.975	14.475
88.581	0.983	1.011	13.525	70.492	71.293	143.288	144.915
89.564	0.983	1.011	13.525	70.024	70.820	142.457	144.075
90.548	0.413	0.425	13.525	69.692	29.615	141.869	60.286
90.961	0.983	1.012	13.741	70.226	71.088	141.016	142.748
91.944	0.983	1.012	13.741	69.731	70.587	140.148	141.869
92.928	0.419	0.431	13.741	69.378	29.929	139.536	60.195
93.347	0.653	0.673	13.955	69.950	47.097	138.818	93.464
94.000	0.983	1.013	13.955	69.906	70.829	138.744	140.577
94.983	0.767	0.790	13.955	70.135	55.435	139.138	109.976
95.750	0.983	1.014	14.164	71.188	72.195	139.288	141.258
96.734	0.983	1.014	14.164	71.427	72.438	139.706	141.682
97.717	0.460	0.475	14.164	71.603	33.990	140.025	66.469
98.177	0.983	1.015	14.420	72.785	73.898	140.031	142.173
99.161	0.839	0.867	14.420	72.986	63.259	140.382	121.673
100.000	0.577	0.596	14.420	72.922	43.429	140.306	83.559
100.577	0.983	1.016	14.679	73.513	74.724	139.311	141.608
101.560	0.440	0.455	14.679	73.102	33.243	138.653	63.052

102.000	0.958	0.991	14.679	73.050	72.361	138.588	137.282
102.958	0.983	1.018	14.941	74.211	75.526	138.536	140.990
103.942	0.983	1.018	14.941	74.338	75.655	138.748	141.206
104.925	0.407	0.422	14.941	74.428	31.390	138.915	58.588
105.332	0.983	1.019	15.202	75.526	76.959	138.735	141.366
106.316	0.983	1.019	15.202	75.627	77.061	138.896	141.531
107.299	0.411	0.425	15.202	75.698	32.203	139.039	59.149
107.709	0.983	1.020	15.468	76.791	78.347	138.811	141.624
108.693	0.807	0.838	15.468	76.857	64.370	138.923	116.352
109.500	0.598	0.621	15.468	76.999	47.792	139.169	86.380
110.098	0.983	1.022	15.729	78.298	79.986	139.344	142.348
111.082	0.983	1.022	15.729	78.641	80.336	139.877	142.892
112.065	0.444	0.461	15.729	78.889	36.399	140.313	64.740
112.509	0.983	1.023	15.985	80.128	81.959	140.368	143.576
113.492	0.983	1.023	15.985	80.446	82.285	140.866	144.086
114.476	0.493	0.513	15.985	80.685	41.364	141.326	72.452
114.968	0.983	1.024	16.230	81.872	83.847	141.366	144.776
115.952	0.983	1.024	16.230	82.166	84.148	141.860	145.282
116.935	0.565	0.588	16.230	82.398	48.486	142.288	83.728
117.500	0.001	0.001	16.230	82.482	0.070	142.390	0.122
117.501	0.983	1.030	17.312	86.594	89.189	141.081	145.309
118.484	0.983	1.030	17.312	86.377	88.966	140.953	145.177
119.467	0.408	0.428	17.312	86.224	36.868	140.864	60.232
119.876	0.983	1.037	18.484	90.399	93.726	139.275	144.400
120.859	0.983	1.037	18.484	90.021	93.334	139.163	144.283
121.842	0.359	0.378	18.484	89.763	33.967	139.059	52.621
122.201	0.983	1.044	19.704	93.804	97.975	137.281	143.385
123.184	0.983	1.044	19.704	93.241	97.387	136.810	142.893
124.168	0.307	0.326	19.704	92.872	30.275	136.475	44.489
124.475	0.983	1.053	20.894	96.480	101.548	134.533	141.599
125.458	0.983	1.053	20.894	95.721	100.748	133.538	140.552
126.441	0.380	0.406	20.894	95.194	38.681	133.027	54.054
126.821	0.983	1.061	22.085	98.405	104.424	130.895	138.902
127.804	0.983	1.061	22.085	97.432	103.392	129.732	137.667
128.788	0.212	0.229	22.085	96.841	22.206	129.302	29.649
129.000	0.109	0.118	22.085	96.659	11.417	129.185	15.259
129.109	0.983	1.070	23.251	99.285	106.258	126.844	135.753
130.093	0.983	1.070	23.251	97.649	104.507	125.254	134.050
131.076	0.386	0.420	23.251	96.510	40.543	124.521	52.310
131.462	0.983	1.079	24.332	98.255	106.034	122.202	131.877
132.445	0.983	1.079	24.332	96.386	104.017	120.478	130.017
133.429	0.464	0.509	24.332	95.010	48.391	119.752	60.993
133.893	0.983	1.088	25.286	95.944	104.340	117.321	127.588
134.876	0.983	1.088	25.286	93.859	102.072	115.465	125.570
135.859	0.655	0.725	25.286	92.121	66.771	114.589	83.056
136.515	0.983	1.097	26.292	92.563	101.521	110.604	121.308
137.498	0.983	1.097	26.292	90.242	98.974	108.336	118.820
138.481	0.466	0.520	26.292	88.531	45.996	106.805	55.490
138.947	0.983	1.107	27.391	88.923	98.480	103.301	114.402
139.930	0.983	1.107	27.391	86.332	95.610	100.809	111.643
140.914	0.392	0.441	27.391	84.521	37.276	99.304	43.796
141.305	0.983	1.119	28.529	84.598	94.683	95.747	107.161
142.289	0.983	1.119	28.529	81.716	91.458	93.101	104.200
143.272	0.329	0.375	28.529	79.793	29.909	91.410	34.263
143.601	0.983	1.131	29.648	79.446	89.888	88.238	99.835
144.585	0.915	1.053	29.648	76.379	80.451	85.734	90.306
145.500	0.454	0.522	29.648	74.132	38.699	83.894	43.795
145.954	0.983	1.148	31.060	73.321	84.164	80.506	92.412
146.937	0.983	1.148	31.060	69.601	79.894	77.450	88.904
147.920	0.599	0.699	31.060	66.608	46.550	75.374	52.676
148.519	0.983	1.162	32.167	64.590	75.029	71.464	83.013
149.502	0.983	1.162	32.167	60.551	70.337	68.218	79.243
150.486	0.950	1.122	32.167	56.582	63.489	65.389	73.372
151.435	0.983	1.175	33.155	53.230	62.520	61.539	72.279
152.419	0.983	1.175	33.155	48.900	57.434	57.629	67.686
153.402	0.598	0.714	33.155	45.419	32.439	54.197	38.708

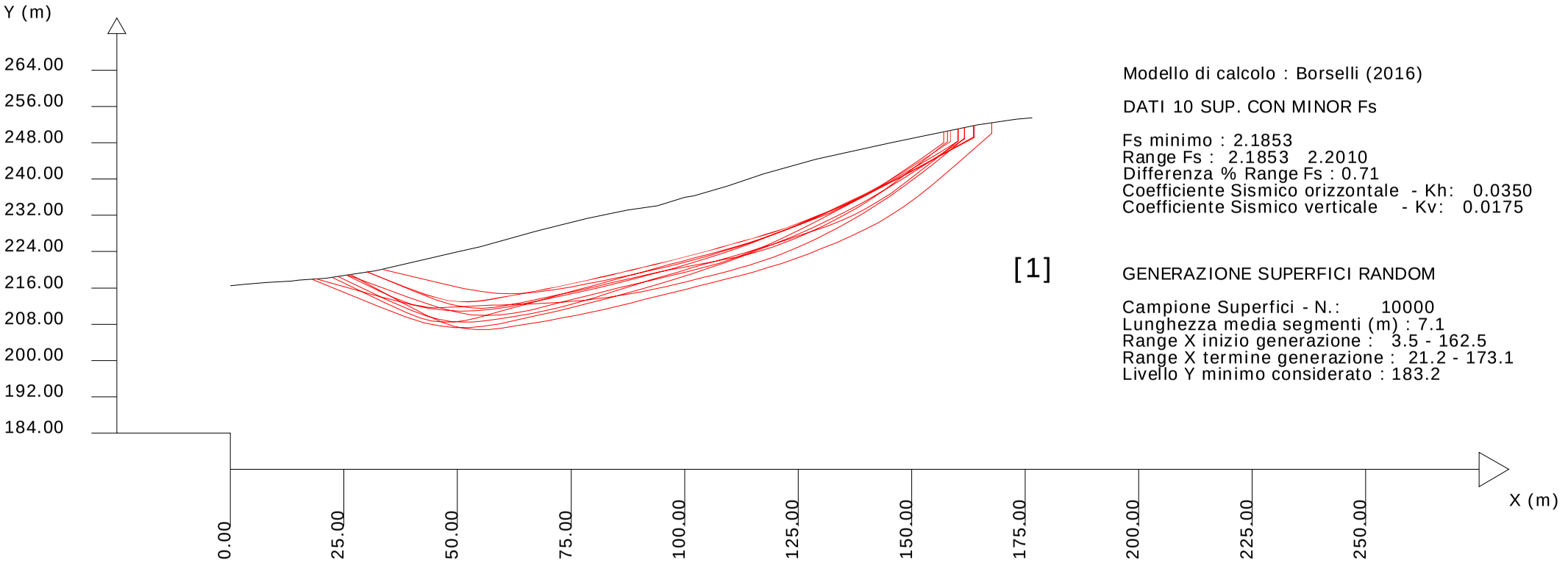
154.000	0.983	1.175	33.155	41.965	49.289	51.042	59.950
154.983	0.623	0.744	33.155	38.475	28.627	47.827	35.586
155.606	0.983	1.181	33.662	35.154	41.531	44.754	52.872
156.590	0.983	1.181	33.662	30.728	36.302	41.432	48.948
157.573	0.983	1.181	33.662	26.302	31.074	37.844	44.710

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
dl(m) : lunghezza base concio
alpha(°) : Angolo pendenza base concio
TauStress(kPa) : Sforzo di taglio su base concio
TauF (kN/m) : Forza di taglio su base concio
TauStrength(kPa) : Resistenza al taglio su base concio
TauS (kN/m) : Forza resistente al taglio su base concio

SSAP 5.0.2 (2021) - Slope Stability Analysis Program
Software by Dr.Geol. L.Borselli - www.lorenzo-borselli.eu
SSAP/DXF generator rel. 2.0 (2020)

Data : 18/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Borselli (2016)

DATI 10 SUP. CON MINOR Fs

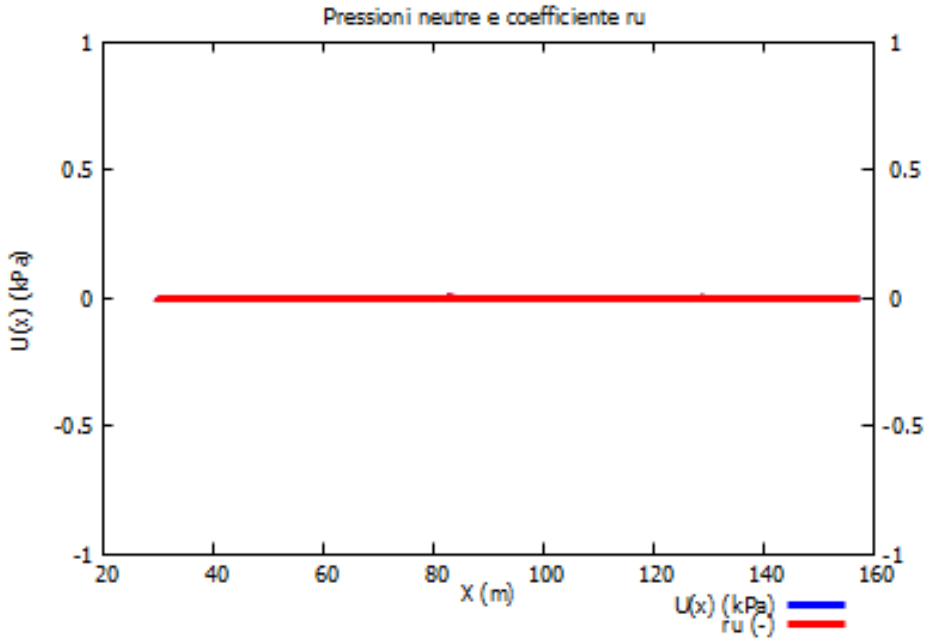
Fs minimo : 2.1853
Range Fs : 2.1853 2.2010
Differenza % Range Fs : 0.71
Coefficiente Sismico orizzontale - Kh: 0.0350
Coefficiente Sismico verticale - Kv: 0.0175

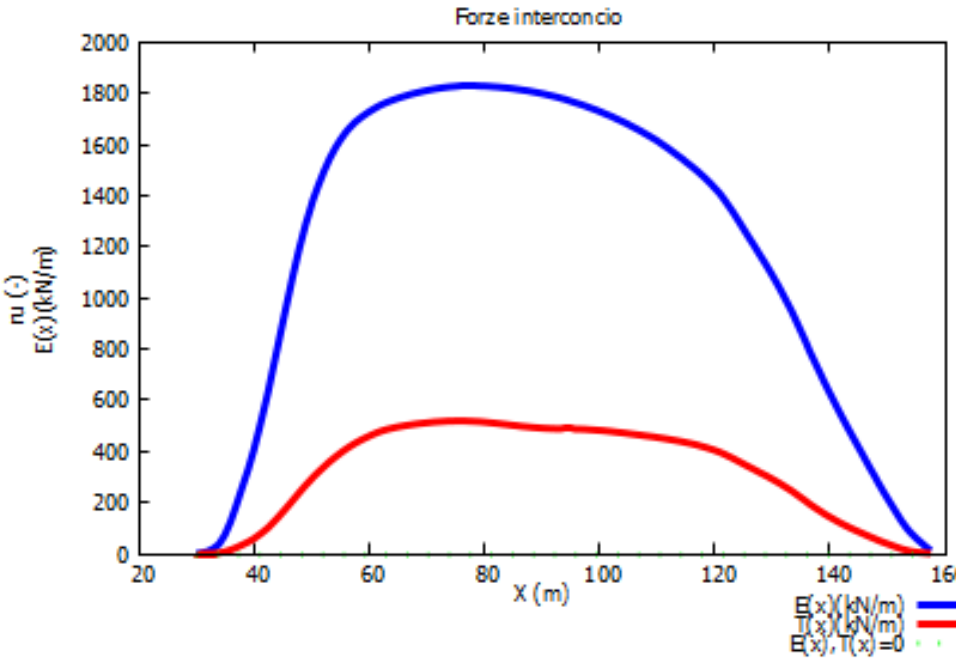
GENERAZIONE SUPERFICI RANDOM

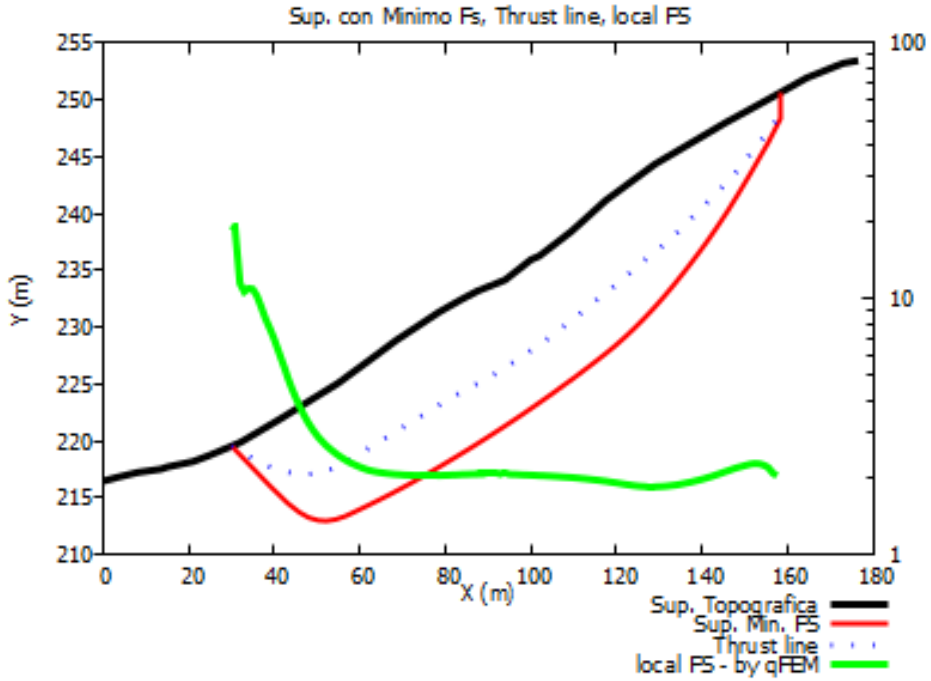
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 7.1
Range X inizio generazione : 3.5 - 162.5
Range X termine generazione : 21.2 - 173.1
Livello Y minimo considerato : 183.2

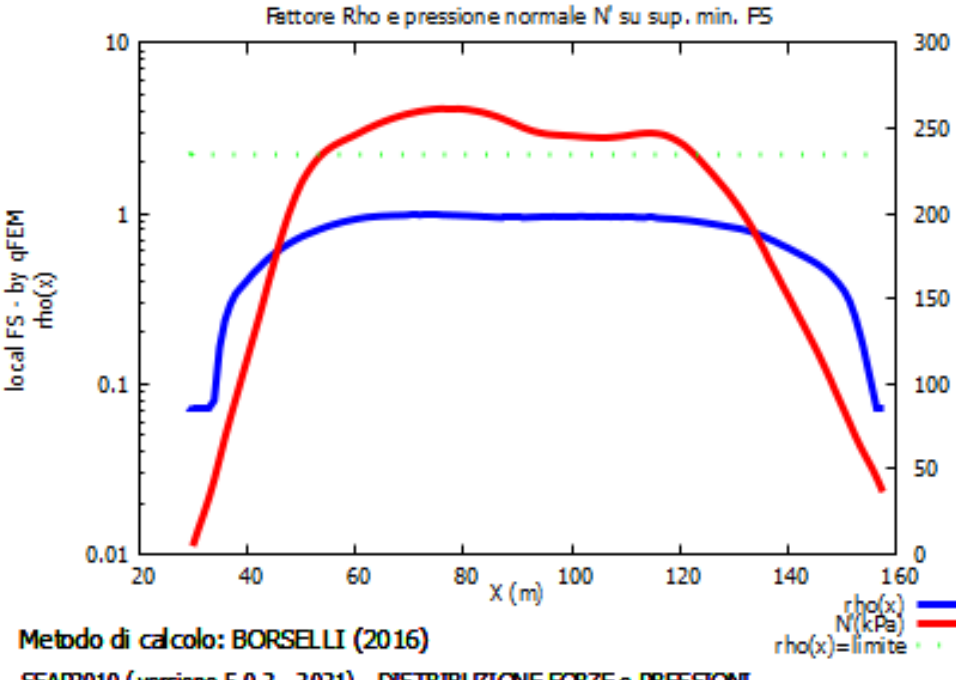
Parametri Geotecnici degli strati # ----------

N.	phi`	C`	Cu	Gamm	GammSat	sgci	GSI	mi	D
..	deg	kPa	kPa	kN/m3	kN/m3	MPa	..	..	..
1	26.00	19.50	0	20.00	22.00	0	0	0	0





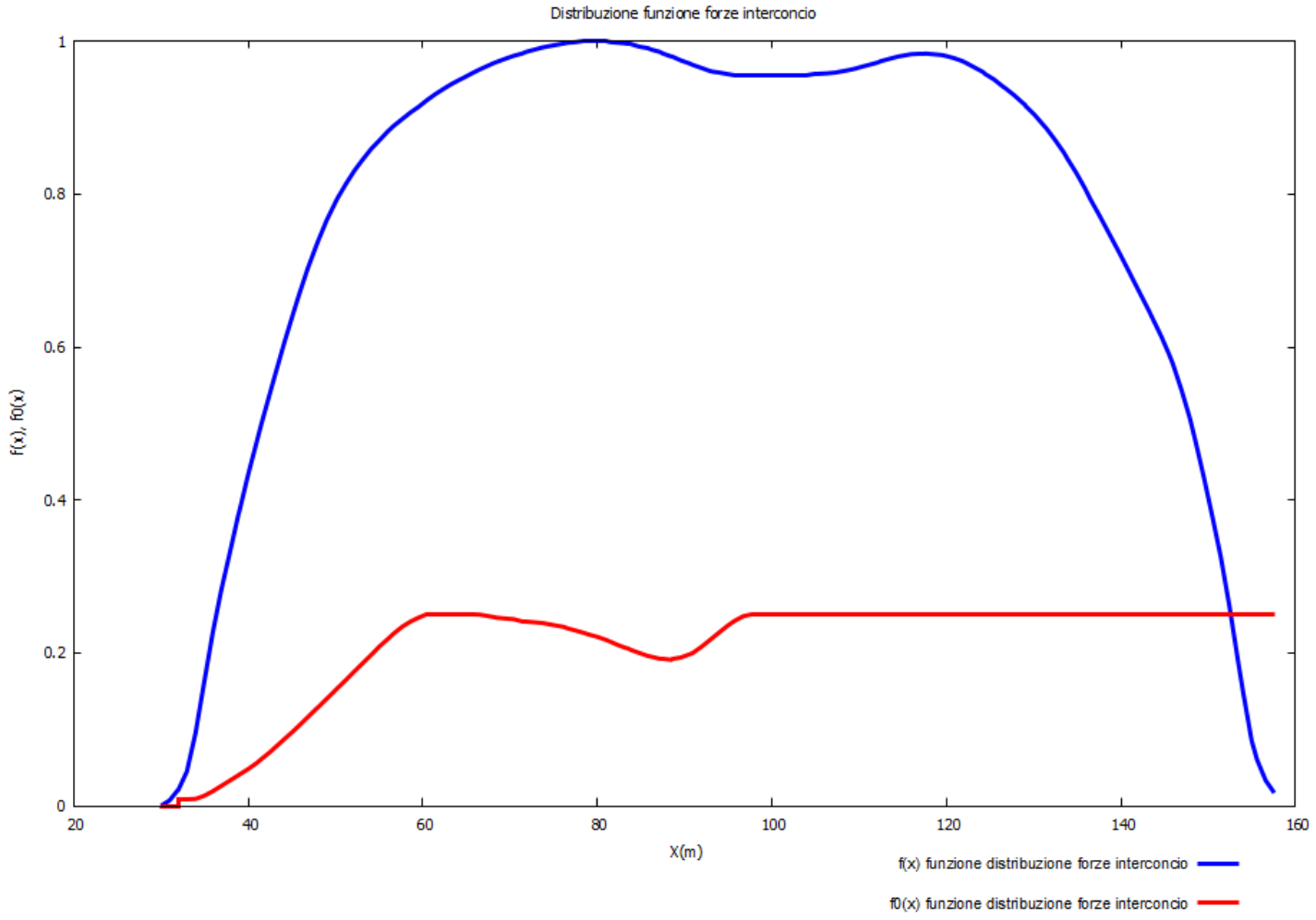


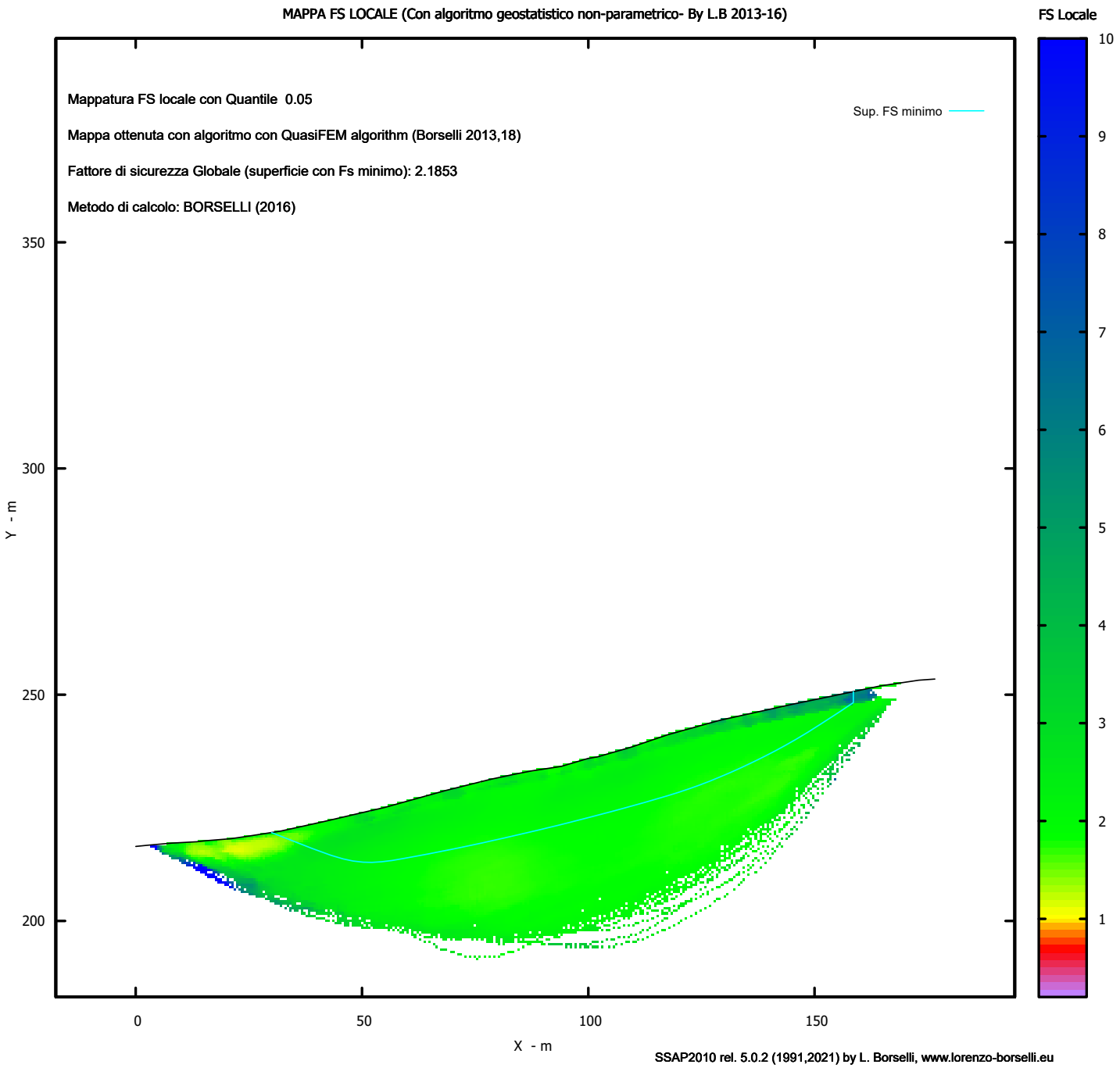


Metodo di calcolo: BORSELLI (2016)

SSAP2010 (versione 5.0.2 - 2021) - DISTRIBUZIONE FORZE e PRESSIONI

18/11/21 15:00


Distribuzione funzione forze interconcio
f(x), f0(x)
X(m)
0
0.2
0.4
0.6
0.8
1
20
40
60
80
100
120
140
160
f(x) funzione distribuzione forze interconcio
f0(x) funzione distribuzione forze interconcio


MAPPA FS LOCALE (Con algoritmo geostatistico non-parametrico- By L.B 2013-16)
FS Locale
Mappatura FS locale con Quantile 0.05
Mappa ottenuta con algoritmo con QuasiFEM algorithm (Borselli 2013,18)
Fattore di sicurezza Globale (superficie con Fs minimo): 2.1853
Metodo di calcolo: BORSELLI (2016)
Sup. FS minimo
Y - m
X - m
350
300
250
200
0
50
100
150
10
9
8
7
6
5
4
3
2
1
Credits to: GNUPLOT 5.4.1 www.gnuplot.info
SSAP2010 rel. 5.0.2 (1991,2021) by L. Borselli, www.lorenzo-borselli.eu
https://WWW.SSAP.EU

VERIFICA DI STABILITA' SEZIONE 3

CONDIZIONE NON DRENATA

Report elaborazioni

SSAP 5.0.2 - Slope Stability Analysis Program (1991,2021)
WWW.SSAP.EU
Build No. 11893
BY
Dr. Geol. LORENZO BORSELLI *,**
*UASLP, San Luis Potosi, Mexico
e-mail: lborselli@gmail.com
CV e WEB page personale: WWW.LORENZO-BORSELLI.EU
** Gia' Ricercatore CNR-IRPI fino a Luglio 2011

Ultima Revisione struttura tabelle del report: 21 Febbraio 2021

File report: C:\SSAP2010\CRACO SERRACARUSO CAP\VERIFICA 3\NON DRENATA\MORG\MORG.txt
Data: 18/11/2021
Localita' :
Descrizione:
Modello pendio: NONDRENATA.mod

---------- PARAMETRI DEL MODELLO DEL PENDIO ----------

__ PARAMETRI GEOMETRICI - Coordinate X Y (in m) __

SUP T.		SUP 2		SUP 3		SUP 4	
X	Y	X	Y	X	Y	X	Y
0.00	216.45	-	-	-	-	-	-
3.00	216.75	-	-	-	-	-	-
8.00	217.20	-	-	-	-	-	-
13.50	217.50	-	-	-	-	-	-
15.00	217.69	-	-	-	-	-	-
21.00	218.16	-	-	-	-	-	-
24.50	218.66	-	-	-	-	-	-
32.00	219.84	-	-	-	-	-	-
41.50	221.94	-	-	-	-	-	-
49.00	223.69	-	-	-	-	-	-
55.00	225.08	-	-	-	-	-	-
66.50	228.27	-	-	-	-	-	-
68.50	228.83	-	-	-	-	-	-
78.50	231.31	-	-	-	-	-	-
83.50	232.38	-	-	-	-	-	-
87.50	233.17	-	-	-	-	-	-
94.00	234.15	-	-	-	-	-	-
100.00	235.93	-	-	-	-	-	-
102.00	236.25	-	-	-	-	-	-
109.50	238.42	-	-	-	-	-	-
117.50	241.14	-	-	-	-	-	-
129.00	244.33	-	-	-	-	-	-
145.50	247.98	-	-	-	-	-	-
154.00	249.72	-	-	-	-	-	-
164.50	251.93	-	-	-	-	-	-
173.00	253.21	-	-	-	-	-	-
176.59	253.45	-	-	-	-	-	-

ASSENZA DI FALDA

------- PARAMETRI GEOMECCANICI -------

	fi`	C`	Cu	Gamm	Gamm_sat	STR_IDX	sgci	GSI	mi	D
STRATO 1	0.00	0.00	100.00	20.00	22.00	19.086	0.00	0.00	0.00	0.00

LEGENDA: fi`_____ Angolo di attrito interno efficace(in gradi)
C` _____ Coesione efficace (in Kpa)

Cu _____ Resistenza al taglio Non drenata (in Kpa)
Gamm _____ Peso di volume terreno fuori falda (in KN/m^3)
Gamm_sat __ Peso di volume terreno immerso (in KN/m^3)
STR_IDX ___ Indice di resistenza (usato in solo in 'SNIFF SEARCH) (adimensionale)
---- SOLO Per AMMASSI ROCCIOSI FRATTURATI - Parametri Criterio di Rottura di Hoek (2002)-
sigci _____ Resistenza Compressione Uniassiale Roccia Intatta (in MPa)
GSI _____ Geological Strenght Index ammasso(adimensionale)
mi _____ Indice litologico ammasso(adimensionale)
D _____ Fattore di disturbo ammasso(adimensionale)
Fattore di riduzione NTC2018: gammaPHI=1.25 e gammaC=1.25 - DISATTIVATO (solo per ROCCE)
Uso CRITERIO DI ROTTURA Hoek et al.(2002,2006) - non-lineare - Generalizzato, secondo Lei et al.(2016)

---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
MOTORE DI RICERCA: RANDOM SEARCH - Siegel (1981)
FILTRAGGIO SUPERFICI : ATTIVATO
COORDINATE X1,X2,Y OSTACOLO : 0.00 0.00 0.00
LUNGHEZZA MEDIA SEGMENTI (m)*: 7.1 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 3.53 162.46
LIVELLO MINIMO CONSIDERATO (Ymin): 210.00
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 21.19 173.06
TOTALE SUPERFICI GENERATE : 10000
*NOTA IMPORTANTE: La lunghezza media dei segmenti non viene cosiderata nel caso
di uso del motore di recerca NEW RANOM SEARCH

---------- INFORMAZIONI PARAMETRI DI CALCOLO ----------
METODO DI CALCOLO : MORGENSTERN - PRICE (Morgenstern & Price, 1965)
METODO DI ESPLORAZIONE CAMPO VALORI (lambda0,Fs0) ADOTTATO : A (rapido)
COEFFICIENTE SISMICO UTILIZZATO Kh : 0.0350
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0175
COEFFICIENTE c=Kv/Kh UTILIZZATO : 0.5000
FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00

N.B. Le forze orizzontali addizionali in testa e alla base sono poste uguali a 0
durante le tutte le verifiche globali.
I valori >0 impostati dall'utente sono utilizzati solo in caso di verifica singola

---------- RISULTATO FINALE ELABORAZIONI ----------
---
* DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *

Fattore di sicurezza (FS) 1.3956 - Min. - X Y Lambda= 0.2104
37.97 221.16
44.94 215.94
48.11 213.68
50.14 212.40
51.74 211.59
53.40 210.98
54.79 210.62
56.38 210.41
58.16 210.33
60.51 210.36
62.55 210.42
64.43 210.51
66.23 210.63
68.02 210.79
69.77 210.98
71.57 211.21
73.44 211.49
75.46 211.81
77.31 212.08
79.09 212.28
80.81 212.44
82.59 212.56

84.32 212.63
86.12 212.66
88.00 212.64
90.10 212.57
91.95 212.57
93.71 212.62
95.39 212.73
97.15 212.92
98.82 213.15
100.56 213.45
102.35 213.82
104.34 214.29
106.25 214.75
108.11 215.20
109.94 215.65
111.76 216.10
113.60 216.57
115.48 217.05
117.45 217.55
119.52 218.10
121.29 218.65
122.97 219.27
124.55 219.96
126.28 220.84
127.87 221.76
129.57 222.85
131.36 224.10
133.41 225.65
135.37 227.12
137.25 228.55
139.10 229.97
140.91 231.37
142.73 232.78
144.55 234.20
146.38 235.64
148.23 237.11
150.06 238.53
151.87 239.94
152.83 240.67
152.83 249.48

Fattore di sicurezza (FS) 1.4288 - N.2 -- X Y Lambda= 0.1891
57.75 225.84
64.34 219.92
67.40 217.29
69.39 215.74
70.99 214.68
72.61 213.82
74.00 213.23
75.57 212.75
77.30 212.37
79.53 212.02
81.46 211.75
83.25 211.55
84.94 211.40
86.65 211.29
88.32 211.23
90.04 211.21
91.84 211.23
93.83 211.29
95.62 211.39
97.33 211.53
98.96 211.72
100.67 211.97
102.30 212.27

104.00 212.62
105.77 213.04
107.73 213.55
109.54 214.06
111.28 214.58
112.98 215.12
114.70 215.70
116.40 216.30
118.14 216.96
119.93 217.67
121.87 218.46
123.64 219.24
125.35 220.04
127.00 220.87
128.72 221.78
130.37 222.71
132.09 223.73
133.85 224.84
135.78 226.09
137.57 227.30
139.32 228.51
141.02 229.74
142.75 231.02
144.44 232.32
146.16 233.68
147.91 235.11
149.73 236.64
151.52 238.12
153.29 239.57
154.83 240.83
154.83 249.90

Fattore di sicurezza (FS) 1.4343 - N.3 -- X Y Lambda= 0.1965
41.13 221.86
47.00 218.51
49.75 217.02
51.57 216.15
53.05 215.55
54.54 215.10
55.86 214.80
57.29 214.59
58.84 214.47
60.73 214.40
62.45 214.33
64.08 214.25
65.66 214.15
67.23 214.04
68.78 213.91
70.34 213.76
71.92 213.60
73.54 213.42
75.15 213.24
76.73 213.07
78.32 212.90
79.89 212.74
81.48 212.58
83.07 212.43
84.67 212.27
86.29 212.12
87.87 211.99
89.43 211.87
90.98 211.77
92.55 211.69
94.12 211.62
95.75 211.56

97.45 211.52
99.30 211.50
100.86 211.54
102.31 211.66
103.67 211.86
105.16 212.17
106.53 212.55
107.99 213.04
109.55 213.66
111.39 214.46
113.09 215.19
114.72 215.87
116.30 216.51
117.86 217.13
119.43 217.73
121.01 218.32
122.64 218.91
124.35 219.52
125.93 220.11
127.47 220.73
128.96 221.38
130.51 222.10
132.02 222.84
133.58 223.66
135.20 224.55
136.98 225.58
138.59 226.55
140.13 227.55
141.62 228.58
143.16 229.71
144.65 230.85
146.18 232.10
147.75 233.44
149.46 234.96
151.10 236.43
152.69 237.89
154.27 239.35
155.84 240.82
156.77 241.71
156.77 250.30

Fattore di sicurezza (FS) 1.4365 - N.4 -- X Y Lambda= 0.2043
43.52 222.41
53.25 218.08
57.83 216.16
60.89 215.04
63.42 214.29
65.93 213.76
68.18 213.42
70.61 213.22
73.20 213.16
76.30 213.22
79.16 213.30
81.87 213.40
84.51 213.52
87.13 213.67
89.74 213.84
92.39 214.05
95.12 214.28
97.99 214.56
100.63 214.86
103.19 215.23
105.68 215.65
108.26 216.15
110.77 216.70

	113.37	217.35			
	116.09	218.09			
	119.09	218.97			
	121.78	219.83			
	124.36	220.74			
	126.83	221.70			
	129.41	222.79			
	131.90	223.92			
	134.50	225.19			
	137.23	226.62			
	140.28	228.29			
	142.97	229.87			
	145.54	231.50			
	147.98	233.18			
	150.56	235.08			
	153.29	237.28			
	156.47	240.00			
	158.34	241.68			
	158.34	250.63			
Fattore di sicurezza (FS)	1.4383	- N.5 --	X	Y	Lambda= 0.2017
	50.63	224.07			
	58.57	219.36			
	62.33	217.23			
	64.86	215.94			
	66.97	215.01			
	69.03	214.27			
	70.91	213.72			
	72.96	213.26			
	75.16	212.89			
	77.84	212.55			
	80.14	212.33			
	82.28	212.19			
	84.30	212.13			
	86.40	212.15			
	88.40	212.25			
	90.51	212.42			
	92.73	212.68			
	95.27	213.05			
	97.51	213.44			
	99.63	213.87			
	101.65	214.36			
	103.76	214.94			
	105.77	215.57			
	107.86	216.29			
	110.03	217.12			
	112.42	218.09			
	114.68	218.99			
	116.86	219.82			
	119.00	220.61			
	121.14	221.38			
	123.28	222.11			
	125.46	222.82			
	127.71	223.53			
	130.11	224.26			
	132.27	224.99			
	134.36	225.76			
	136.37	226.58			
	138.48	227.51			
	140.51	228.49			
	142.63	229.60			
	144.86	230.84			
	147.36	232.31			
	149.58	233.69			
	151.70	235.11			

153.73 236.56
155.84 238.18
158.10 240.05
160.72 242.35
160.72 251.13

Fattore di sicurezza (FS) 1.4439 - N.6 -- X Y Lambda= 0.1937
44.36 222.61
55.73 218.36
61.24 216.41
64.99 215.23
68.19 214.37
71.25 213.72
74.14 213.24
77.21 212.86
80.50 212.59
84.35 212.39
87.63 212.32
90.68 212.39
93.55 212.58
96.59 212.93
99.44 213.38
102.46 214.00
105.65 214.78
109.31 215.81
112.64 216.79
115.81 217.81
118.87 218.85
121.99 219.99
125.05 221.17
128.22 222.47
131.55 223.91
135.21 225.56
138.37 227.12
141.39 228.78
144.25 230.52
147.30 232.58
150.52 234.98
154.28 238.04
158.95 242.08
158.95 250.76

Fattore di sicurezza (FS) 1.4668 - N.7 -- X Y Lambda= 0.1944
38.40 221.25
47.76 217.74
52.37 216.07
55.56 215.02
58.31 214.21
60.90 213.55
63.38 213.00
65.99 212.52
68.75 212.09
71.88 211.68
74.58 211.40
77.13 211.25
79.53 211.20
82.08 211.27
84.47 211.43
87.00 211.72
89.65 212.12
92.69 212.67
95.47 213.22
98.13 213.79
100.71 214.40

103.31 215.06
105.88 215.76
108.51 216.53
111.25 217.37
114.19 218.33
116.86 219.27
119.43 220.25
121.92 221.29
124.50 222.45
127.00 223.66
129.60 225.00
132.32 226.49
135.32 228.22
138.02 229.86
140.62 231.53
143.12 233.25
145.71 235.13
148.50 237.31
151.71 239.95
152.64 240.75
152.64 249.44

Fattore di sicurezza (FS) 1.4676 - N.8 -- X Y Lambda= 0.1989
32.15 219.87
38.25 216.03
41.05 214.36
42.86 213.41
44.32 212.79
45.80 212.34
47.08 212.08
48.51 211.92
50.07 211.87
52.05 211.92
53.84 211.95
55.52 211.97
57.15 211.96
58.74 211.94
60.33 211.91
61.93 211.86
63.56 211.80
65.25 211.72
66.87 211.66
68.47 211.62
70.04 211.59
71.64 211.58
73.22 211.59
74.81 211.62
76.44 211.66
78.13 211.72
79.76 211.77
81.36 211.80
82.94 211.81
84.54 211.81
86.12 211.79
87.73 211.76
89.36 211.71
91.07 211.64
92.69 211.60
94.28 211.58
95.84 211.58
97.43 211.61
99.01 211.66
100.63 211.74
102.32 211.85
104.16 211.98

105.76 212.16
107.30 212.38
108.75 212.66
110.30 213.03
111.77 213.44
113.33 213.95
114.98 214.55
116.89 215.31
118.56 216.03
120.14 216.78
121.64 217.55
123.20 218.42
124.70 219.32
126.26 220.33
127.89 221.45
129.71 222.76
131.37 224.01
132.98 225.26
134.53 226.52
136.11 227.87
137.65 229.23
139.22 230.67
140.83 232.20
142.53 233.86
144.18 235.47
145.81 237.04
147.42 238.58
149.02 240.09
149.02 248.70

Fattore di sicurezza (FS) 1.4717 - N.9 -- X Y Lambda= 0.2116
31.70 219.79
44.34 215.77
50.32 214.00
54.33 213.01
57.68 212.39
60.97 212.02
63.96 211.86
67.16 211.87
70.55 212.06
74.54 212.44
78.25 212.82
81.79 213.21
85.24 213.63
88.66 214.07
92.09 214.55
95.59 215.07
99.20 215.64
103.03 216.27
106.45 216.94
109.74 217.70
112.90 218.56
116.25 219.60
119.44 220.72
122.80 222.02
126.36 223.54
130.40 225.37
133.95 227.11
137.32 228.90
140.52 230.76
143.88 232.86
147.46 235.31
151.60 238.34
155.01 240.99
155.01 249.93

Fattore di sicurezza (FS) 1.4881 - N.10 -- X Y Lambda= 0.1850

52.92	224.60
63.63	219.22
68.75	216.77
72.20	215.29
75.10	214.22
77.92	213.39
80.54	212.77
83.39	212.26
86.50	211.86
90.30	211.52
93.37	211.37
96.15	211.39
98.69	211.58
101.47	211.98
103.99	212.51
106.74	213.27
109.70	214.26
113.28	215.60
116.43	216.86
119.40	218.14
122.22	219.44
125.10	220.86
127.90	222.32
130.78	223.92
133.76	225.66
137.01	227.63
140.02	229.54
142.95	231.46
145.80	233.40
148.70	235.45
151.88	237.81
155.49	240.58
156.36	241.27
156.36	250.22

---------- ANALISI DEFICIT DI RESISTENZA ----------
DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *
Analisi Deficit in riferimento a FS(progetto) = 1.100

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	1.396	13555.9	9713.4	2871.2	Surplus
2	1.429	12245.0	8569.9	2818.2	Surplus
3	1.434	13645.0	9513.2	3180.5	Surplus
4	1.437	13149.7	9153.8	3080.4	Surplus
5	1.438	12954.3	9006.8	3046.8	Surplus
6	1.444	13252.0	9178.2	3155.9	Surplus
7	1.467	13158.8	8971.3	3290.3	Surplus
8	1.468	13903.0	9473.2	3482.5	Surplus
9	1.472	13773.0	9358.4	3478.8	Surplus
10	1.488	12596.4	8464.6	3285.3	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 2818.2

Note: FTR --> Forza totale Resistente lungo la superficie
di scivolamento
FTA --> Forza totale Agente lungo la superficie
di scivolamento

IMPORTANTE! : Il Deficit o il Surplus di resistenza viene espresso in kN
per metro di LARGHEZZA rispetto al fronte della scarpata

TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (°)	W (kN/m)	ru (-)	U (kPa)	phi' (°)	(c',Cu) (kPa)
37.969	0.964	-36.83	9.18	0.00	0.00	0.00	100.00
38.934	0.964	-36.83	27.54	0.00	0.00	0.00	100.00
39.898	0.964	-36.83	45.89	0.00	0.00	0.00	100.00
40.862	0.638	-36.83	40.42	0.00	0.00	0.00	100.00
41.500	0.964	-36.83	76.50	0.00	0.00	0.00	100.00
42.464	0.964	-36.83	95.09	0.00	0.00	0.00	100.00
43.429	0.964	-36.83	113.68	0.00	0.00	0.00	100.00
44.393	0.544	-36.83	72.39	0.00	0.00	0.00	100.00
44.938	0.964	-35.50	142.43	0.00	0.00	0.00	100.00
45.902	0.964	-35.50	160.34	0.00	0.00	0.00	100.00
46.867	0.964	-35.50	178.26	0.00	0.00	0.00	100.00
47.831	0.277	-35.50	54.52	0.00	0.00	0.00	100.00
48.108	0.892	-32.13	184.88	0.00	0.00	0.00	100.00
49.000	0.964	-32.13	215.58	0.00	0.00	0.00	100.00
49.964	0.175	-32.13	40.76	0.00	0.00	0.00	100.00
50.139	0.964	-27.13	233.70	0.00	0.00	0.00	100.00
51.103	0.634	-27.13	161.19	0.00	0.00	0.00	100.00
51.737	0.964	-20.15	255.66	0.00	0.00	0.00	100.00
52.701	0.694	-20.15	190.94	0.00	0.00	0.00	100.00
53.395	0.964	-14.20	274.07	0.00	0.00	0.00	100.00
54.360	0.429	-14.20	124.84	0.00	0.00	0.00	100.00
54.789	0.211	-7.74	62.15	0.00	0.00	0.00	100.00
55.000	0.964	-7.74	288.18	0.00	0.00	0.00	100.00
55.964	0.419	-7.74	127.74	0.00	0.00	0.00	100.00
56.384	0.964	-2.58	298.54	0.00	0.00	0.00	100.00
57.348	0.814	-2.58	256.71	0.00	0.00	0.00	100.00
58.162	0.964	0.84	309.23	0.00	0.00	0.00	100.00
59.127	0.964	0.84	314.20	0.00	0.00	0.00	100.00
60.091	0.415	0.84	136.67	0.00	0.00	0.00	100.00
60.506	0.964	1.70	321.17	0.00	0.00	0.00	100.00
61.470	0.964	1.70	325.86	0.00	0.00	0.00	100.00
62.435	0.115	1.70	39.34	0.00	0.00	0.00	100.00
62.550	0.964	2.75	330.93	0.00	0.00	0.00	100.00
63.515	0.919	2.75	319.45	0.00	0.00	0.00	100.00
64.434	0.964	3.88	339.22	0.00	0.00	0.00	100.00
65.398	0.827	3.88	294.08	0.00	0.00	0.00	100.00
66.225	0.275	5.06	98.32	0.00	0.00	0.00	100.00
66.500	0.964	5.06	347.44	0.00	0.00	0.00	100.00
67.464	0.552	5.06	200.42	0.00	0.00	0.00	100.00
68.016	0.484	6.17	176.64	0.00	0.00	0.00	100.00
68.500	0.964	6.17	354.28	0.00	0.00	0.00	100.00
69.464	0.306	6.17	112.86	0.00	0.00	0.00	100.00
69.770	0.964	7.27	357.58	0.00	0.00	0.00	100.00
70.735	0.839	7.27	313.09	0.00	0.00	0.00	100.00
71.574	0.964	8.31	361.67	0.00	0.00	0.00	100.00
72.538	0.904	8.31	340.58	0.00	0.00	0.00	100.00
73.442	0.964	9.23	365.25	0.00	0.00	0.00	100.00
74.406	0.964	9.23	366.87	0.00	0.00	0.00	100.00
75.371	0.089	9.23	33.91	0.00	0.00	0.00	100.00
75.460	0.964	8.05	368.84	0.00	0.00	0.00	100.00
76.424	0.881	8.05	338.76	0.00	0.00	0.00	100.00
77.305	0.964	6.70	372.93	0.00	0.00	0.00	100.00
78.270	0.230	6.70	89.40	0.00	0.00	0.00	100.00
78.500	0.586	6.70	227.87	0.00	0.00	0.00	100.00
79.086	0.964	5.25	377.02	0.00	0.00	0.00	100.00
80.050	0.757	5.25	297.71	0.00	0.00	0.00	100.00
80.807	0.964	3.78	381.39	0.00	0.00	0.00	100.00
81.772	0.817	3.78	325.17	0.00	0.00	0.00	100.00
82.589	0.911	2.30	365.47	0.00	0.00	0.00	100.00

83.500	0.819	2.30	330.79	0.00	0.00	0.00	100.00
84.319	0.964	0.82	392.53	0.00	0.00	0.00	100.00
85.283	0.835	0.82	342.71	0.00	0.00	0.00	100.00
86.119	0.964	-0.55	399.23	0.00	0.00	0.00	100.00
87.083	0.417	-0.55	173.85	0.00	0.00	0.00	100.00
87.500	0.505	-0.55	211.31	0.00	0.00	0.00	100.00
88.005	0.964	-1.73	406.18	0.00	0.00	0.00	100.00
88.969	0.964	-1.73	409.61	0.00	0.00	0.00	100.00
89.934	0.165	-1.73	70.34	0.00	0.00	0.00	100.00
90.098	0.964	-0.15	413.36	0.00	0.00	0.00	100.00
91.063	0.886	-0.15	382.38	0.00	0.00	0.00	100.00
91.949	0.964	1.73	418.62	0.00	0.00	0.00	100.00
92.914	0.797	1.73	347.81	0.00	0.00	0.00	100.00
93.711	0.289	3.81	126.48	0.00	0.00	0.00	100.00
94.000	0.964	3.81	424.30	0.00	0.00	0.00	100.00
94.964	0.425	3.81	188.43	0.00	0.00	0.00	100.00
95.390	0.964	5.87	430.23	0.00	0.00	0.00	100.00
96.354	0.801	5.87	359.96	0.00	0.00	0.00	100.00
97.155	0.964	7.88	436.61	0.00	0.00	0.00	100.00
98.119	0.703	7.88	320.30	0.00	0.00	0.00	100.00
98.822	0.964	9.90	441.44	0.00	0.00	0.00	100.00
99.787	0.213	9.90	97.88	0.00	0.00	0.00	100.00
100.000	0.557	9.90	255.98	0.00	0.00	0.00	100.00
100.557	0.964	11.72	442.51	0.00	0.00	0.00	100.00
101.522	0.478	11.72	219.14	0.00	0.00	0.00	100.00
102.000	0.351	11.72	160.95	0.00	0.00	0.00	100.00
102.351	0.964	13.27	442.68	0.00	0.00	0.00	100.00
103.316	0.964	13.27	443.70	0.00	0.00	0.00	100.00
104.280	0.056	13.27	25.65	0.00	0.00	0.00	100.00
104.336	0.964	13.44	444.74	0.00	0.00	0.00	100.00
105.300	0.948	13.44	437.94	0.00	0.00	0.00	100.00
106.248	0.964	13.62	446.60	0.00	0.00	0.00	100.00
107.212	0.894	13.62	415.01	0.00	0.00	0.00	100.00
108.107	0.964	13.80	448.28	0.00	0.00	0.00	100.00
109.071	0.429	13.80	199.56	0.00	0.00	0.00	100.00
109.500	0.443	13.80	206.43	0.00	0.00	0.00	100.00
109.943	0.964	13.98	450.75	0.00	0.00	0.00	100.00
110.907	0.849	13.98	398.24	0.00	0.00	0.00	100.00
111.756	0.964	14.17	453.96	0.00	0.00	0.00	100.00
112.721	0.883	14.17	416.92	0.00	0.00	0.00	100.00
113.603	0.964	14.35	457.10	0.00	0.00	0.00	100.00
114.568	0.916	14.35	435.85	0.00	0.00	0.00	100.00
115.484	0.964	14.52	460.17	0.00	0.00	0.00	100.00
116.449	0.964	14.52	461.71	0.00	0.00	0.00	100.00
117.413	0.033	14.52	15.61	0.00	0.00	0.00	100.00
117.446	0.054	14.69	26.02	0.00	0.00	0.00	100.00
117.500	0.964	14.69	462.75	0.00	0.00	0.00	100.00
118.464	0.964	14.69	463.04	0.00	0.00	0.00	100.00
119.429	0.094	14.69	45.13	0.00	0.00	0.00	100.00
119.523	0.964	17.22	462.91	0.00	0.00	0.00	100.00
120.487	0.802	17.22	384.30	0.00	0.00	0.00	100.00
121.289	0.964	20.32	461.21	0.00	0.00	0.00	100.00
122.253	0.717	20.32	341.92	0.00	0.00	0.00	100.00
122.971	0.964	23.72	457.49	0.00	0.00	0.00	100.00
123.935	0.611	23.72	288.38	0.00	0.00	0.00	100.00
124.546	0.964	26.87	451.84	0.00	0.00	0.00	100.00
125.511	0.768	26.87	356.89	0.00	0.00	0.00	100.00
126.279	0.964	29.87	443.40	0.00	0.00	0.00	100.00
127.244	0.631	29.87	286.99	0.00	0.00	0.00	100.00
127.874	0.964	32.74	433.45	0.00	0.00	0.00	100.00
128.839	0.161	32.74	71.74	0.00	0.00	0.00	100.00
129.000	0.571	32.74	252.33	0.00	0.00	0.00	100.00
129.571	0.964	35.10	419.55	0.00	0.00	0.00	100.00
130.535	0.825	35.10	351.66	0.00	0.00	0.00	100.00
131.360	0.964	36.91	402.18	0.00	0.00	0.00	100.00
132.324	0.964	36.91	392.15	0.00	0.00	0.00	100.00

133.289	0.124	36.91	49.81	0.00	0.00	0.00	100.00
133.413	0.964	37.08	380.78	0.00	0.00	0.00	100.00
134.378	0.964	37.08	370.67	0.00	0.00	0.00	100.00
135.342	0.025	37.08	9.63	0.00	0.00	0.00	100.00
135.367	0.964	37.26	360.23	0.00	0.00	0.00	100.00
136.332	0.916	37.26	332.82	0.00	0.00	0.00	100.00
137.248	0.964	37.45	340.27	0.00	0.00	0.00	100.00
138.213	0.882	37.45	302.32	0.00	0.00	0.00	100.00
139.095	0.964	37.63	320.48	0.00	0.00	0.00	100.00
140.059	0.849	37.63	273.50	0.00	0.00	0.00	100.00
140.908	0.964	37.81	300.86	0.00	0.00	0.00	100.00
141.873	0.853	37.81	257.31	0.00	0.00	0.00	100.00
142.726	0.964	37.99	281.03	0.00	0.00	0.00	100.00
143.690	0.857	37.99	240.76	0.00	0.00	0.00	100.00
144.547	0.953	38.17	257.97	0.00	0.00	0.00	100.00
145.500	0.882	38.17	229.39	0.00	0.00	0.00	100.00
146.382	0.964	38.34	240.14	0.00	0.00	0.00	100.00
147.347	0.887	38.34	210.97	0.00	0.00	0.00	100.00
148.233	0.964	38.04	218.92	0.00	0.00	0.00	100.00
149.198	0.861	38.04	186.22	0.00	0.00	0.00	100.00
150.059	0.964	37.73	198.31	0.00	0.00	0.00	100.00
151.023	0.846	37.73	165.19	0.00	0.00	0.00	100.00
151.870	0.964	37.41	178.17	0.00	0.00	0.00	100.00

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
alpha(°) : Angolo pendenza base concio
W(kN/m) : Forza peso concio
ru(-) : Coefficiente locale pressione interstiziale
U(kPa) : Pressione totale dei pori base concio
phi'(°) : Angolo di attrito efficace base concio
c'/Cu (kPa) : Coesione efficace o Resistenza al taglio in condizioni non drenate

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TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	ht (m)	yt (m)	yt' (--)	E(x) (kN/m)	T(x) (kN/m)	E' (kN)	rho(x) (--)	FS_qFEM (--)	FS_srmFEM (--)		
37.969	0.000	221.159	-0.534	0.0000000000E+000	0.0000000000E+000	4.1842102449E+002	0.047	1.742	1.965		
38.934	0.235	220.672	-0.534	3.1990697961E+002	4.1803948169E-001	2.4499463791E+002	0.047	1.742	1.965		
39.898	0.414	220.129	-0.508	4.7255739698E+002	3.0404412787E+000	1.5373228601E+002	0.047	0.874	0.985		
40.862	0.699	219.692	-0.444	6.1643317925E+002	8.9164376243E+000	1.5979196584E+002	0.047	0.713	0.802		
41.500	0.901	219.417	-0.445	7.2278936712E+002	1.6422873297E+001	1.7943728581E+002	0.067	0.677	0.760		
42.464	1.186	218.979	-0.449	9.1426939718E+002	3.3990763961E+001	2.1038354699E+002	0.109	0.661	0.736		
43.429	1.481	218.552	-0.440	1.1285872335E+003	5.7673926017E+001	2.3463756790E+002	0.151	0.671	0.740		
44.393	1.781	218.130	-0.427	1.3668495812E+003	8.7125601621E+001	2.4872442291E+002	0.194	0.701	0.760		
44.938	1.967	217.908	-0.391	1.5027912415E+003	1.0502124324E+002	2.4089932216E+002	0.216	0.725	0.775		
45.902	2.287	217.540	-0.368	1.7201397544E+003	1.3277045994E+002	2.2677202063E+002	0.240	0.758	0.792		
46.867	2.632	217.198	-0.337	1.9401999811E+003	1.6263678495E+002	2.2464130797E+002	0.263	0.814	0.823		
47.831	3.013	216.891	-0.315	2.1534386734E+003	1.9306157697E+002	2.2976012399E+002	0.282	0.893	0.864		
48.108	3.127	216.807	-0.284	2.2177800278E+003	2.0277074755E+002	2.3055180376E+002	0.289	0.924	0.877		
49.000	3.438	216.559	-0.262	2.4185496325E+003	2.3390165675E+002	2.2302683008E+002	0.309	1.045	0.926		
49.964	3.806	216.320	-0.243	2.6314844682E+003	2.6845826128E+002	2.0960283420E+002	0.329	1.222	0.985		
50.139	3.877	216.282	-0.201	2.6677240976E+003	2.7446067845E+002	2.0658723770E+002	0.332	1.260	0.996		
51.103	4.180	216.091	-0.186	2.8616846746E+003	3.0760415386E+002	1.9637431279E+002	0.350	1.512	1.058		
51.737	4.398	215.984	-0.143	2.9841271364E+003	3.2938123445E+002	1.8383008509E+002	0.361	1.728	1.100		
52.701	4.630	215.862	-0.113	3.1475740225E+003	3.5982068871E+002	1.6088487242E+002	0.377	2.125	1.163		
53.395	4.818	215.796	-0.078	3.2549108061E+003	3.8072866409E+002	1.5235967184E+002	0.387	2.483	1.208		
54.360	5.000	215.733	-0.058	3.3987071582E+003	4.1040894267E+002	1.4479795451E+002	0.403	3.087	1.273		
54.789	5.090	215.714	-0.036	3.4599933274E+003	4.2356664256E+002	1.3190324304E+002	0.410	3.399	1.304		
55.000	5.114	215.710	0.003	3.4867353697E+003	4.2952317961E+002	1.2432355027E+002	0.414	3.524	1.317		
55.964	5.253	215.718	0.016	3.5971017365E+003	4.5572052806E+002	1.0669865994E+002	0.427	3.941	1.377		
56.384	5.324	215.732	0.049	3.6404339791E+003	4.6668190510E+002	1.0216298936E+002	0.433	4.031	1.403		

57.348	5.421	215.786	0.068	3.7363657997E+003	4.9212080997E+002	9.1317031608E+001	0.447	4.121	1.465
58.162	5.525	215.853	0.092	3.8050913379E+003	5.1184422983E+002	7.8969385753E+001	0.457	4.013	1.516
59.127	5.608	215.949	0.114	3.8750047540E+003	5.3329797660E+002	7.1393283348E+001	0.469	3.793	1.575
60.091	5.717	216.073	0.129	3.9427981238E+003	5.5520361286E+002	6.5436611542E+001	0.480	3.568	1.642
60.506	5.765	216.128	0.146	3.9690742719E+003	5.6394658220E+002	6.2982172753E+001	0.484	3.483	1.671
61.470	5.883	216.274	0.153	4.0289968152E+003	5.8440891350E+002	5.6976389082E+001	0.495	3.316	1.746
62.435	6.002	216.422	0.153	4.0789730613E+003	6.0197974464E+002	4.6953044842E+001	0.502	3.238	1.819
62.550	6.016	216.439	0.161	4.0843287976E+003	6.0388932733E+002	4.6250756166E+001	0.503	3.234	1.827
63.515	6.126	216.596	0.160	4.1279722338E+003	6.1956770884E+002	4.1871598315E+001	0.509	3.220	1.904
64.434	6.227	216.740	0.156	4.1634977687E+003	6.3246789312E+002	3.6438907025E+001	0.514	3.233	1.975
65.398	6.311	216.890	0.156	4.1964045810E+003	6.4457740777E+002	3.2304596054E+001	0.517	3.254	2.050
66.225	6.384	217.019	0.154	4.2218349962E+003	6.5409265701E+002	2.7689489017E+001	0.520	3.272	2.114
66.500	6.401	217.060	0.157	4.2291636625E+003	6.5687777613E+002	2.6613786524E+001	0.521	3.277	2.134
67.464	6.469	217.214	0.158	4.2546276078E+003	6.6682297253E+002	2.3113437441E+001	0.523	3.292	2.208
68.016	6.505	217.299	0.156	4.2663428973E+003	6.7166231522E+002	2.0976835173E+001	0.524	3.299	2.247
68.500	6.530	217.376	0.175	4.2763831800E+003	6.7592377774E+002	2.0187325125E+001	0.525	3.303	2.282
69.464	6.602	217.552	0.181	4.2947630888E+003	6.8459353187E+002	1.5408035202E+001	0.527	3.300	2.359
69.770	6.622	217.605	0.179	4.2991200849E+003	6.8693657299E+002	1.3927023116E+001	0.528	3.297	2.380
70.735	6.672	217.779	0.185	4.3115660742E+003	6.9415874567E+002	1.1896484138E+001	0.530	3.277	2.448
71.574	6.725	217.938	0.206	4.3208153318E+003	7.0032445492E+002	1.0539793283E+001	0.532	3.250	2.507
72.538	6.797	218.151	0.221	4.3304496284E+003	7.0792781827E+002	9.2023478243E+000	0.535	3.197	2.581
73.442	6.864	218.351	0.215	4.3380976726E+003	7.1475508990E+002	7.6429117278E+000	0.537	3.137	2.647
74.406	6.909	218.552	0.202	4.3446226750E+003	7.2135367723E+002	6.5836339455E+000	0.540	3.065	2.708
75.371	6.940	218.740	0.194	4.3507965012E+003	7.2751142177E+002	6.4331209496E+000	0.542	2.990	2.759
75.460	6.942	218.756	0.180	4.3513688096E+003	7.2805110548E+002	6.5192343271E+000	0.542	2.983	2.763
76.424	6.980	218.930	0.172	4.3585264156E+003	7.3399678436E+002	8.2138815550E+000	0.544	2.906	2.802
77.305	6.999	219.074	0.160	4.3664020739E+003	7.3938106781E+002	1.0134410525E+001	0.545	2.838	2.828
78.270	7.037	219.225	0.157	4.3774390877E+003	7.4575574808E+002	1.3856785698E+001	0.546	2.767	2.849
78.500	7.046	219.262	0.147	4.3807624682E+003	7.4748246153E+002	1.4543691944E+001	0.546	2.750	2.853
79.086	7.061	219.345	0.146	4.3894437606E+003	7.5169986410E+002	1.6407909677E+001	0.548	2.711	2.860
80.050	7.115	219.488	0.150	4.4077812717E+003	7.5988580612E+002	2.2693947586E+001	0.550	2.647	2.867
80.807	7.161	219.604	0.156	4.4271591608E+003	7.6778742146E+002	2.8775626190E+001	0.553	2.597	2.867
81.772	7.250	219.756	0.155	4.4588303030E+003	7.7988927936E+002	3.5418167046E+001	0.558	2.536	2.856
82.589	7.320	219.880	0.144	4.4895410306E+003	7.9109588427E+002	4.0089681749E+001	0.563	2.490	2.841
83.500	7.409	220.005	0.134	4.5286107012E+003	8.0448441099E+002	4.5764734419E+001	0.568	2.446	2.815
84.319	7.483	220.113	0.127	4.5682242993E+003	8.1749888693E+002	5.0075721708E+001	0.573	2.410	2.784
85.283	7.588	220.232	0.113	4.6184562399E+003	8.3339959917E+002	5.1210873293E+001	0.579	2.372	2.742
86.119	7.661	220.316	0.095	4.6605915794E+003	8.4618888282E+002	5.0943600973E+001	0.583	2.347	2.704
87.083	7.757	220.403	0.089	4.7102680833E+003	8.6075610140E+002	5.3647227836E+001	0.588	2.320	2.656
87.500	7.798	220.440	0.084	4.7330272947E+003	8.6729789928E+002	5.3656359704E+001	0.590	2.307	2.633
88.005	7.843	220.481	0.084	4.7595551457E+003	8.7484425088E+002	5.3822729328E+001	0.592	2.293	2.605
88.969	7.956	220.564	0.085	4.8138114018E+003	8.9025851713E+002	5.4718706070E+001	0.598	2.263	2.545
89.934	8.065	220.644	0.083	4.8650992079E+003	9.0488229969E+002	5.0309472472E+001	0.603	2.233	2.485
90.098	8.083	220.658	0.089	4.8733093062E+003	9.0724639013E+002	4.9843111242E+001	0.603	2.227	2.475
91.063	8.173	220.745	0.095	4.9215152256E+003	9.2148437659E+002	4.8132345491E+001	0.608	2.192	2.412
91.949	8.264	220.833	0.106	4.9626616893E+003	9.3417356156E+002	4.4598043436E+001	0.613	2.155	2.354
92.914	8.342	220.941	0.125	5.0037495647E+003	9.4758640853E+002	3.9870994299E+001	0.618	2.110	2.288
93.711	8.430	221.053	0.145	5.0337390260E+003	9.5848832964E+002	3.5922596137E+001	0.623	2.066	2.230
94.000	8.456	221.098	0.157	5.0439487609E+003	9.6243715037E+002	3.3346862027E+001	0.624	2.048	2.208
94.964	8.543	221.249	0.161	5.0697942928E+003	9.7360458153E+002	2.0091770236E+001	0.625	1.994	2.143
95.390	8.588	221.322	0.184	5.0770794764E+003	9.7771517444E+002	1.5813812061E+001	0.625	1.969	2.115
96.354	8.671	221.505	0.193	5.0894405732E+003	9.8648660340E+002	9.2373171005E+000	0.625	1.910	2.051
97.155	8.747	221.663	0.202	5.0944570109E+003	9.9259080385E+002	1.4954392459E+000	0.625	1.863	2.002
98.119	8.812	221.861	0.206	5.0903579354E+003	9.9746879732E+002	-7.6385712825E+000	0.624	1.810	1.949
98.822	8.860	222.007	0.206	5.0832475561E+003	9.9990917409E+002	-1.2038482281E+001	0.622	1.775	1.914
99.787	8.889	222.204	0.204	5.0690864842E+003	1.0019455895E+003	-1.6704860112E+001	0.620	1.731	1.870
100.000	8.894	222.247	0.204	5.0654305064E+003	1.0022154420E+003	-1.8130219820E+001	0.619	1.723	1.861
100.557	8.911	222.361	0.202	5.0539020994E+003	1.0024357574E+003	-2.2141766468E+001	0.620	1.700	1.838
101.522	8.904	222.553	0.200	5.0301222833E+003	1.0015261881E+003	-2.6454816939E+001	0.621	1.666	1.802
102.000	8.901	222.649	0.203	5.0170414200E+003	1.0006869846E+003	-2.9228054320E+001	0.621	1.651	1.785
102.351	8.900	222.722	0.222	5.0062892959E+003	9.9974489692E+002	-3.2366210633E+001	0.619	1.640	1.773
103.316	8.893	222.942	0.234	4.9704236542E+003	9.9581315979E+002	-3.9198522909E+001	0.615	1.610	1.736
104.280	8.896	223.172	0.239	4.9306813066E+003	9.9089420973E+002	-4.1915706838E+001	0.611	1.582	1.697
104.336	8.896	223.186	0.255	4.9283447361E+003	9.9058595064E+002	-4.2171873119E+001	0.611	1.581	1.695
105.300	8.913	223.433	0.264	4.8840769608E+003	9.8458197237E+002	-4.7752876301E+001	0.606	1.553	1.653
106.248	8.943	223.690	0.280	4.8370983836E+003	9.7785943749E+002	-5.1426599037E+001	0.600	1.526	1.609

107.212	8.988	223.968	0.283	4.7856819100E+003	9.7023040196E+002	-5.2384243889E+001	0.594	1.497	1.562
108.107	9.019	224.215	0.282	4.7395949235E+003	9.6314232756E+002	-5.2517296560E+001	0.589	1.473	1.519
109.071	9.058	224.492	0.277	4.6879117805E+003	9.5505791490E+002	-4.9541302133E+001	0.583	1.446	1.472
109.500	9.062	224.601	0.262	4.6674421870E+003	9.5180585376E+002	-4.9087157416E+001	0.581	1.436	1.454
109.943	9.073	224.720	0.296	4.6450845376E+003	9.4820968383E+002	-5.2904369705E+001	0.577	1.425	1.433
110.907	9.130	225.017	0.319	4.5889655421E+003	9.3907551951E+002	-6.0764312952E+001	0.570	1.397	1.384
111.756	9.199	225.298	0.325	4.5354500195E+003	9.3024445754E+002	-6.2305152977E+001	0.562	1.371	1.340
112.721	9.264	225.606	0.307	4.4761570085E+003	9.2032739633E+002	-6.2917056022E+001	0.554	1.344	1.294
113.603	9.300	225.865	0.291	4.4194624806E+003	9.1066854533E+002	-6.4032157851E+001	0.547	1.319	1.254
114.568	9.332	226.144	0.289	4.3579189757E+003	8.9998086982E+002	-6.2674474254E+001	0.538	1.292	1.216
115.484	9.363	226.410	0.290	4.3014714541E+003	8.8994236161E+002	-6.1978477271E+001	0.531	1.268	1.184
116.449	9.394	226.691	0.291	4.2413055381E+003	8.7882025281E+002	-5.8312135722E+001	0.522	1.240	1.155
117.413	9.426	226.972	0.291	4.1889962126E+003	8.6860483028E+002	-5.3107972684E+001	0.514	1.216	1.134
117.446	9.427	226.981	0.293	4.1872686917E+003	8.6825656492E+002	-5.3265622397E+001	0.514	1.215	1.133
117.500	9.428	226.997	0.269	4.1843616324E+003	8.6766631245E+002	-5.3899341987E+001	0.514	1.213	1.132
118.464	9.434	227.255	0.259	4.1271088847E+003	8.5550553782E+002	-6.2187727786E+001	0.506	1.184	1.114
119.429	9.422	227.497	0.252	4.0644109632E+003	8.4144741253E+002	-7.2796285201E+001	0.498	1.152	1.098
119.523	9.423	227.522	0.266	4.0574993964E+003	8.3985343039E+002	-7.3626498805E+001	0.497	1.148	1.096
120.487	9.380	227.778	0.277	3.9857829025E+003	8.2296118718E+002	-8.1476479810E+001	0.487	1.112	1.081
121.289	9.366	228.012	0.311	3.9157291203E+003	8.0588379968E+002	-9.4417927082E+001	0.478	1.080	1.069
122.253	9.324	228.328	0.352	3.8165157694E+003	7.8124019808E+002	-1.1691781909E+002	0.465	1.041	1.056
122.971	9.334	228.603	0.391	3.7251470615E+003	7.5826442350E+002	-1.3221849033E+002	0.452	1.011	1.046
123.935	9.293	228.986	0.388	3.5913393527E+003	7.2451245420E+002	-1.4506561853E+002	0.435	0.974	1.035
124.546	9.253	229.215	0.399	3.5002131184E+003	7.0157910828E+002	-1.4541700557E+002	0.423	0.953	1.029
125.511	9.165	229.615	0.407	3.3655318651E+003	6.6787948240E+002	-1.4210698225E+002	0.407	0.930	1.024
126.279	9.081	229.921	0.404	3.2548326341E+003	6.4046986848E+002	-1.4940571798E+002	0.393	0.914	1.021
127.244	8.922	230.315	0.407	3.1042774881E+003	6.0404368432E+002	-1.5554001181E+002	0.376	0.903	1.022
127.874	8.814	230.570	0.411	3.0063917249E+003	5.8073075653E+002	-1.5724227001E+002	0.364	0.898	1.025
128.839	8.594	230.970	0.418	2.8516850533E+003	5.4457567552E+002	-1.6686045079E+002	0.347	0.895	1.030
129.000	8.561	231.041	0.435	2.8246268912E+003	5.3832295901E+002	-1.6781959993E+002	0.344	0.894	1.032
129.571	8.442	231.289	0.438	2.7291040821E+003	5.1645328957E+002	-1.6777697702E+002	0.334	0.895	1.037
130.535	8.188	231.713	0.443	2.5666848381E+003	4.7985622350E+002	-1.6890713406E+002	0.317	0.899	1.048
131.360	7.977	232.081	0.447	2.4269896795E+003	4.4881304210E+002	-1.6774828837E+002	0.302	0.905	1.058
132.324	7.684	232.512	0.449	2.2669945825E+003	4.1383756062E+002	-1.6489721973E+002	0.285	0.914	1.072
133.289	7.395	232.948	0.450	2.1089280207E+003	3.7970275446E+002	-1.5488233413E+002	0.269	0.925	1.087
133.413	7.355	233.002	0.460	2.0898210502E+003	3.7562018360E+002	-1.5462567321E+002	0.267	0.927	1.089
134.378	7.074	233.449	0.466	1.9339226123E+003	3.4241855503E+002	-1.5954305620E+002	0.250	0.939	1.106
135.342	6.796	233.901	0.468	1.7820867586E+003	3.1038346946E+002	-1.5606557564E+002	0.233	0.953	1.122
135.367	6.789	233.913	0.485	1.7781230337E+003	3.0955065957E+002	-1.5601102682E+002	0.232	0.953	1.123
136.332	6.523	234.380	0.477	1.6283370014E+003	2.7825053373E+002	-1.4841251059E+002	0.215	0.968	1.139
137.248	6.255	234.809	0.484	1.4983451396E+003	2.5138213913E+002	-1.4363447747E+002	0.199	0.981	1.155
138.213	5.999	235.292	0.507	1.3580169277E+003	2.2252098710E+002	-1.4445964685E+002	0.182	0.997	1.172
139.095	5.778	235.746	0.531	1.2313823384E+003	1.9660167234E+002	-1.4483686704E+002	0.165	1.011	1.188
140.059	5.560	236.273	0.539	1.0902927314E+003	1.6788855326E+002	-1.4058555101E+002	0.146	1.029	1.207
140.908	5.356	236.723	0.530	9.7520797790E+002	1.4471654461E+002	-1.3269008403E+002	0.129	1.045	1.225
141.873	5.119	237.234	0.522	8.5038320278E+002	1.1996333566E+002	-1.2398959599E+002	0.111	1.065	1.246
142.726	4.895	237.672	0.497	7.4874027125E+002	1.0025441891E+002	-1.1254433172E+002	0.096	1.083	1.267
143.690	4.607	238.137	0.481	6.4743559985E+002	8.1323630686E+001	-1.0138293665E+002	0.081	1.107	1.293
144.547	4.348	238.548	0.484	5.6336280974E+002	6.6270022416E+001	-9.5586198228E+001	0.068	1.131	1.320
145.500	4.064	239.013	0.483	4.7495818695E+002	5.1331733473E+001	-9.1454514609E+001	0.055	1.160	1.351
146.382	3.792	239.434	0.482	3.9532013675E+002	3.7965836516E+001	-8.9003274804E+001	0.047	1.190	1.384
147.347	3.497	239.903	0.483	3.1079985175E+002	2.4509328274E+001	-8.2625024119E+001	0.047	1.230	1.428
148.233	3.222	240.328	0.486	2.4162962416E+002	1.4735974733E+001	-7.4083293087E+001	0.047	1.276	1.479
149.198	2.940	240.801	0.498	1.7430802817E+002	6.8151912685E+000	-6.4772184885E+001	0.047	1.337	1.546
150.059	2.703	241.238	0.539	1.2240471777E+002	2.5713614281E+000	-5.7095729789E+001	0.047	1.406	1.621
151.023	2.505	241.786	0.554	7.0778614336E+001	5.7724919443E-001	-4.6400646453E+001	0.047	1.492	1.714
151.870	2.306	242.242	0.554	3.6797961596E+001	1.7051871108E-001	-3.9213687902E+001	0.047	1.570	1.797

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio

ht(m) : Altezza linea di thrust da nodo sinistro base concio

yt(m) : coordinata Y linea di trust

yt'(-) : gradiente pendenza locale linea di trust

E(x)(kN/m) : Forza Normale interconcio

T(x)(kN/m) : Forza Tangenziale interconcio

E' (kN) : derivata Forza normale interconcio
Rho(x) (-) : fattore mobilizzazione resistenza al taglio verticale interconcio ZhU et al.(2003)
FS_qFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by qFEM
FS_srmFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by SRM Procedure
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TABELLA SFORZI DI TAGLIO DISTRIBUITI LUNGO SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	dl (m)	alpha (°)	TauStress (kPa)	TauF (kN/m)	TauStrength (kPa)	TauS (kN/m)
37.969	0.964	1.205	-36.826	-4.353	-5.244	100.290	120.833
38.934	0.964	1.205	-36.826	-13.058	-15.733	101.821	122.677
39.898	0.964	1.205	-36.826	-21.764	-26.222	104.080	125.399
40.862	0.638	0.797	-36.826	-28.994	-23.095	107.883	85.934
41.500	0.964	1.205	-36.826	-36.280	-43.711	112.197	135.179
42.464	0.964	1.205	-36.826	-45.095	-54.332	116.443	140.294
43.429	0.964	1.205	-36.826	-53.911	-64.954	120.448	145.120
44.393	0.544	0.680	-36.826	-60.807	-41.362	122.007	82.991
44.938	0.964	1.185	-35.495	-66.388	-78.640	118.983	140.942
45.902	0.964	1.185	-35.495	-74.739	-88.532	120.431	142.657
46.867	0.964	1.185	-35.495	-83.089	-98.424	120.813	143.110
47.831	0.277	0.340	-35.495	-88.464	-30.102	123.122	41.895
48.108	0.892	1.053	-32.134	-88.160	-92.858	121.940	128.438
49.000	0.964	1.139	-32.134	-95.074	-108.279	122.524	139.542
49.964	0.175	0.206	-32.134	-99.312	-20.475	121.612	25.073
50.139	0.964	1.084	-27.128	-91.621	-99.284	119.463	129.454
51.103	0.634	0.712	-27.128	-96.195	-68.479	119.467	85.046
51.737	0.964	1.027	-20.155	-77.571	-79.691	114.248	117.371
52.701	0.694	0.739	-20.155	-80.527	-59.515	113.603	83.962
53.395	0.964	0.995	-14.205	-58.254	-57.953	110.217	109.648
54.360	0.429	0.442	-14.205	-59.663	-26.398	110.184	48.751
54.789	0.211	0.213	-7.742	-29.137	-6.217	105.249	22.456
55.000	0.964	0.973	-7.742	-29.618	-28.827	105.060	102.255
55.964	0.419	0.423	-7.742	-30.194	-12.778	104.870	44.381
56.384	0.964	0.965	-2.582	-3.117	-3.009	101.656	98.140
57.348	0.814	0.815	-2.582	-3.175	-2.587	101.522	82.716
58.162	0.964	0.965	0.844	15.940	15.375	99.543	96.012
59.127	0.964	0.965	0.844	16.196	15.622	99.533	96.003
60.091	0.415	0.415	0.844	16.380	6.795	99.567	41.304
60.506	0.964	0.965	1.703	21.540	20.783	99.120	95.636
61.470	0.964	0.965	1.703	21.855	21.087	99.244	95.756
62.435	0.115	0.116	1.703	22.031	2.546	99.314	11.476
62.550	0.964	0.966	2.751	28.430	27.450	98.912	95.504
63.515	0.919	0.920	2.751	28.794	26.498	99.061	91.162
64.434	0.964	0.967	3.878	35.990	34.789	98.817	95.521
65.398	0.827	0.829	3.878	36.381	30.159	98.917	82.000
66.225	0.275	0.276	5.062	43.879	12.103	98.757	27.240
66.500	0.964	0.968	5.062	44.174	42.770	98.735	95.595
67.464	0.552	0.554	5.062	44.536	24.671	98.924	54.800
68.016	0.484	0.487	6.175	51.679	25.147	98.685	48.020
68.500	0.964	0.970	6.175	51.992	50.435	98.658	95.704
69.464	0.306	0.308	6.175	52.248	16.067	98.856	30.400
69.770	0.964	0.972	7.274	59.335	57.688	98.687	95.949
70.735	0.839	0.846	7.274	59.688	50.510	98.713	83.534
71.574	0.964	0.975	8.307	66.461	64.776	98.427	95.932
72.538	0.904	0.913	8.307	66.805	60.999	98.492	89.933
73.442	0.964	0.977	9.226	72.852	71.182	98.489	96.230
74.406	0.964	0.977	9.226	73.175	71.497	98.590	96.329
75.371	0.089	0.090	9.226	73.352	6.608	98.660	8.888
75.460	0.964	0.974	8.049	66.146	64.427	98.807	96.240
76.424	0.881	0.890	8.049	66.492	59.174	98.818	87.942
77.305	0.964	0.971	6.702	58.169	56.486	98.931	96.068
78.270	0.230	0.232	6.702	58.408	13.542	98.787	22.904
78.500	0.586	0.590	6.702	58.540	34.515	98.835	58.272
79.086	0.964	0.968	5.247	49.171	47.621	98.921	95.803

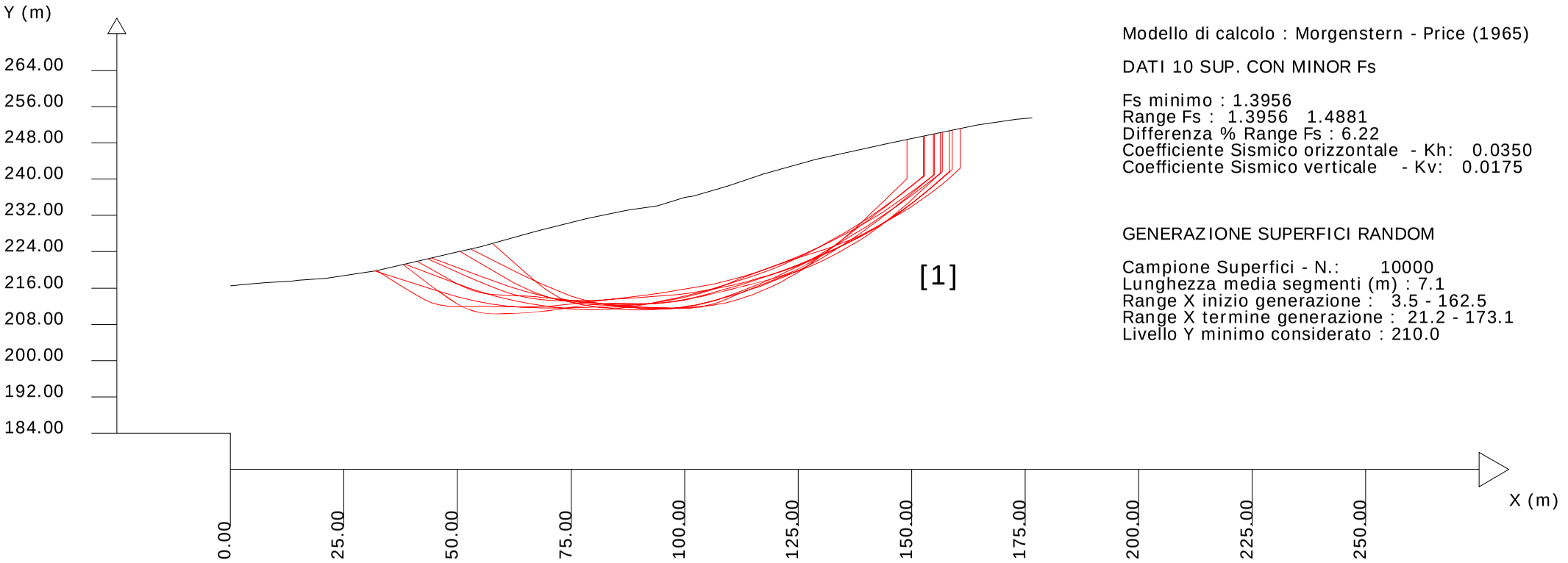
80.050	0.757	0.761	5.247	49.440	37.604	98.674	75.052
80.807	0.964	0.967	3.785	39.827	38.494	98.847	95.538
81.772	0.817	0.819	3.785	40.096	32.820	98.739	80.819
82.589	0.911	0.912	2.295	30.056	27.416	99.180	90.469
83.500	0.819	0.820	2.295	30.275	24.815	99.113	81.236
84.319	0.964	0.965	0.819	20.062	19.350	99.671	96.135
85.283	0.835	0.835	0.819	20.227	16.894	99.694	83.266
86.119	0.964	0.964	-0.549	10.523	10.149	100.202	96.642
87.083	0.417	0.417	-0.549	10.597	4.420	100.210	41.794
87.500	0.505	0.505	-0.549	10.640	5.372	100.200	50.586
88.005	0.964	0.965	-1.726	2.047	1.975	100.672	97.134
88.969	0.964	0.965	-1.726	2.064	1.992	100.637	97.101
89.934	0.165	0.165	-1.726	2.074	0.342	100.603	16.587
90.098	0.964	0.964	-0.150	13.882	13.388	100.054	96.495
91.063	0.886	0.886	-0.150	13.975	12.385	100.052	88.666
91.949	0.964	0.965	1.734	28.304	27.310	99.413	95.920
92.914	0.797	0.798	1.734	28.445	22.691	99.423	79.310
93.711	0.289	0.290	3.808	44.233	12.818	98.737	28.613
94.000	0.964	0.967	3.808	44.486	42.999	98.929	95.621
94.964	0.425	0.426	3.808	44.815	19.096	99.106	42.230
95.390	0.964	0.970	5.873	60.856	59.000	98.708	95.699
96.354	0.801	0.805	5.873	61.330	49.363	98.917	79.616
97.155	0.964	0.974	7.880	77.025	74.992	99.041	96.428
98.119	0.703	0.710	7.880	77.482	55.015	99.342	70.537
98.822	0.964	0.979	9.897	93.047	91.093	99.501	97.411
99.787	0.213	0.216	9.897	93.345	20.198	99.701	21.573
100.000	0.557	0.566	9.897	93.382	52.822	99.907	56.513
100.557	0.964	0.985	11.717	106.636	105.031	100.262	98.753
101.522	0.478	0.489	11.717	106.475	52.015	100.487	49.090
102.000	0.351	0.359	11.717	106.489	38.202	100.744	36.141
102.351	0.964	0.991	13.271	117.775	116.701	101.271	100.348
103.316	0.964	0.991	13.271	118.044	116.968	101.590	100.664
104.280	0.056	0.057	13.271	118.187	6.762	101.726	5.821
104.336	0.964	0.992	13.439	119.507	118.500	101.964	101.105
105.300	0.948	0.974	13.439	119.761	116.689	102.238	99.615
106.248	0.964	0.992	13.616	121.259	120.327	102.526	101.738
107.212	0.894	0.920	13.616	121.493	111.818	102.530	94.365
108.107	0.964	0.993	13.796	122.992	122.140	102.709	101.998
109.071	0.429	0.441	13.796	123.156	54.373	102.451	45.232
109.500	0.443	0.456	13.796	123.319	56.244	102.624	46.805
109.943	0.964	0.994	13.981	124.975	124.208	103.099	102.466
110.907	0.849	0.875	13.981	125.424	109.740	103.403	90.472
111.756	0.964	0.995	14.168	127.195	126.519	103.406	102.856
112.721	0.883	0.910	14.168	127.640	116.196	103.624	94.334
113.603	0.964	0.995	14.348	129.361	128.776	103.713	103.244
114.568	0.916	0.946	14.348	129.801	122.790	103.670	98.070
115.484	0.964	0.996	14.524	131.491	130.999	103.907	103.519
116.449	0.964	0.996	14.524	131.928	131.435	103.589	103.202
117.413	0.033	0.034	14.524	132.155	4.444	103.625	3.485
117.446	0.054	0.056	14.686	133.334	7.477	103.724	5.816
117.500	0.964	0.997	14.686	133.387	132.987	104.316	104.002
118.464	0.964	0.997	14.686	133.471	133.070	104.989	104.674
119.429	0.094	0.097	14.686	133.517	12.970	105.806	10.278
119.523	0.964	1.010	17.221	151.059	152.522	106.913	107.948
120.487	0.802	0.839	17.221	150.874	126.621	108.408	90.981
121.289	0.964	1.028	20.318	170.441	175.283	111.612	114.783
122.253	0.717	0.765	20.318	169.874	129.949	114.555	87.631
122.971	0.964	1.053	23.723	188.634	198.715	117.990	124.295
123.935	0.611	0.668	23.723	187.601	125.263	119.285	79.647
124.546	0.964	1.081	26.869	201.933	218.319	119.661	129.371
125.511	0.768	0.861	26.869	200.191	172.443	120.071	103.428
126.279	0.964	1.112	29.872	210.666	234.302	122.766	136.539
127.244	0.631	0.727	29.872	208.457	151.652	122.275	88.954
127.874	0.964	1.147	32.743	215.593	247.202	123.802	141.952
128.839	0.161	0.192	32.743	213.584	40.914	124.639	23.876
129.000	0.571	0.678	32.743	212.122	143.907	124.333	84.349

129.571	0.964	1.179	35.098	214.844	253.250	124.913	147.243
130.535	0.825	1.008	35.098	210.514	212.267	124.705	125.743
131.360	0.964	1.206	36.915	209.591	252.817	124.305	149.941
132.324	0.964	1.206	36.915	204.363	246.511	123.721	149.237
133.289	0.124	0.155	36.915	201.412	31.312	122.013	18.968
133.413	0.964	1.209	37.082	198.718	240.229	123.111	148.828
134.378	0.964	1.209	37.082	193.437	233.846	122.299	147.847
135.342	0.025	0.032	37.082	190.728	6.073	122.008	3.885
135.367	0.964	1.212	37.262	188.270	228.141	121.826	147.625
136.332	0.916	1.151	37.262	183.066	210.778	119.718	137.841
137.248	0.964	1.215	37.445	178.096	216.340	120.160	145.963
138.213	0.882	1.111	37.445	172.930	192.210	119.787	133.142
139.095	0.964	1.218	37.634	167.984	204.575	120.092	146.251
140.059	0.849	1.072	37.634	162.856	174.584	118.420	126.949
140.908	0.964	1.221	37.814	157.915	192.780	117.349	143.258
141.873	0.853	1.080	37.814	152.721	164.872	115.621	124.820
142.726	0.964	1.224	37.992	147.694	180.740	113.289	138.637
143.690	0.857	1.087	37.992	142.436	154.840	111.896	121.641
144.547	0.953	1.212	38.168	137.357	166.519	110.627	134.114
145.500	0.882	1.122	38.168	131.928	148.070	110.271	123.762
146.382	0.964	1.230	38.340	126.510	155.556	109.474	134.610
147.347	0.887	1.130	38.340	120.900	136.665	107.485	121.500
148.233	0.964	1.225	38.038	115.092	140.930	105.563	129.262
149.198	0.861	1.093	38.038	109.652	119.877	103.338	112.975
150.059	0.964	1.219	37.726	104.018	126.831	101.397	123.635
151.023	0.846	1.070	37.726	98.715	105.648	100.325	107.370
151.870	0.964	1.214	37.406	93.227	113.187	100.119	121.555

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
dl(m) : lunghezza base concio
alpha(°) : Angolo pendenza base concio
TauStress(kPa) : Sforzo di taglio su base concio
TauF (kN/m) : Forza di taglio su base concio
TauStrength(kPa) : Resistenza al taglio su base concio
TauS (kN/m) : Forza resistente al taglio su base concio

SSAP 5.0.2 (2021) - Slope Stability Analysis Program
Software by Dr.Geol. L.Borselli - www.lorenzo-borselli.eu
SSAP/DXF generator rel. 2.0 (2020)

Data : 18/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Morgenstern - Price (1965)

DATI 10 SUP. CON MINOR Fs

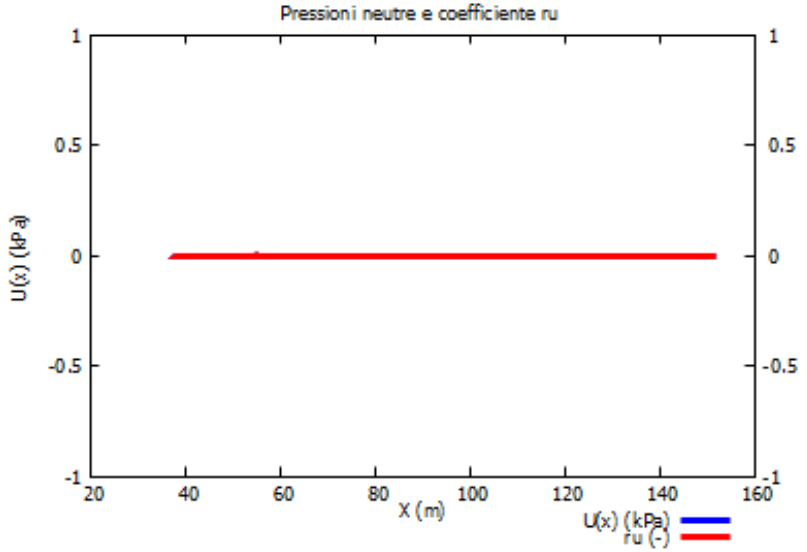
Fs minimo : 1.3956
Range Fs : 1.3956 1.4881
Differenza % Range Fs : 6.22
Coefficiente Sismico orizzontale - Kh: 0.0350
Coefficiente Sismico verticale - Kv: 0.0175

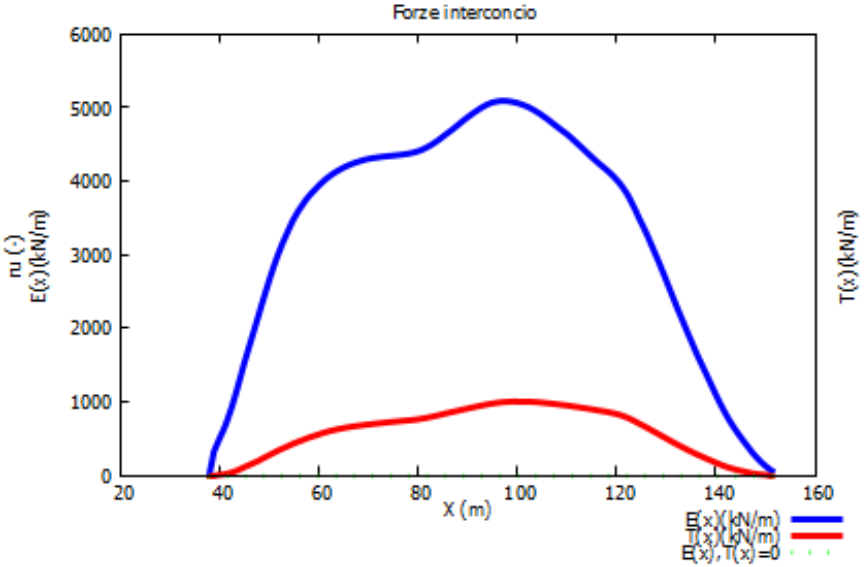
GENERAZIONE SUPERFICI RANDOM

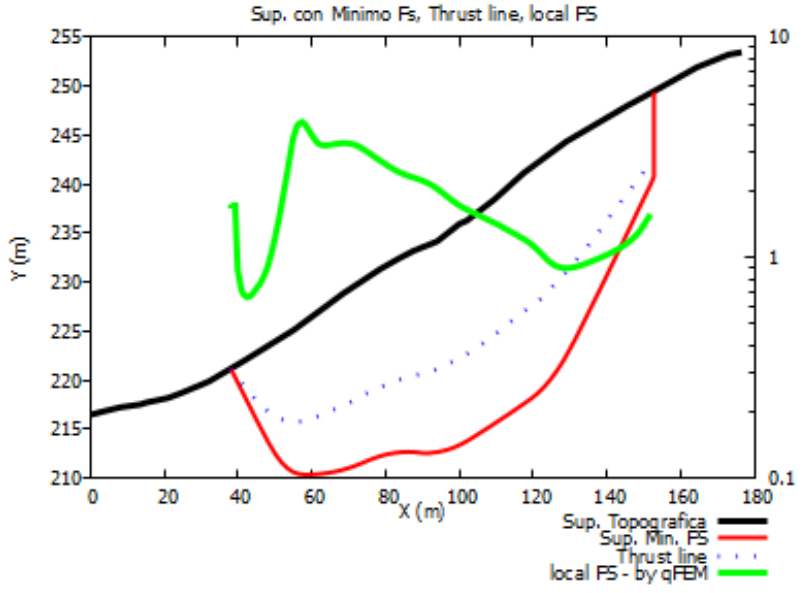
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 7.1
Range X inizio generazione : 3.5 - 162.5
Range X termine generazione : 21.2 - 173.1
Livello Y minimo considerato : 210.0

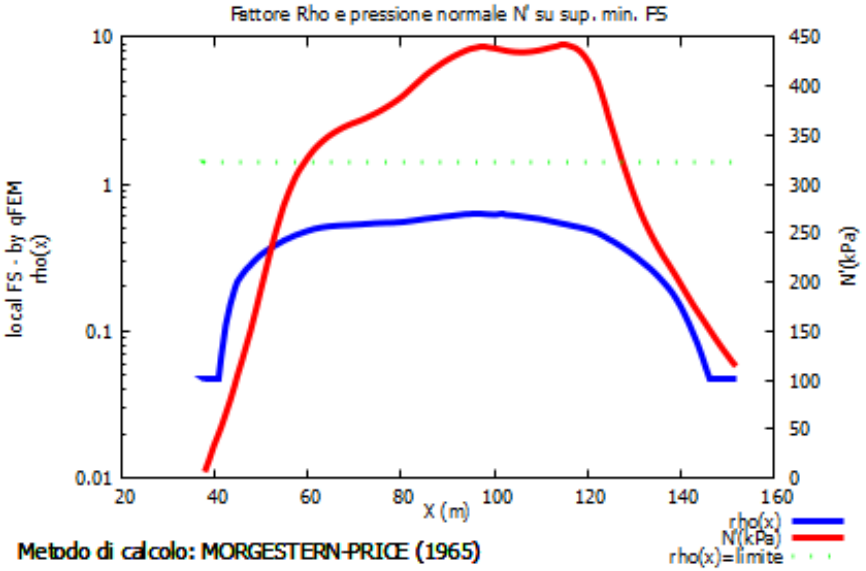
Parametri Geotecnici degli strati # ----------

N.	phi`	C`	Cu	Gamm	GammSat	sgci	GSI	mi	D
..	deg	kPa	kPa	kN/m3	kN/m3	MPa	..	..	..
1	0	0	100.00	20.00	22.00	0	0	0	0





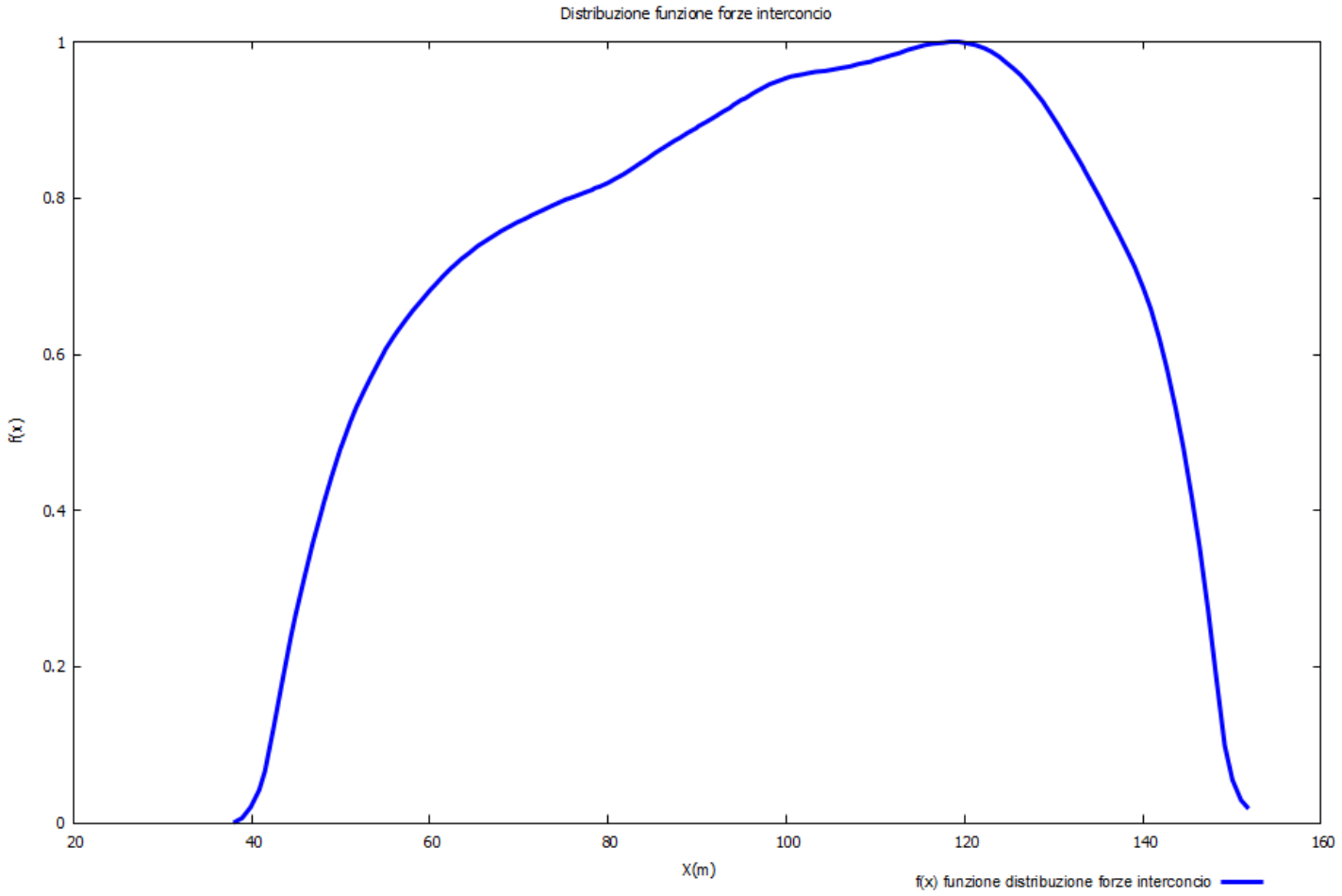




Metodo di calcolo: MORGESTERN-PRICE (1965)

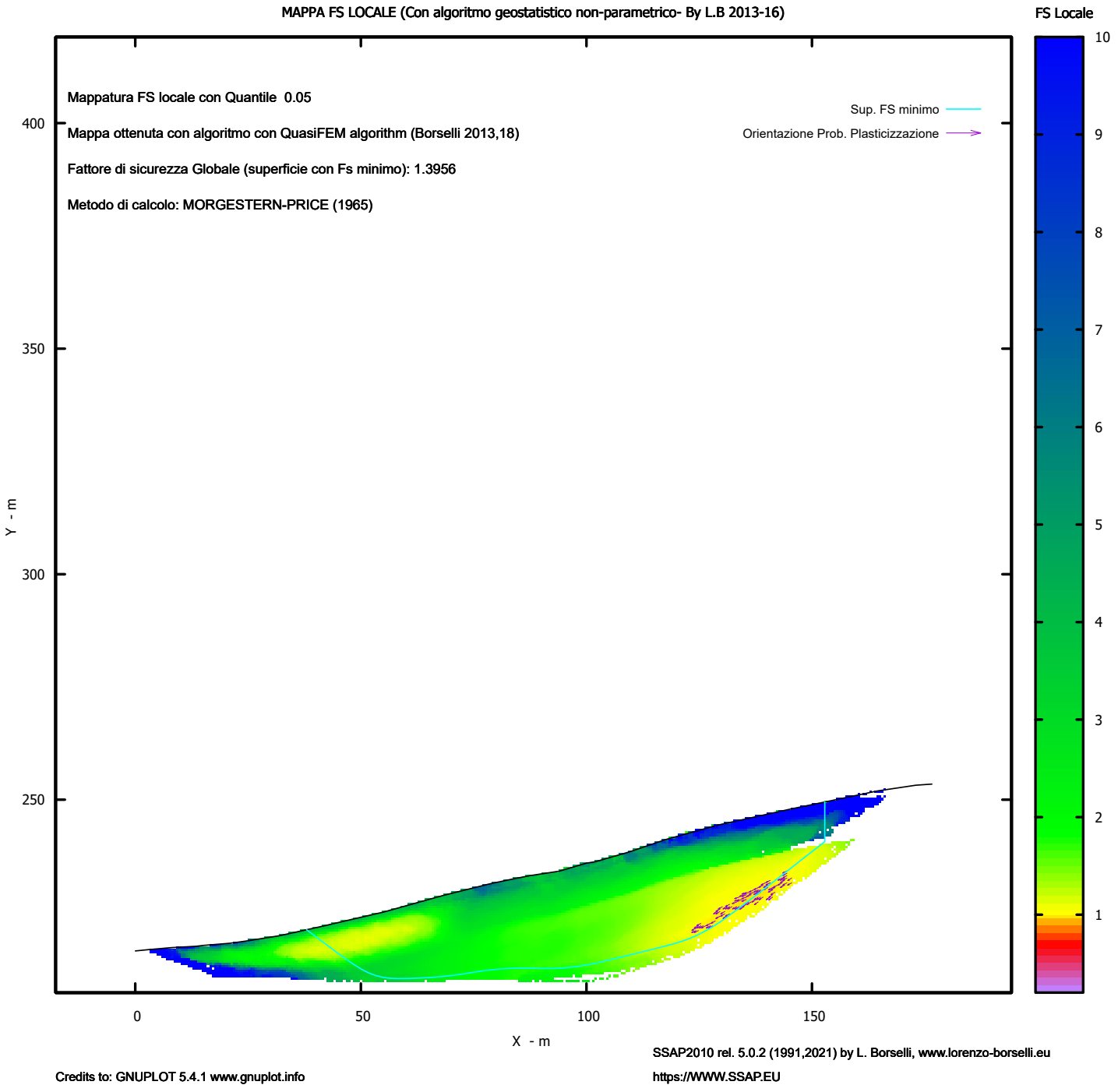
SSAP2010 (versione 5.0.2 - 2021) - DISTRIBUZIONE FORZE e PRESSIONI

18/11/21 15:05



Graphic rendering,Credits to: GNUPLOT 5.4.1 www.gnuplot.info

SSAP2010 rel. 5.0.2 (1991,2021) by L. Borselli - www.ssap.eu


MAPPA FS LOCALE (Con algoritmo geostatistico non-parametrico- By L.B 2013-16)
FS Locale
Mappatura FS locale con Quantile 0.05
Mappa ottenuta con algoritmo con QuasiFEM algorithm (Borselli 2013,18)
Fattore di sicurezza Globale (superficie con Fs minimo): 1.3956
Metodo di calcolo: MORGESTERN-PRICE (1965)
Sup. FS minimo
Orientazione Prob. Plasticizzazione
Y - m
X - m
400
350
300
250
0
50
100
150
10
9
8
7
6
5
4
3
2
1
SSAP2010 rel. 5.0.2 (1991,2021) by L. Borselli, www.lorenzo-borselli.eu
https://WWW.SSAP.EU
Credits to: GNUPLOT 5.4.1 www.gnuplot.info

Report elaborazioni

SSAP 5.0.2 - Slope Stability Analysis Program (1991,2021)
WWW.SSAP.EU
Build No. 11893
BY
Dr. Geol. LORENZO BORSELLI *,**
*UASLP, San Luis Potosi, Mexico
e-mail: lborselli@gmail.com
CV e WEB page personale: WWW.LORENZO-BORSELLI.EU
** Gia' Ricercatore CNR-IRPI fino a Luglio 2011

Ultima Revisione struttura tabelle del report: 21 Febbraio 2021

File report: C:\SSAP2010\CRACO SERRACARUSO CAP\VERIFICA 3\NON DRENATA\BERSELLI\BERSELLI.txt
Data: 18/11/2021
Localita' :
Descrizione:
Modello pendio: NONDRENATA.mod

---------- PARAMETRI DEL MODELLO DEL PENDIO ----------

__ PARAMETRI GEOMETRICI - Coordinate X Y (in m) __

SUP T.		SUP 2		SUP 3		SUP 4	
X	Y	X	Y	X	Y	X	Y
0.00	216.45	-	-	-	-	-	-
3.00	216.75	-	-	-	-	-	-
8.00	217.20	-	-	-	-	-	-
13.50	217.50	-	-	-	-	-	-
15.00	217.69	-	-	-	-	-	-
21.00	218.16	-	-	-	-	-	-
24.50	218.66	-	-	-	-	-	-
32.00	219.84	-	-	-	-	-	-
41.50	221.94	-	-	-	-	-	-
49.00	223.69	-	-	-	-	-	-
55.00	225.08	-	-	-	-	-	-
66.50	228.27	-	-	-	-	-	-
68.50	228.83	-	-	-	-	-	-
78.50	231.31	-	-	-	-	-	-
83.50	232.38	-	-	-	-	-	-
87.50	233.17	-	-	-	-	-	-
94.00	234.15	-	-	-	-	-	-
100.00	235.93	-	-	-	-	-	-
102.00	236.25	-	-	-	-	-	-
109.50	238.42	-	-	-	-	-	-
117.50	241.14	-	-	-	-	-	-
129.00	244.33	-	-	-	-	-	-
145.50	247.98	-	-	-	-	-	-
154.00	249.72	-	-	-	-	-	-
164.50	251.93	-	-	-	-	-	-
173.00	253.21	-	-	-	-	-	-
176.59	253.45	-	-	-	-	-	-

ASSENZA DI FALDA

------- PARAMETRI GEOMECCANICI -------

	fi`	C`	Cu	Gamm	Gamm_sat	STR_IDX	sgci	GSI	mi	D
STRATO 1	0.00	0.00	100.00	20.00	22.00	19.086	0.00	0.00	0.00	0.00

LEGENDA: fi`_____ Angolo di attrito interno efficace(in gradi)
C` _____ Coesione efficace (in Kpa)

Cu _____ Resistenza al taglio Non drenata (in Kpa)
Gamm _____ Peso di volume terreno fuori falda (in KN/m^3)
Gamm_sat __ Peso di volume terreno immerso (in KN/m^3)
STR_IDX ___ Indice di resistenza (usato in solo in 'SNIFF SEARCH) (adimensionale)
---- SOLO Per AMMASSI ROCCIOSI FRATTURATI - Parametri Criterio di Rottura di Hoek (2002)-
sigci _____ Resistenza Compressione Uniassiale Roccia Intatta (in MPa)
GSI _____ Geological Strenght Index ammasso(adimensionale)
mi _____ Indice litologico ammasso(adimensionale)
D _____ Fattore di disturbo ammasso(adimensionale)
Fattore di riduzione NTC2018: gammaPHI=1.25 e gammaC=1.25 - DISATTIVATO (solo per ROCCE)
Uso CRITERIO DI ROTTURA Hoek et al.(2002,2006) - non-lineare - Generalizzato, secondo Lei et al.(2016)

---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
MOTORE DI RICERCA: RANDOM SEARCH - Siegel (1981)
FILTRAGGIO SUPERFICI : ATTIVATO
COORDINATE X1,X2,Y OSTACOLO : 0.00 0.00 0.00
LUNGHEZZA MEDIA SEGMENTI (m)*: 7.1 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 3.53 162.46
LIVELLO MINIMO CONSIDERATO (Ymin): 210.00
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 21.19 173.06
TOTALE SUPERFICI GENERATE : 10000
*NOTA IMPORTANTE: La lunghezza media dei segmenti non viene cosiderata nel caso
di uso del motore di recerca NEW RANOM SEARCH

---------- INFORMAZIONI PARAMETRI DI CALCOLO ----------
METODO DI CALCOLO : BORSELLI (Borselli, 2016)
METODO DI ESPLORAZIONE CAMPO VALORI (lambda0,Fs0) ADOTTATO : A (rapido)
COEFFICIENTE SISMICO UTILIZZATO Kh : 0.0350
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0175
COEFFICIENTE c=Kv/Kh UTILIZZATO : 0.5000
FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00

N.B. Le forze orizzontali addizionali in testa e alla base sono poste uguali a 0
durante le tutte le verifiche globali.
I valori >0 impostati dall'utente sono utilizzati solo in caso di verifica singola

---------- RISULTATO FINALE ELABORAZIONI ----------
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* DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *

Fattore di sicurezza (FS) 1.4004 - Min. - X Y Lambda= 0.1673
42.43 222.16
49.90 217.27
53.32 215.15
55.54 213.94
57.31 213.15
59.12 212.57
60.67 212.23
62.40 212.02
64.29 211.95
66.68 211.99
68.89 212.04
70.97 212.08
72.99 212.14
74.95 212.19
76.93 212.25
78.93 212.32
80.97 212.39
83.06 212.47
85.01 212.58
86.91 212.74
88.77 212.94
90.70 213.19

92.56 213.48
94.46 213.82
96.41 214.21
98.48 214.67
100.53 215.13
102.53 215.58
104.52 216.02
106.49 216.46
108.48 216.91
110.47 217.36
112.49 217.81
114.54 218.27
116.49 218.75
118.41 219.24
120.30 219.77
122.25 220.34
124.17 220.94
126.15 221.59
128.23 222.31
130.50 223.13
132.46 223.93
134.32 224.78
136.09 225.69
137.98 226.78
139.76 227.90
141.63 229.20
143.59 230.66
145.80 232.41
147.88 234.08
149.88 235.73
151.84 237.37
153.79 239.04
155.96 240.95
156.89 241.78
156.89 250.33

Fattore di sicurezza (FS) 1.4575 - N.2 -- X Y Lambda= 0.1638
31.42 219.75
43.69 216.06
49.61 214.40
53.64 213.42
57.06 212.76
60.35 212.31
63.42 212.03
66.67 211.87
70.11 211.85
74.08 211.96
77.65 212.12
81.05 212.35
84.32 212.64
87.66 213.02
90.91 213.47
94.27 214.00
97.74 214.64
101.52 215.40
105.00 216.17
108.35 216.99
111.61 217.86
114.95 218.83
118.24 219.87
121.66 221.04
125.27 222.35
129.30 223.89
132.70 225.36
135.91 226.95

	138.91	228.64				
	142.18	230.72				
	145.57	233.18				
	149.58	236.38				
	155.00	241.04				
	155.00	249.93				
Fattore di sicurezza (FS)	1.4603	- N.3 --	X	Y	Lambda=	0.1383
	57.05	225.65				
	62.99	220.54				
	65.73	218.28				
	67.51	216.97				
	68.93	216.08				
	70.38	215.38				
	71.60	214.92				
	72.98	214.55				
	74.48	214.29				
	76.39	214.07				
	78.16	213.88				
	79.81	213.70				
	81.43	213.53				
	83.00	213.37				
	84.57	213.21				
	86.14	213.05				
	87.71	212.90				
	89.29	212.75				
	90.86	212.60				
	92.44	212.45				
	94.01	212.31				
	95.58	212.17				
	97.16	212.03				
	98.76	211.89				
	100.39	211.74				
	102.05	211.60				
	103.60	211.50				
	105.12	211.44				
	106.60	211.41				
	108.14	211.41				
	109.65	211.46				
	111.21	211.54				
	112.86	211.66				
	114.70	211.83				
	116.28	212.03				
	117.78	212.29				
	119.19	212.60				
	120.71	213.00				
	122.13	213.44				
	123.65	213.99				
	125.27	214.65				
	127.15	215.47				
	128.78	216.24				
	130.32	217.04				
	131.77	217.86				
	133.29	218.81				
	134.74	219.78				
	136.25	220.86				
	137.82	222.07				
	139.57	223.48				
	141.21	224.83				
	142.79	226.17				
	144.34	227.51				
	145.89	228.89				
	147.42	230.29				
	148.97	231.73				
	150.53	233.23				

152.15 234.81
153.75 236.38
155.33 237.94
156.91 239.49
158.48 241.04
159.32 241.88
159.32 250.84

Fattore di sicurezza (FS) 1.4822 - N.4 -- X Y Lambda= 0.1449
56.80 225.58
65.58 219.28
69.64 216.50
72.29 214.89
74.42 213.80
76.58 212.96
78.45 212.41
80.53 212.00
82.80 211.74
85.67 211.57
88.25 211.44
90.67 211.34
93.00 211.28
95.31 211.25
97.63 211.24
100.03 211.27
102.57 211.32
105.36 211.41
107.64 211.59
109.77 211.90
111.72 212.33
113.91 212.97
115.89 213.71
118.05 214.67
120.39 215.87
123.22 217.45
125.73 218.92
128.10 220.37
130.35 221.83
132.64 223.39
134.86 224.97
137.12 226.65
139.44 228.44
141.90 230.42
144.31 232.35
146.67 234.27
149.02 236.17
151.34 238.07
153.96 240.23
154.83 240.94
154.83 249.90

Fattore di sicurezza (FS) 1.4863 - N.5 -- X Y Lambda= 0.1717
48.73 223.63
54.92 218.59
57.73 216.41
59.53 215.17
60.93 214.37
62.40 213.77
63.62 213.42
65.02 213.18
66.59 213.07
68.68 213.05
70.50 213.06
72.17 213.10

73.76 213.17
75.34 213.28
76.89 213.40
78.46 213.57
80.06 213.76
81.75 213.99
83.41 214.22
85.04 214.43
86.66 214.65
88.26 214.85
89.89 215.06
91.52 215.26
93.19 215.46
94.90 215.67
96.49 215.89
98.05 216.14
99.58 216.43
101.16 216.76
102.68 217.12
104.25 217.53
105.84 217.98
107.55 218.50
109.22 219.00
110.85 219.48
112.47 219.96
114.08 220.43
115.70 220.89
117.34 221.36
119.00 221.83
120.72 222.31
122.31 222.79
123.87 223.30
125.39 223.84
126.97 224.44
128.51 225.07
130.11 225.77
131.77 226.54
133.59 227.42
135.23 228.27
136.80 229.14
138.30 230.04
139.87 231.05
141.38 232.07
142.94 233.20
144.54 234.43
146.30 235.82
147.97 237.18
149.60 238.52
151.20 239.85
152.06 240.58
152.06 249.32

Fattore di sicurezza (FS) 1.4955 - N.6 -- X Y Lambda= 0.1542
44.61 222.67
55.77 219.48
61.33 217.96
65.21 216.98
68.60 216.21
71.73 215.60
74.78 215.08
77.95 214.61
81.26 214.19
84.91 213.80
88.14 213.55
91.23 213.41

94.17 213.38
97.26 213.45
100.23 213.64
103.37 213.95
106.73 214.39
110.62 215.00
113.87 215.65
116.90 216.40
119.72 217.28
122.77 218.40
125.60 219.61
128.63 221.08
131.86 222.82
135.63 225.00
138.99 227.05
142.18 229.09
145.24 231.16
148.37 233.39
151.76 235.96
155.64 239.05
159.40 242.17
159.40 250.86

Fattore di sicurezza (FS) 1.4978 - N.7 -- X Y Lambda= 0.1593
52.39 224.47
58.94 219.67
61.99 217.53
64.00 216.28
65.62 215.41
67.26 214.72
68.69 214.25
70.28 213.88
72.02 213.61
74.21 213.39
76.12 213.22
77.91 213.11
79.60 213.04
81.32 213.02
82.99 213.03
84.71 213.08
86.48 213.18
88.39 213.32
90.19 213.47
91.93 213.65
93.64 213.85
95.37 214.08
97.07 214.33
98.81 214.61
100.60 214.93
102.49 215.30
104.27 215.67
105.99 216.07
107.68 216.49
109.41 216.95
111.10 217.44
112.83 217.98
114.63 218.56
116.56 219.23
118.34 219.88
120.05 220.55
121.72 221.25
123.44 222.03
125.11 222.82
126.84 223.69
128.63 224.64

	130.58	225.72
	132.37	226.76
	134.09	227.82
	135.76	228.90
	137.48	230.07
	139.14	231.25
	140.84	232.52
	142.57	233.88
	144.42	235.37
	146.23	236.84
	148.02	238.29
	149.79	239.73
	150.62	240.41
	150.62	249.03

Fattore di sicurezza (FS) 1.5000 - N.8 -- X Y Lambda= 0.1482

	52.13	224.41
	60.94	219.52
	65.08	217.34
	67.84	216.05
	70.11	215.15
	72.37	214.47
	74.39	214.00
	76.58	213.65
	78.94	213.42
	81.81	213.28
	84.39	213.18
	86.82	213.13
	89.16	213.12
	91.51	213.15
	93.83	213.22
	96.21	213.33
	98.67	213.49
	101.32	213.69
	103.72	213.93
	106.04	214.23
	108.28	214.58
	110.60	215.02
	112.87	215.52
	115.25	216.10
	117.78	216.80
	120.66	217.66
	123.06	218.49
	125.31	219.40
	127.39	220.40
	129.66	221.65
	131.76	222.95
	133.99	224.48
	136.35	226.25
	139.06	228.43
	141.61	230.50
	144.07	232.51
	146.47	234.51
	148.84	236.51
	151.49	238.79
	154.00	240.97
	154.00	249.72

Fattore di sicurezza (FS) 1.5080 - N.9 -- X Y Lambda= 0.1552

	43.15	222.33
	54.44	217.19
	59.68	214.94
	63.14	213.68
	65.96	212.87

68.80 212.33
71.29 212.04
74.02 211.93
76.93 212.01
80.48 212.27
83.81 212.52
86.98 212.75
90.08 212.97
93.10 213.19
96.21 213.40
99.39 213.62
102.74 213.85
106.33 214.10
109.23 214.45
111.93 214.98
114.38 215.69
117.19 216.75
119.69 217.92
122.45 219.45
125.45 221.35
129.10 223.85
132.41 226.17
135.53 228.43
138.53 230.67
141.52 232.96
144.82 235.58
148.54 238.62
150.33 240.12
150.33 248.97

Fattore di sicurezza (FS) 1.5080 - N.10 -- X Y Lambda= 0.1666
44.36 222.61
51.51 219.62
54.95 218.25
57.30 217.42
59.28 216.81
61.19 216.34
62.96 215.99
64.83 215.72
66.79 215.51
69.04 215.35
71.14 215.22
73.16 215.12
75.12 215.04
77.09 214.98
79.04 214.94
81.03 214.93
83.07 214.93
85.22 214.95
87.20 215.01
89.13 215.11
91.01 215.26
92.95 215.46
94.82 215.69
96.74 215.98
98.71 216.32
100.83 216.73
102.88 217.14
104.88 217.54
106.86 217.95
108.84 218.37
110.81 218.80
112.80 219.25
114.81 219.70
116.86 220.18

118.85	220.66
120.80	221.16
122.74	221.68
124.70	222.23
126.66	222.80
128.68	223.41
130.77	224.07
133.02	224.81
134.98	225.52
136.86	226.31
138.63	227.15
140.54	228.16
142.33	229.20
144.21	230.41
146.20	231.79
148.44	233.43
150.53	235.00
152.53	236.55
154.48	238.11
156.44	239.71
158.60	241.55
159.54	242.36
159.54	250.89

---------- ANALISI DEFICIT DI RESISTENZA ----------
DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *
Analisi Deficit in riferimento a FS(progetto) = 1.100

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	1.400	13274.0	9478.7	2847.4	Surplus
2	1.458	13865.7	9513.2	3401.1	Surplus
3	1.460	13031.3	8923.9	3215.0	Surplus
4	1.482	12490.2	8427.0	3220.5	Surplus
5	1.486	12085.8	8131.6	3141.0	Surplus
6	1.495	13311.0	8900.8	3520.1	Surplus
7	1.498	11767.0	7856.4	3125.0	Surplus
8	1.500	12284.2	8189.6	3275.7	Surplus
9	1.508	12748.9	8454.5	3449.0	Surplus
10	1.508	12980.5	8607.9	3511.8	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 2847.4

Note: FTR --> Forza totale Resistente lungo la superficie
di scivolamento
FTA --> Forza totale Agente lungo la superficie
di scivolamento

IMPORTANTE! : Il Deficit o il Surplus di resistenza viene espresso in kN
per metro di LARGHEZZA rispetto al fronte della scarpata

TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (°)	W (kN/m)	ru (-)	U (kPa)	phi' (°)	(c',Cu) (kPa)
42.430	0.930	-33.19	7.80	0.00	0.00	0.00	100.00
43.360	0.930	-33.19	23.40	0.00	0.00	0.00	100.00
44.289	0.930	-33.19	39.01	0.00	0.00	0.00	100.00
45.219	0.930	-33.19	54.61	0.00	0.00	0.00	100.00
46.148	0.930	-33.19	70.21	0.00	0.00	0.00	100.00
47.078	0.930	-33.19	85.81	0.00	0.00	0.00	100.00
48.007	0.930	-33.19	101.42	0.00	0.00	0.00	100.00

48.937	0.063	-33.19	7.47	0.00	0.00	0.00	100.00
49.000	0.895	-33.19	113.46	0.00	0.00	0.00	100.00
49.895	0.930	-31.86	132.78	0.00	0.00	0.00	100.00
50.825	0.930	-31.86	147.78	0.00	0.00	0.00	100.00
51.754	0.930	-31.86	162.78	0.00	0.00	0.00	100.00
52.684	0.634	-31.86	119.65	0.00	0.00	0.00	100.00
53.318	0.930	-28.60	187.34	0.00	0.00	0.00	100.00
54.248	0.752	-28.60	161.62	0.00	0.00	0.00	100.00
55.000	0.537	-28.60	120.93	0.00	0.00	0.00	100.00
55.537	0.930	-23.95	219.92	0.00	0.00	0.00	100.00
56.466	0.841	-23.95	209.86	0.00	0.00	0.00	100.00
57.307	0.930	-17.65	242.97	0.00	0.00	0.00	100.00
58.237	0.886	-17.65	241.30	0.00	0.00	0.00	100.00
59.123	0.930	-12.45	262.57	0.00	0.00	0.00	100.00
60.052	0.620	-12.45	179.88	0.00	0.00	0.00	100.00
60.672	0.930	-6.83	276.28	0.00	0.00	0.00	100.00
61.601	0.803	-6.83	244.33	0.00	0.00	0.00	100.00
62.404	0.930	-2.23	288.59	0.00	0.00	0.00	100.00
63.334	0.930	-2.23	294.15	0.00	0.00	0.00	100.00
64.263	0.027	-2.23	8.51	0.00	0.00	0.00	100.00
64.290	0.930	1.01	299.37	0.00	0.00	0.00	100.00
65.219	0.930	1.01	303.94	0.00	0.00	0.00	100.00
66.149	0.351	1.01	115.95	0.00	0.00	0.00	100.00
66.500	0.183	1.01	60.74	0.00	0.00	0.00	100.00
66.683	0.930	1.14	311.14	0.00	0.00	0.00	100.00
67.613	0.887	1.14	301.30	0.00	0.00	0.00	100.00
68.500	0.390	1.14	133.83	0.00	0.00	0.00	100.00
68.890	0.930	1.29	321.46	0.00	0.00	0.00	100.00
69.820	0.930	1.29	325.42	0.00	0.00	0.00	100.00
70.749	0.217	1.29	76.47	0.00	0.00	0.00	100.00
70.966	0.930	1.44	330.29	0.00	0.00	0.00	100.00
71.896	0.930	1.44	334.21	0.00	0.00	0.00	100.00
72.825	0.162	1.44	58.57	0.00	0.00	0.00	100.00
72.987	0.930	1.60	338.78	0.00	0.00	0.00	100.00
73.917	0.930	1.60	342.65	0.00	0.00	0.00	100.00
74.846	0.104	1.60	38.46	0.00	0.00	0.00	100.00
74.950	0.930	1.75	346.93	0.00	0.00	0.00	100.00
75.879	0.930	1.75	350.76	0.00	0.00	0.00	100.00
76.809	0.123	1.75	46.61	0.00	0.00	0.00	100.00
76.932	0.930	1.89	355.06	0.00	0.00	0.00	100.00
77.861	0.639	1.89	246.20	0.00	0.00	0.00	100.00
78.500	0.429	1.89	166.40	0.00	0.00	0.00	100.00
78.929	0.930	2.04	362.59	0.00	0.00	0.00	100.00
79.859	0.930	2.04	365.73	0.00	0.00	0.00	100.00
80.788	0.180	2.04	71.16	0.00	0.00	0.00	100.00
80.968	0.930	2.18	369.45	0.00	0.00	0.00	100.00
81.898	0.930	2.18	372.54	0.00	0.00	0.00	100.00
82.827	0.233	2.18	93.74	0.00	0.00	0.00	100.00
83.060	0.440	3.37	177.73	0.00	0.00	0.00	100.00
83.500	0.930	3.37	377.37	0.00	0.00	0.00	100.00
84.430	0.580	3.37	236.54	0.00	0.00	0.00	100.00
85.009	0.930	4.68	381.13	0.00	0.00	0.00	100.00
85.939	0.930	4.68	383.16	0.00	0.00	0.00	100.00
86.868	0.047	4.68	19.30	0.00	0.00	0.00	100.00
86.915	0.585	6.07	242.21	0.00	0.00	0.00	100.00
87.500	0.930	6.07	385.68	0.00	0.00	0.00	100.00
88.430	0.343	6.07	142.53	0.00	0.00	0.00	100.00
88.773	0.930	7.43	386.54	0.00	0.00	0.00	100.00
89.702	0.930	7.43	386.89	0.00	0.00	0.00	100.00
90.632	0.070	7.43	28.98	0.00	0.00	0.00	100.00
90.701	0.930	8.79	387.07	0.00	0.00	0.00	100.00
91.631	0.928	8.79	386.28	0.00	0.00	0.00	100.00
92.559	0.930	10.15	386.71	0.00	0.00	0.00	100.00
93.488	0.512	10.15	212.76	0.00	0.00	0.00	100.00
94.000	0.462	10.15	192.14	0.00	0.00	0.00	100.00
94.462	0.930	11.42	388.05	0.00	0.00	0.00	100.00

95.391	0.930	11.42	389.71	0.00	0.00	0.00	100.00
96.321	0.085	11.42	35.64	0.00	0.00	0.00	100.00
96.406	0.930	12.57	391.35	0.00	0.00	0.00	100.00
97.335	0.930	12.57	392.64	0.00	0.00	0.00	100.00
98.265	0.219	12.57	92.77	0.00	0.00	0.00	100.00
98.484	0.930	12.59	394.24	0.00	0.00	0.00	100.00
99.413	0.587	12.59	249.43	0.00	0.00	0.00	100.00
100.000	0.526	12.59	223.68	0.00	0.00	0.00	100.00
100.526	0.930	12.60	394.51	0.00	0.00	0.00	100.00
101.455	0.545	12.60	230.62	0.00	0.00	0.00	100.00
102.000	0.530	12.60	224.55	0.00	0.00	0.00	100.00
102.530	0.930	12.62	394.53	0.00	0.00	0.00	100.00
103.460	0.930	12.62	395.68	0.00	0.00	0.00	100.00
104.389	0.135	12.62	57.44	0.00	0.00	0.00	100.00
104.524	0.930	12.64	397.00	0.00	0.00	0.00	100.00
105.454	0.930	12.64	398.14	0.00	0.00	0.00	100.00
106.383	0.107	12.64	45.86	0.00	0.00	0.00	100.00
106.490	0.930	12.66	399.42	0.00	0.00	0.00	100.00
107.420	0.930	12.66	400.55	0.00	0.00	0.00	100.00
108.349	0.129	12.66	55.85	0.00	0.00	0.00	100.00
108.478	0.930	12.68	401.85	0.00	0.00	0.00	100.00
109.408	0.092	12.68	39.85	0.00	0.00	0.00	100.00
109.500	0.930	12.68	403.54	0.00	0.00	0.00	100.00
110.430	0.043	12.68	18.61	0.00	0.00	0.00	100.00
110.472	0.930	12.69	405.65	0.00	0.00	0.00	100.00
111.402	0.930	12.69	407.67	0.00	0.00	0.00	100.00
112.331	0.162	12.69	71.18	0.00	0.00	0.00	100.00
112.493	0.930	12.71	410.04	0.00	0.00	0.00	100.00
113.423	0.930	12.71	412.05	0.00	0.00	0.00	100.00
114.352	0.183	12.71	81.48	0.00	0.00	0.00	100.00
114.535	0.930	13.58	414.32	0.00	0.00	0.00	100.00
115.465	0.930	13.58	416.05	0.00	0.00	0.00	100.00
116.395	0.092	13.58	41.37	0.00	0.00	0.00	100.00
116.487	0.930	14.49	417.80	0.00	0.00	0.00	100.00
117.416	0.084	14.49	37.69	0.00	0.00	0.00	100.00
117.500	0.911	14.49	410.27	0.00	0.00	0.00	100.00
118.411	0.930	15.44	418.99	0.00	0.00	0.00	100.00
119.340	0.930	15.44	419.01	0.00	0.00	0.00	100.00
120.270	0.035	15.44	15.82	0.00	0.00	0.00	100.00
120.305	0.930	16.37	418.88	0.00	0.00	0.00	100.00
121.234	0.930	16.37	418.59	0.00	0.00	0.00	100.00
122.164	0.082	16.37	37.12	0.00	0.00	0.00	100.00
122.246	0.930	17.33	418.12	0.00	0.00	0.00	100.00
123.176	0.930	17.33	417.51	0.00	0.00	0.00	100.00
124.105	0.065	17.33	29.09	0.00	0.00	0.00	100.00
124.170	0.930	18.26	416.70	0.00	0.00	0.00	100.00
125.100	0.930	18.26	415.78	0.00	0.00	0.00	100.00
126.029	0.125	18.26	55.81	0.00	0.00	0.00	100.00
126.154	0.930	19.13	414.58	0.00	0.00	0.00	100.00
127.084	0.930	19.13	413.36	0.00	0.00	0.00	100.00
128.013	0.219	19.13	97.20	0.00	0.00	0.00	100.00
128.232	0.768	19.89	340.23	0.00	0.00	0.00	100.00
129.000	0.930	19.89	410.00	0.00	0.00	0.00	100.00
129.930	0.570	19.89	250.39	0.00	0.00	0.00	100.00
130.500	0.930	22.03	405.64	0.00	0.00	0.00	100.00
131.430	0.930	22.03	402.41	0.00	0.00	0.00	100.00
132.359	0.100	22.03	43.23	0.00	0.00	0.00	100.00
132.459	0.930	24.58	398.37	0.00	0.00	0.00	100.00
133.389	0.930	24.58	394.22	0.00	0.00	0.00	100.00
134.318	0.007	24.58	2.78	0.00	0.00	0.00	100.00
134.325	0.930	27.33	389.51	0.00	0.00	0.00	100.00
135.255	0.833	27.33	344.54	0.00	0.00	0.00	100.00
136.087	0.930	29.91	379.14	0.00	0.00	0.00	100.00
137.017	0.930	29.91	372.91	0.00	0.00	0.00	100.00
137.946	0.035	29.91	13.84	0.00	0.00	0.00	100.00
137.981	0.930	32.37	365.94	0.00	0.00	0.00	100.00

138.911	0.846	32.37	326.62	0.00	0.00	0.00	100.00
139.756	0.930	34.71	351.57	0.00	0.00	0.00	100.00
140.686	0.930	34.71	343.28	0.00	0.00	0.00	100.00
141.615	0.010	34.71	3.71	0.00	0.00	0.00	100.00
141.626	0.930	36.69	334.43	0.00	0.00	0.00	100.00
142.555	0.930	36.69	325.22	0.00	0.00	0.00	100.00
143.485	0.103	36.69	35.61	0.00	0.00	0.00	100.00
143.588	0.930	38.27	314.60	0.00	0.00	0.00	100.00
144.518	0.930	38.27	304.62	0.00	0.00	0.00	100.00
145.447	0.053	38.27	17.04	0.00	0.00	0.00	100.00
145.500	0.305	38.27	97.55	0.00	0.00	0.00	100.00
145.805	0.930	38.81	290.42	0.00	0.00	0.00	100.00
146.734	0.930	38.81	279.87	0.00	0.00	0.00	100.00
147.664	0.219	38.81	64.42	0.00	0.00	0.00	100.00
147.883	0.930	39.40	266.69	0.00	0.00	0.00	100.00
148.813	0.930	39.40	255.85	0.00	0.00	0.00	100.00
149.742	0.142	39.40	38.06	0.00	0.00	0.00	100.00
149.884	0.930	40.01	243.19	0.00	0.00	0.00	100.00
150.813	0.930	40.01	232.04	0.00	0.00	0.00	100.00
151.743	0.095	40.01	23.10	0.00	0.00	0.00	100.00
151.838	0.930	40.61	219.58	0.00	0.00	0.00	100.00
152.767	0.930	40.61	208.10	0.00	0.00	0.00	100.00
153.697	0.093	40.61	20.30	0.00	0.00	0.00	100.00
153.790	0.210	41.37	45.05	0.00	0.00	0.00	100.00
154.000	0.930	41.37	192.63	0.00	0.00	0.00	100.00
154.930	0.930	41.37	180.85	0.00	0.00	0.00	100.00
155.859	0.097	41.37	18.26	0.00	0.00	0.00	100.00
155.956	0.930	41.97	167.67	0.00	0.00	0.00	100.00

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
alpha(°) : Angolo pendenza base concio
W(kN/m) : Forza peso concio
ru(-) : Coefficiente locale pressione interstiziale
U(kPa) : Pressione totale dei pori base concio
phi'(°) : Angolo di attrito efficace base concio
c'/Cu (kPa) : Coesione efficace o Resistenza al taglio in condizioni non drenate
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TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	ht (m)	yt (m)	yt' (--)	E(x) (kN/m)	T(x) (kN/m)	E' (kN)	rho(x) (--)	FS_qFEM (--)	FS_srmFEM (--)		
42.430	0.000	222.157	-0.429	0.0000000000E+000	0.0000000000E+000	3.8744448545E+002		0.047	2.059	2.183	
43.360	0.207	221.756	-0.429	2.7771903424E+002	2.6854450867E-001	2.1010308063E+002		0.047	2.059	2.183	
44.289	0.418	221.359	-0.420	3.9059400761E+002	1.3535784059E+000	1.2907258354E+002		0.047	1.079	1.145	
45.219	0.642	220.975	-0.436	5.1767257289E+002	5.4429001789E+000	1.5787049336E+002		0.047	0.823	0.873	
46.148	0.823	220.548	-0.428	6.8408455759E+002	1.5064556238E+001	1.7560917343E+002		0.064	0.743	0.784	
47.078	1.063	220.180	-0.370	8.4414037439E+002	2.6410768258E+001	1.7058361021E+002		0.090	0.725	0.760	
48.007	1.350	219.860	-0.334	1.0012095409E+003	3.9509460193E+001	1.7318293963E+002		0.112	0.734	0.763	
48.937	1.658	219.559	-0.323	1.1660976643E+003	5.5141648070E+001	1.8822083897E+002		0.134	0.761	0.781	
49.000	1.679	219.539	-0.321	1.1780510127E+003	5.6389821153E+001	1.8866659022E+002		0.135	0.764	0.782	
49.895	1.977	219.252	-0.316	1.3432965565E+003	7.3477131040E+001	1.8593299929E+002		0.155	0.791	0.797	
50.825	2.266	218.963	-0.302	1.5174694777E+003	9.2608468665E+001	1.8987091769E+002		0.175	0.832	0.821	
51.754	2.571	218.691	-0.283	1.6962777810E+003	1.1410577686E+002	1.9439559446E+002		0.195	0.896	0.858	
52.684	2.894	218.436	-0.265	1.8788623429E+003	1.3812274280E+002	1.9503087781E+002		0.215	0.985	0.905	
53.318	3.129	218.276	-0.246	2.0019328640E+003	1.5551025832E+002	1.9892739631E+002		0.228	1.061	0.941	
54.248	3.411	218.052	-0.232	2.1934485232E+003	1.8532555130E+002	2.0554873862E+002		0.253	1.215	1.002	
55.000	3.656	217.887	-0.211	2.3477900387E+003	2.1132070202E+002	2.0378661566E+002		0.273	1.379	1.057	
55.537	3.842	217.780	-0.173	2.4566599936E+003	2.3075345085E+002	1.9742129251E+002		0.286	1.529	1.099	
56.466	4.108	217.634	-0.140	2.6314952389E+003	2.6480222849E+002	1.8137841107E+002		0.310	1.834	1.171	
57.307	4.381	217.533	-0.103	2.7788959776E+003	2.9608957457E+002	1.7654350726E+002		0.330	2.191	1.238	
58.237	4.595	217.451	-0.072	2.9442686597E+003	3.3441902448E+002	1.7179066870E+002		0.357	2.690	1.319	

59.123	4.827	217.401	-0.038	3.0912814222E+003	3.7085366350E+002	1.6150200734E+002	0.380	3.250	1.398
60.052	5.014	217.383	-0.005	3.2370551844E+003	4.0947989402E+002	1.4569716306E+002	0.406	3.798	1.484
60.672	5.161	217.393	0.029	3.3227285764E+003	4.3371287312E+002	1.3301951235E+002	0.421	3.980	1.539
61.601	5.306	217.427	0.049	3.4390382624E+003	4.6776120078E+002	1.1545330709E+002	0.443	4.076	1.620
62.404	5.453	217.478	0.071	3.5250487492E+003	4.9411395125E+002	9.7518012354E+001	0.458	3.938	1.684
63.334	5.562	217.550	0.083	3.6053917578E+003	5.1980481524E+002	7.9154778131E+001	0.473	3.693	1.750
64.263	5.680	217.632	0.088	3.6722021461E+003	5.4168728278E+002	6.6947596319E+001	0.483	3.439	1.811
64.290	5.684	217.635	0.104	3.6739820497E+003	5.4227638703E+002	6.6728829530E+001	0.484	3.432	1.812
65.219	5.764	217.732	0.106	3.7334944702E+003	5.6201557745E+002	6.0155289515E+001	0.494	3.217	1.872
66.149	5.848	217.832	0.111	3.7858142776E+003	5.7938938127E+002	5.6577316714E+001	0.501	3.046	1.930
66.500	5.884	217.874	0.122	3.8057098653E+003	5.8592690878E+002	5.6470448119E+001	0.504	2.994	1.954
66.683	5.903	217.897	0.122	3.8160281591E+003	5.8930441293E+002	5.5720445985E+001	0.505	2.968	1.967
67.613	5.998	218.010	0.125	3.8648161037E+003	6.0511115638E+002	5.2000287227E+001	0.511	2.875	2.030
68.500	6.094	218.124	0.129	3.9105482389E+003	6.1966684725E+002	5.0928386652E+001	0.517	2.812	2.093
68.890	6.137	218.175	0.134	3.9303272836E+003	6.2589385703E+002	5.0869490037E+001	0.519	2.791	2.123
69.820	6.241	218.300	0.140	3.9780731703E+003	6.4079926311E+002	5.2824107843E+001	0.525	2.745	2.197
70.749	6.356	218.435	0.146	4.0285304129E+003	6.5635830881E+002	5.4409560215E+001	0.531	2.702	2.278
70.966	6.383	218.467	0.141	4.0403330613E+003	6.5998209826E+002	5.3847089732E+001	0.532	2.692	2.298
71.896	6.489	218.597	0.143	4.0880258707E+003	6.7440044561E+002	5.2009497424E+001	0.538	2.658	2.377
72.825	6.602	218.733	0.145	4.1370217818E+003	6.8902734430E+002	5.1851456777E+001	0.543	2.624	2.459
72.987	6.621	218.756	0.133	4.1453859223E+003	6.9151263532E+002	5.0942983276E+001	0.544	2.619	2.473
73.917	6.717	218.878	0.132	4.1886853418E+003	7.0421928061E+002	4.6724213702E+001	0.548	2.591	2.541
74.846	6.815	219.002	0.133	4.2322489889E+003	7.1682873085E+002	4.4846073468E+001	0.551	2.564	2.604
74.950	6.825	219.015	0.130	4.2368747848E+003	7.1816099485E+002	4.4653307431E+001	0.551	2.561	2.611
75.879	6.918	219.136	0.132	4.2786526520E+003	7.3009505581E+002	4.5228445462E+001	0.554	2.536	2.664
76.809	7.014	219.260	0.134	4.3209571301E+003	7.4198078985E+002	4.6588400980E+001	0.557	2.512	2.708
76.932	7.027	219.277	0.137	4.3266944005E+003	7.4357475122E+002	4.6666894757E+001	0.558	2.508	2.713
77.861	7.123	219.404	0.134	4.3696242461E+003	7.5545413448E+002	4.4588480983E+001	0.561	2.484	2.747
78.500	7.186	219.488	0.130	4.3974064265E+003	7.6302619810E+002	4.3222575439E+001	0.562	2.469	2.762
78.929	7.227	219.544	0.131	4.4158846065E+003	7.6803320137E+002	4.3062842063E+001	0.564	2.458	2.770
79.859	7.317	219.666	0.133	4.4559552790E+003	7.7881502201E+002	4.2401314707E+001	0.567	2.436	2.782
80.788	7.408	219.790	0.134	4.4947111491E+003	7.8909554761E+002	4.1261757653E+001	0.569	2.414	2.782
80.968	7.426	219.815	0.136	4.5021202388E+003	7.9104402507E+002	4.1058584320E+001	0.570	2.409	2.780
81.898	7.517	219.941	0.134	4.5397116030E+003	8.0089626730E+002	3.8600202902E+001	0.572	2.386	2.771
82.827	7.605	220.064	0.132	4.5738802906E+003	8.0980976872E+002	3.4597319659E+001	0.573	2.363	2.754
83.060	7.626	220.095	0.133	4.5818047901E+003	8.1189041258E+002	3.4166853704E+001	0.574	2.357	2.749
83.500	7.659	220.154	0.133	4.5969288009E+003	8.1587919947E+002	3.3132061227E+001	0.575	2.346	2.739
84.430	7.728	220.277	0.134	4.6252827648E+003	8.2359057936E+002	2.9001355230E+001	0.576	2.322	2.713
85.009	7.772	220.356	0.133	4.6415489188E+003	8.2819853341E+002	2.6505085102E+001	0.577	2.306	2.696
85.939	7.818	220.478	0.129	4.6638612405E+003	8.3495001472E+002	2.1794317454E+001	0.579	2.282	2.667
86.868	7.861	220.596	0.127	4.6820658392E+003	8.4114126025E+002	1.6824683958E+001	0.580	2.258	2.638
86.915	7.863	220.602	0.137	4.6828450840E+003	8.4144516844E+002	1.6662978887E+001	0.580	2.256	2.636
87.500	7.881	220.682	0.139	4.6924259730E+003	8.4552957473E+002	1.4614583630E+001	0.581	2.239	2.616
88.430	7.912	220.812	0.141	4.7034120619E+003	8.5196966281E+002	1.0103638802E+001	0.585	2.211	2.582
88.773	7.925	220.862	0.150	4.7066608341E+003	8.5441569785E+002	8.6677790001E+000	0.586	2.201	2.569
89.702	7.944	221.002	0.155	4.7126956804E+003	8.6122017760E+002	3.4834133534E+000	0.590	2.170	2.533
90.632	7.971	221.150	0.160	4.7131367048E+003	8.6803171771E+002	-2.5643904660E+000	0.594	2.139	2.496
90.701	7.973	221.162	0.167	4.7129424463E+003	8.6853705022E+002	-2.8980147194E+000	0.594	2.137	2.493
91.631	7.985	221.317	0.178	4.7089305154E+003	8.7531186809E+002	-7.0337508467E+000	0.599	2.105	2.456
92.559	8.017	221.493	0.198	4.6998876340E+003	8.8212315259E+002	-1.1883319469E+001	0.604	2.071	2.415
93.488	8.043	221.686	0.210	4.6868517489E+003	8.8863944452E+002	-1.6319766671E+001	0.609	2.036	2.373
94.000	8.062	221.796	0.212	4.6778501761E+003	8.9174404065E+002	-1.8178469326E+001	0.612	2.018	2.350
94.462	8.075	221.892	0.215	4.6692067026E+003	8.9406846163E+002	-1.9732115624E+001	0.612	2.002	2.331
95.391	8.091	222.096	0.221	4.6489619230E+003	8.9797857474E+002	-2.3292617580E+001	0.612	1.971	2.291
96.321	8.111	222.303	0.224	4.6259043539E+003	9.0045504503E+002	-2.5439372883E+001	0.611	1.942	2.252
96.406	8.113	222.322	0.227	4.6237417538E+003	9.0064155470E+002	-2.5633543550E+001	0.611	1.939	2.248
97.335	8.117	222.534	0.227	4.5985256978E+003	9.0187107627E+002	-2.7993713322E+001	0.609	1.912	2.209
98.265	8.121	222.745	0.227	4.5716997911E+003	9.0172638279E+002	-2.9329633668E+001	0.607	1.886	2.170
98.484	8.122	222.795	0.229	4.5652475436E+003	9.0157679277E+002	-2.9625056677E+001	0.607	1.880	2.161
99.413	8.128	223.008	0.234	4.5369823597E+003	9.0028750152E+002	-3.1873578645E+001	0.604	1.855	2.121
100.000	8.139	223.150	0.245	4.5177454923E+003	8.9900828251E+002	-3.3439360971E+001	0.602	1.838	2.093
100.526	8.152	223.280	0.241	4.4998587507E+003	8.9769534595E+002	-3.3704543088E+001	0.602	1.823	2.067
101.455	8.164	223.501	0.241	4.4690380403E+003	8.9501077412E+002	-3.4253207106E+001	0.602	1.798	2.023
102.000	8.178	223.636	0.248	4.4500337807E+003	8.9315286363E+002	-3.4791932054E+001	0.602	1.783	1.995
102.530	8.191	223.767	0.262	4.4316384292E+003	8.9129470494E+002	-3.5757787453E+001	0.599	1.768	1.967
103.460	8.233	224.018	0.269	4.3966627432E+003	8.8756035631E+002	-3.7486822954E+001	0.595	1.741	1.915

104.389	8.275	224.268	0.267	4.3619482164E+003	8.8363507464E+002	-3.5414592424E+001	0.591	1.714	1.863
104.524	8.279	224.302	0.262	4.3572153434E+003	8.8308552012E+002	-3.5290746673E+001	0.590	1.711	1.856
105.454	8.315	224.546	0.263	4.3234102963E+003	8.7905920188E+002	-3.6176881367E+001	0.586	1.686	1.806
106.383	8.350	224.790	0.261	4.2899603892E+003	8.7496651397E+002	-3.3725066494E+001	0.581	1.661	1.757
106.490	8.353	224.817	0.249	4.2863830503E+003	8.7452532132E+002	-3.3517742994E+001	0.581	1.659	1.752
107.420	8.376	225.049	0.252	4.2548015961E+003	8.7058607574E+002	-3.4186838408E+001	0.577	1.637	1.707
108.349	8.404	225.285	0.252	4.2228277031E+003	8.6650102892E+002	-3.2492841087E+001	0.572	1.614	1.662
108.478	8.405	225.316	0.242	4.2186572740E+003	8.6596291801E+002	-3.2293429958E+001	0.572	1.612	1.656
109.408	8.421	225.541	0.240	4.1882001845E+003	8.6199213532E+002	-2.9342733042E+001	0.567	1.590	1.614
109.500	8.421	225.561	0.253	4.1855310900E+003	8.6164000475E+002	-2.9530326111E+001	0.567	1.589	1.610
110.430	8.450	225.799	0.256	4.1531383239E+003	8.5727057925E+002	-3.3194347823E+001	0.561	1.565	1.566
110.472	8.451	225.809	0.282	4.1517225487E+003	8.5707764346E+002	-3.3383483072E+001	0.561	1.564	1.564
111.402	8.505	226.074	0.280	4.1153312587E+003	8.5200476553E+002	-3.8798581668E+001	0.555	1.538	1.517
112.331	8.552	226.329	0.272	4.0795936991E+003	8.4690544906E+002	-3.6621537836E+001	0.549	1.510	1.472
112.493	8.557	226.371	0.277	4.0737190891E+003	8.4605564483E+002	-3.6895846721E+001	0.548	1.506	1.465
113.423	8.608	226.632	0.287	4.0362618847E+003	8.4049295119E+002	-4.2192906936E+001	0.542	1.477	1.421
114.352	8.671	226.905	0.293	3.9952799888E+003	8.3403735473E+002	-4.4598635714E+001	0.535	1.446	1.378
114.535	8.683	226.958	0.296	3.9870878513E+003	8.3271079197E+002	-4.5056907564E+001	0.534	1.440	1.370
115.465	8.735	227.234	0.301	3.9435194921E+003	8.2551627919E+002	-4.8907247991E+001	0.527	1.408	1.330
116.395	8.794	227.517	0.302	3.8961663953E+003	8.1725030850E+002	-4.9657727058E+001	0.519	1.375	1.292
116.487	8.797	227.543	0.280	3.8915983510E+003	8.1642224743E+002	-4.9589688495E+001	0.519	1.372	1.289
117.416	8.818	227.804	0.281	3.8449459115E+003	8.0787921103E+002	-5.3942658297E+001	0.511	1.342	1.257
117.500	8.820	227.828	0.284	3.8404028004E+003	8.0700813463E+002	-5.4345937023E+001	0.511	1.339	1.254
118.411	8.843	228.086	0.286	3.7902704154E+003	7.9731402268E+002	-5.6548581533E+001	0.504	1.310	1.225
119.340	8.854	228.353	0.286	3.7362910786E+003	7.8664680654E+002	-5.9907263221E+001	0.497	1.281	1.198
120.270	8.861	228.617	0.284	3.6788992829E+003	7.7494635526E+002	-6.2412264950E+001	0.490	1.254	1.174
120.305	8.861	228.627	0.287	3.6767084006E+003	7.7449291598E+002	-6.2504717594E+001	0.490	1.253	1.173
121.234	8.855	228.894	0.287	3.6169541428E+003	7.6207476735E+002	-6.6055309878E+001	0.482	1.228	1.151
122.164	8.849	229.161	0.287	3.5539076871E+003	7.4863545499E+002	-7.2728241369E+001	0.474	1.205	1.132
122.246	8.848	229.184	0.297	3.5478750643E+003	7.4733909547E+002	-7.3054575764E+001	0.473	1.203	1.130
123.176	8.835	229.462	0.298	3.4811056738E+003	7.3286538286E+002	-7.2067638940E+001	0.465	1.181	1.113
124.105	8.822	229.739	0.298	3.4138970767E+003	7.1798234397E+002	-7.5156497672E+001	0.456	1.161	1.097
124.170	8.821	229.758	0.276	3.4090125334E+003	7.1689472199E+002	-7.4976244685E+001	0.455	1.160	1.096
125.100	8.769	230.013	0.280	3.3443741857E+003	7.0232400788E+002	-7.2428626204E+001	0.447	1.143	1.083
126.029	8.728	230.278	0.288	3.2743634493E+003	6.8621984955E+002	-8.2207056595E+001	0.438	1.126	1.071
126.154	8.726	230.317	0.307	3.2639774761E+003	6.8380182928E+002	-8.3160008975E+001	0.436	1.123	1.070
127.084	8.688	230.602	0.305	3.1864903677E+003	6.6556618777E+002	-8.4327717632E+001	0.426	1.105	1.058
128.013	8.648	230.884	0.304	3.1072072799E+003	6.4656150585E+002	-8.6484820071E+001	0.415	1.087	1.049
128.232	8.639	230.951	0.321	3.0882080508E+003	6.4196704828E+002	-8.8452635074E+001	0.412	1.083	1.047
129.000	8.611	231.201	0.315	3.0157441545E+003	6.2437888413E+002	-9.2967327743E+001	0.402	1.067	1.039
129.930	8.559	231.485	0.307	2.9309058216E+003	6.0360357597E+002	-9.2571597074E+001	0.391	1.049	1.032
130.500	8.528	231.661	0.313	2.8776427327E+003	5.9053115662E+002	-9.5273230341E+001	0.384	1.037	1.028
131.430	8.446	231.955	0.323	2.7862011583E+003	5.6809541856E+002	-1.0160168495E+002	0.372	1.019	1.023
132.359	8.376	232.260	0.329	2.6887592133E+003	5.4422127650E+002	-1.0769543623E+002	0.360	1.001	1.019
132.459	8.369	232.294	0.328	2.6779265022E+003	5.4157792109E+002	-1.0787196886E+002	0.358	0.999	1.019
133.389	8.247	232.598	0.325	2.5787997185E+003	5.1749002492E+002	-1.0685577579E+002	0.346	0.982	1.017
134.318	8.122	232.898	0.323	2.4792753183E+003	4.9340392851E+002	-1.0854712898E+002	0.333	0.966	1.016
134.325	8.121	232.900	0.355	2.4785594000E+003	4.9323104746E+002	-1.0862920942E+002	0.333	0.966	1.016
135.255	7.971	233.231	0.362	2.3682048831E+003	4.6668477271E+002	-1.2140066768E+002	0.320	0.952	1.017
136.087	7.849	233.538	0.383	2.2651090925E+003	4.4203641097E+002	-1.2760019009E+002	0.306	0.942	1.019
137.017	7.681	233.905	0.405	2.1425595898E+003	4.1298050207E+002	-1.3455688655E+002	0.291	0.933	1.023
137.946	7.532	234.292	0.416	2.0149599114E+003	3.8308825263E+002	-1.4192754687E+002	0.274	0.926	1.028
137.981	7.527	234.307	0.442	2.0100142834E+003	3.8193797044E+002	-1.4216319297E+002	0.274	0.926	1.028
138.911	7.349	234.717	0.467	1.8763454456E+003	3.5110294124E+002	-1.5077354200E+002	0.257	0.922	1.035
139.756	7.232	235.137	0.486	1.7434776079E+003	3.2124332338E+002	-1.5303628801E+002	0.239	0.921	1.043
140.686	7.031	235.580	0.475	1.6053936221E+003	2.9081769730E+002	-1.4563540714E+002	0.222	0.923	1.053
141.615	6.827	236.019	0.472	1.4727328041E+003	2.6243286630E+002	-1.3201569183E+002	0.205	0.928	1.065
141.626	6.824	236.024	0.452	1.4713921344E+003	2.6215175128E+002	-1.3189749330E+002	0.205	0.928	1.065
142.555	6.551	236.443	0.456	1.3488886609E+003	2.3688316392E+002	-1.3082695123E+002	0.190	0.935	1.078
143.485	6.287	236.872	0.462	1.2281771228E+003	2.1257189678E+002	-1.3179155724E+002	0.176	0.945	1.093
143.588	6.259	236.921	0.475	1.2145276199E+003	2.0985352601E+002	-1.3164182068E+002	0.174	0.946	1.095
144.518	5.967	237.362	0.468	1.0952064793E+003	1.8640505835E+002	-1.2356257152E+002	0.159	0.959	1.112
145.447	5.663	237.791	0.462	9.8481751825E+002	1.6518481894E+002	-1.1757436699E+002	0.146	0.975	1.132
145.500	5.646	237.816	0.460	9.7859840688E+002	1.6399706417E+002	-1.1694811878E+002	0.145	0.976	1.133
145.805	5.545	237.956	0.464	9.4392180591E+002	1.5738726838E+002	-1.1319922946E+002	0.141	0.982	1.141
146.734	5.231	238.389	0.498	8.4019956330E+002	1.3775992064E+002	-1.1578590379E+002	0.128	1.002	1.165

147.664	4.977	238.883	0.531	7.2866898785E+002	1.1677428480E+002	-1.1648045297E+002	0.113	1.029	1.197
147.883	4.916	238.998	0.531	7.0333342562E+002	1.1201894151E+002	-1.1504663717E+002	0.109	1.036	1.206
148.813	4.647	239.492	0.533	5.9879086186E+002	9.2461953072E+001	-1.0851240595E+002	0.094	1.068	1.244
149.742	4.379	239.989	0.533	5.0160246866E+002	7.4579152058E+001	-1.0019986148E+002	0.079	1.104	1.286
149.884	4.337	240.063	0.534	4.8749525019E+002	7.2009308554E+001	-1.0011309640E+002	0.077	1.109	1.292
150.813	4.055	240.561	0.528	3.9091644987E+002	5.4099303721E+001	-9.9296648731E+001	0.060	1.153	1.344
151.743	3.759	241.045	0.518	3.0289692895E+002	3.7829855096E+001	-8.5257456760E+001	0.047	1.197	1.396
151.838	3.726	241.092	0.479	2.9488485351E+002	3.6378854753E+001	-8.3577271292E+001	0.047	1.203	1.402
152.767	3.373	241.536	0.470	2.2370025129E+002	2.4095690019E+001	-7.1663479762E+001	0.047	1.254	1.463
153.697	3.006	241.966	0.461	1.6165822172E+002	1.4422700368E+001	-6.0909768717E+001	0.047	1.310	1.528
153.790	2.967	242.008	0.417	1.5601855375E+002	1.3617194173E+001	-5.7621924835E+001	0.047	1.317	1.536
154.000	2.867	242.092	0.482	1.4521370969E+002	1.2175467384E+001	-5.2178740099E+001	0.047	1.328	1.549
154.930	2.514	242.557	0.600	9.4197771255E+001	6.4869252410E+000	-5.6950320881E+001	0.047	1.413	1.650
155.859	2.346	243.208	0.667	3.9339707269E+001	1.9987101279E+000	-2.7848881854E+001	0.047	1.521	1.773
155.956	2.294	243.242	0.667	3.6945918563E+001	1.8330272665E+000	-2.6021661605E+001	0.047	1.525	1.781

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
ht(m) : Altezza linea di thrust da nodo sinistro base concio
yt(m) : coordinata Y linea di trust
yt'(-) : gradiente pendenza locale linea di trust
E(x)(kN/m) : Forza Normale interconcio
T(x)(kN/m) : Forza Tangenziale interconcio
E' (kN) : derivata Forza normale interconcio
Rho(x) (-) : fattore mobilizzazione resistenza al taglio verticale interconcio ZhU et al.(2003)
FS_qFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by qFEM
FS_srmFEM(x)(-) : fattore di sicurezza locale stimato (locale in X) by SRM Procedure

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TABELLA SFORZI DI TAGLIO DISTRIBUITI LUNGO SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	dl (m)	alpha (°)	TauStress (kPa)	TauF (kN/m)	TauStrength (kPa)	TauS (kN/m)
42.430	0.930	1.111	-33.186	-3.639	-4.042	100.185	111.275
43.360	0.930	1.111	-33.186	-10.917	-12.125	100.749	111.901
44.289	0.930	1.111	-33.186	-18.194	-20.208	102.822	114.204
45.219	0.930	1.111	-33.186	-25.472	-28.292	106.640	118.444
46.148	0.930	1.111	-33.186	-32.750	-36.375	107.830	119.766
47.078	0.930	1.111	-33.186	-40.028	-44.458	109.040	121.109
48.007	0.930	1.111	-33.186	-47.305	-52.542	110.788	123.051
48.937	0.063	0.076	-33.186	-51.192	-3.870	112.657	8.516
49.000	0.895	1.070	-33.186	-54.938	-58.782	112.241	120.093
49.895	0.930	1.094	-31.855	-60.430	-66.132	112.921	123.575
50.825	0.930	1.094	-31.855	-67.256	-73.602	114.519	125.324
51.754	0.930	1.094	-31.855	-74.082	-81.072	116.220	127.186
52.684	0.634	0.747	-31.855	-79.823	-59.594	117.213	87.508
53.318	0.930	1.059	-28.597	-79.261	-83.911	118.877	125.852
54.248	0.752	0.857	-28.597	-84.488	-72.393	120.335	103.108
55.000	0.537	0.611	-28.597	-88.594	-54.165	121.305	74.164
55.537	0.930	1.017	-23.946	-80.845	-82.225	119.028	121.060
56.466	0.841	0.920	-23.946	-85.286	-78.463	119.330	109.783
57.307	0.930	0.975	-17.649	-67.213	-65.563	116.684	113.818
58.237	0.886	0.930	-17.649	-70.042	-65.111	116.641	108.429
59.123	0.930	0.952	-12.453	-50.053	-47.647	112.253	106.857
60.052	0.620	0.634	-12.453	-51.445	-32.641	111.533	70.767
60.672	0.930	0.936	-6.834	-24.862	-23.275	106.061	99.292
61.601	0.803	0.809	-6.834	-25.448	-20.584	105.429	85.279
62.404	0.930	0.930	-2.229	-1.217	-1.132	101.504	94.423
63.334	0.930	0.930	-2.229	-1.241	-1.154	101.281	94.215
64.263	0.027	0.027	-2.229	-1.253	-0.033	101.204	2.698
64.290	0.930	0.930	1.015	16.973	15.779	99.473	92.478
65.219	0.930	0.930	1.015	17.232	16.020	99.536	92.537
66.149	0.351	0.351	1.015	17.410	6.111	99.538	34.940
66.500	0.183	0.183	1.015	17.484	3.202	99.542	18.228

66.683	0.930	0.930	1.144	18.393	17.100	99.525	92.529
67.613	0.887	0.888	1.144	18.657	16.559	99.541	88.349
68.500	0.390	0.390	1.144	18.836	7.355	99.554	38.876
68.890	0.930	0.930	1.289	19.878	18.482	99.495	92.507
69.820	0.930	0.930	1.289	20.123	18.710	99.473	92.486
70.749	0.217	0.217	1.289	20.274	4.397	99.473	21.572
70.966	0.930	0.930	1.439	21.349	19.851	99.455	92.475
71.896	0.930	0.930	1.439	21.603	20.087	99.447	92.468
72.825	0.162	0.162	1.439	21.751	3.520	99.460	16.095
72.987	0.930	0.930	1.597	22.902	21.296	99.467	92.493
73.917	0.930	0.930	1.597	23.163	21.539	99.471	92.497
74.846	0.104	0.104	1.597	23.309	2.417	99.499	10.319
74.950	0.930	0.930	1.747	24.425	22.714	99.452	92.487
75.879	0.930	0.930	1.747	24.694	22.965	99.454	92.489
76.809	0.123	0.123	1.747	24.846	3.052	99.446	12.215
76.932	0.930	0.930	1.894	25.974	24.157	99.409	92.454
77.861	0.639	0.639	1.894	26.208	16.750	99.452	63.564
78.500	0.429	0.430	1.894	26.356	11.321	99.460	42.723
78.929	0.930	0.930	2.040	27.509	25.587	99.422	92.475
79.859	0.930	0.930	2.040	27.747	25.808	99.449	92.500
80.788	0.180	0.180	2.040	27.889	5.021	99.461	17.907
80.968	0.930	0.930	2.179	28.994	26.970	99.436	92.496
81.898	0.930	0.930	2.179	29.236	27.196	99.490	92.546
82.827	0.233	0.233	2.179	29.388	6.843	99.524	23.175
83.060	0.440	0.441	3.368	37.781	16.651	99.255	43.744
83.500	0.930	0.931	3.368	37.968	35.354	99.319	92.479
84.430	0.580	0.581	3.368	38.167	22.160	99.347	57.681
85.009	0.930	0.933	4.679	47.594	44.388	99.173	92.492
85.939	0.930	0.933	4.679	47.848	44.625	99.242	92.557
86.868	0.047	0.047	4.679	47.981	2.248	99.259	4.651
86.915	0.585	0.588	6.068	57.843	34.036	98.972	58.237
87.500	0.930	0.935	6.068	57.978	54.196	98.980	92.523
88.430	0.343	0.345	6.068	58.058	20.028	98.950	34.135
88.773	0.930	0.937	7.435	67.669	63.433	98.685	92.508
89.702	0.930	0.937	7.435	67.731	63.492	98.683	92.507
90.632	0.070	0.070	7.435	67.765	4.755	98.695	6.925
90.701	0.930	0.941	8.790	77.122	72.539	98.459	92.608
91.631	0.928	0.939	8.790	77.108	72.392	98.447	92.427
92.559	0.930	0.944	10.152	86.291	81.486	98.297	92.823
93.488	0.512	0.520	10.152	86.205	44.832	98.526	51.240
94.000	0.462	0.469	10.152	86.289	40.487	98.777	46.346
94.462	0.930	0.948	11.424	95.085	90.171	98.856	93.747
95.391	0.930	0.948	11.424	95.493	90.557	99.276	94.145
96.321	0.085	0.087	11.424	95.715	8.282	99.402	8.601
96.406	0.930	0.952	12.568	103.455	98.526	99.607	94.860
97.335	0.930	0.952	12.568	103.798	98.852	100.046	95.279
98.265	0.219	0.225	12.568	104.010	23.355	100.203	22.500
98.484	0.930	0.952	12.585	104.335	99.370	100.413	95.635
99.413	0.587	0.601	12.585	104.614	62.869	100.650	60.486
100.000	0.526	0.539	12.585	104.638	56.380	100.744	54.281
100.526	0.930	0.952	12.603	104.525	99.558	100.861	96.068
101.455	0.545	0.558	12.603	104.290	58.199	101.017	56.373
102.000	0.530	0.543	12.603	104.290	56.666	101.045	54.903
102.530	0.930	0.953	12.621	104.648	99.683	101.200	96.397
103.460	0.930	0.953	12.621	104.954	99.973	101.261	96.456
104.389	0.135	0.138	12.621	105.128	14.512	101.218	13.972
104.524	0.930	0.953	12.640	105.424	100.428	101.295	96.495
105.454	0.930	0.953	12.640	105.727	100.718	101.317	96.516
106.383	0.107	0.110	12.640	105.897	11.601	101.234	11.090
106.490	0.930	0.953	12.658	106.187	101.162	101.269	96.477
107.420	0.930	0.953	12.658	106.489	101.451	101.316	96.522
108.349	0.129	0.133	12.658	106.662	14.146	101.245	13.428
108.478	0.930	0.953	12.676	106.953	101.900	101.281	96.495
109.408	0.092	0.094	12.676	107.119	10.104	101.147	9.541
109.500	0.930	0.953	12.676	107.403	102.329	101.409	96.618
110.430	0.043	0.044	12.676	107.685	4.718	101.353	4.441

110.472	0.930	0.953	12.693	108.087	102.987	101.638	96.843
111.402	0.930	0.953	12.693	108.624	103.499	101.647	96.851
112.331	0.162	0.166	12.693	108.940	18.070	101.576	16.849
112.493	0.930	0.953	12.711	109.375	104.221	101.799	97.002
113.423	0.930	0.953	12.711	109.911	104.733	102.088	97.277
114.352	0.183	0.188	12.711	110.233	20.710	102.176	19.196
114.535	0.930	0.956	13.575	116.440	111.345	102.473	97.989
115.465	0.930	0.956	13.575	116.927	111.811	102.841	98.341
116.395	0.092	0.095	13.575	117.194	11.119	102.869	9.760
116.487	0.930	0.960	14.491	123.643	118.707	103.118	99.001
117.416	0.084	0.086	14.491	123.875	10.709	103.531	8.950
117.500	0.911	0.940	14.491	123.942	116.565	103.612	97.445
118.411	0.930	0.964	15.437	130.313	125.663	104.123	100.408
119.340	0.930	0.964	15.437	130.320	125.670	104.523	100.793
120.270	0.035	0.036	15.437	130.323	4.744	104.643	3.809
120.305	0.930	0.969	16.367	136.355	132.099	105.058	101.779
121.234	0.930	0.969	16.367	136.262	132.009	105.474	102.182
122.164	0.082	0.086	16.367	136.211	11.706	105.953	9.105
122.246	0.930	0.974	17.327	142.237	138.499	106.200	103.409
123.176	0.930	0.974	17.327	142.030	138.297	106.375	103.579
124.105	0.065	0.068	17.327	141.920	9.637	106.681	7.244
124.170	0.930	0.979	18.257	147.524	144.397	106.531	104.273
125.100	0.930	0.979	18.257	147.197	144.077	107.218	104.946
126.029	0.125	0.132	18.257	147.012	19.340	108.064	14.216
126.154	0.930	0.984	19.129	152.018	149.563	108.506	106.753
127.084	0.930	0.984	19.129	151.570	149.123	108.864	107.106
128.013	0.219	0.232	19.129	151.294	35.065	109.097	25.285
128.232	0.768	0.817	19.890	155.463	126.949	110.262	90.039
129.000	0.930	0.988	19.890	154.765	152.985	110.013	108.748
129.930	0.570	0.607	19.890	154.012	93.430	110.267	66.892
130.500	0.930	1.003	22.034	164.880	165.336	111.754	112.064
131.430	0.930	1.003	22.034	163.568	164.021	112.508	112.820
132.359	0.100	0.108	22.034	162.842	17.620	112.835	12.209
132.459	0.930	1.022	24.585	174.541	178.415	113.729	116.253
133.389	0.930	1.022	24.585	172.721	176.554	113.728	116.252
134.318	0.007	0.007	24.585	171.804	1.246	113.888	0.826
134.325	0.930	1.046	27.332	182.497	190.955	116.313	121.704
135.255	0.833	0.937	27.332	180.188	168.909	116.907	109.589
136.087	0.930	1.072	29.913	187.035	200.576	118.922	127.531
137.017	0.930	1.072	29.913	183.964	197.282	119.466	128.115
137.946	0.035	0.040	29.913	182.370	7.323	120.007	4.819
137.981	0.930	1.101	32.367	187.842	206.722	121.005	133.168
138.911	0.846	1.001	32.367	184.286	184.512	122.358	122.508
139.756	0.930	1.131	34.712	185.990	210.313	121.457	137.340
140.686	0.930	1.131	34.712	181.604	205.353	120.018	135.713
141.615	0.010	0.012	34.712	179.387	2.218	118.130	1.461
141.626	0.930	1.159	36.693	180.480	209.217	118.240	137.067
142.555	0.930	1.159	36.693	175.508	203.454	117.549	136.266
143.485	0.103	0.129	36.693	172.746	22.276	117.639	15.170
143.588	0.930	1.184	38.269	171.877	203.492	117.178	138.732
144.518	0.930	1.184	38.269	166.424	197.036	115.546	136.799
145.447	0.053	0.067	38.269	163.542	11.025	115.282	7.771
145.500	0.305	0.388	38.269	162.466	63.096	114.762	44.569
145.805	0.930	1.193	38.813	159.228	189.949	114.441	136.522
146.734	0.930	1.193	38.813	153.447	183.052	115.441	137.714
147.664	0.219	0.281	38.813	149.875	42.136	114.847	32.288
147.883	0.930	1.203	39.402	146.722	176.499	114.452	137.680
148.813	0.930	1.203	39.402	140.756	169.322	113.214	136.191
149.742	0.142	0.183	39.402	137.318	25.187	112.454	20.626
149.884	0.930	1.214	40.006	134.205	162.860	113.287	137.475
150.813	0.930	1.214	40.006	128.048	155.388	112.070	135.998
151.743	0.095	0.124	40.006	124.655	15.468	110.527	13.715
151.838	0.930	1.224	40.613	121.495	148.768	109.144	133.645
152.767	0.930	1.224	40.613	115.144	140.992	107.201	131.266
153.697	0.093	0.123	40.613	111.649	13.750	105.962	13.050
153.790	0.210	0.279	41.370	110.886	30.959	104.779	29.254

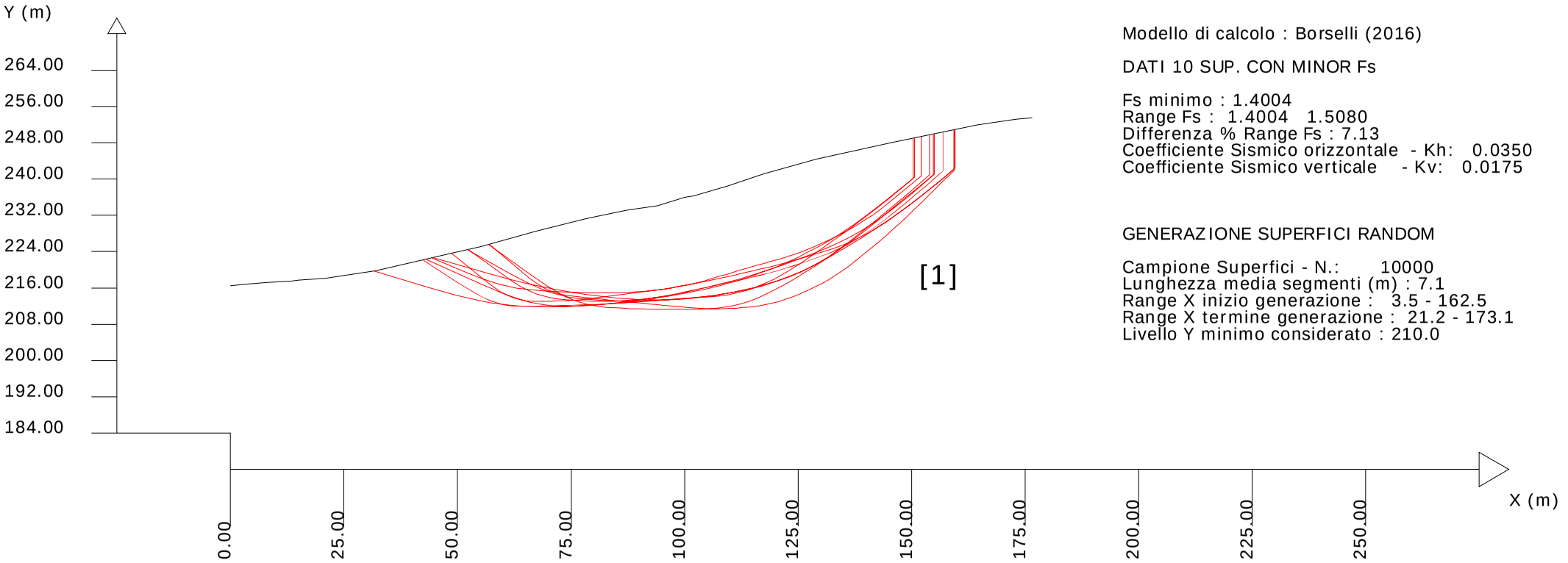
154.000	0.930	1.239	41.370	106.874	132.377	104.251	129.128
154.930	0.930	1.239	41.370	100.336	124.279	103.354	128.017
155.859	0.097	0.130	41.370	96.725	12.550	101.182	13.128
155.956	0.930	1.250	41.965	93.174	116.479	101.373	126.728

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
dl(m) : lunghezza base concio
alpha(°) : Angolo pendenza base concio
TauStress(kPa) : Sforzo di taglio su base concio
TauF (kN/m) : Forza di taglio su base concio
TauStrength(kPa) : Resistenza al taglio su base concio
TauS (kN/m) : Forza resistente al taglio su base concio

SSAP 5.0.2 (2021) - Slope Stability Analysis Program
Software by Dr.Geol. L.Borselli - www.lorenzo-borselli.eu
SSAP/DXF generator rel. 2.0 (2020)

Data : 18/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Borselli (2016)

DATI 10 SUP. CON MINOR Fs

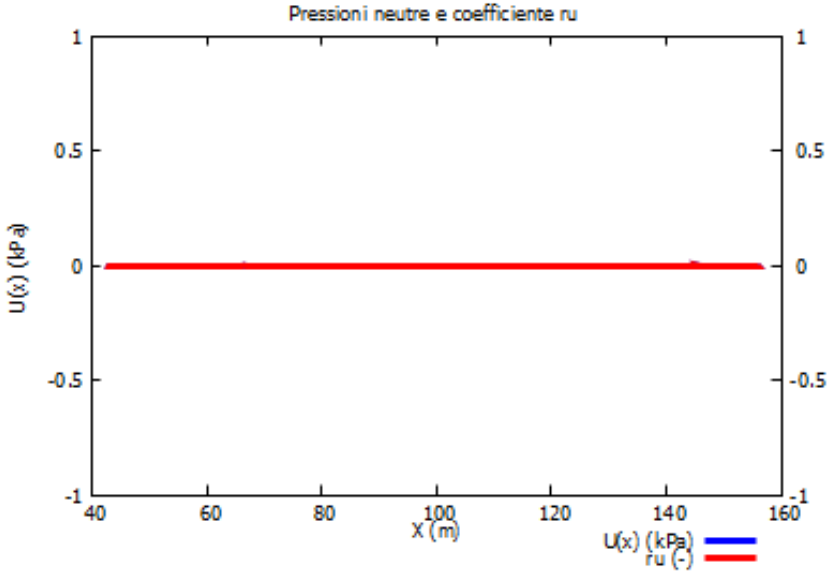
Fs minimo : 1.4004
Range Fs : 1.4004 1.5080
Differenza % Range Fs : 7.13
Coefficiente Sismico orizzontale - Kh: 0.0350
Coefficiente Sismico verticale - Kv: 0.0175

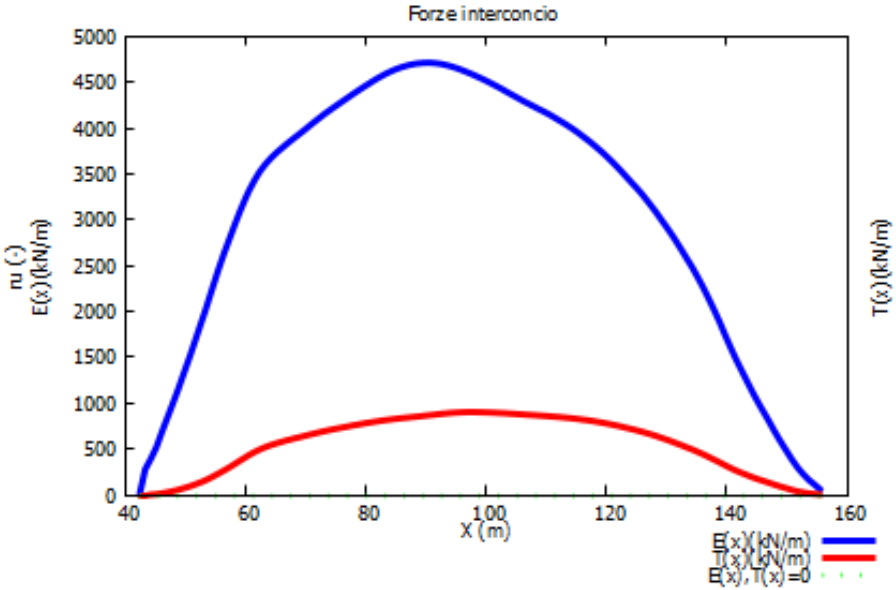
GENERAZIONE SUPERFICI RANDOM

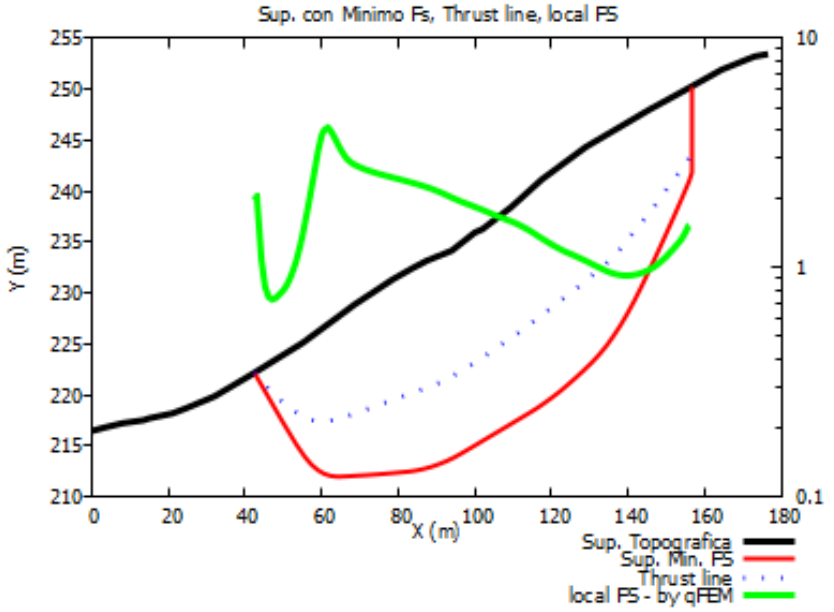
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 7.1
Range X inizio generazione : 3.5 - 162.5
Range X termine generazione : 21.2 - 173.1
Livello Y minimo considerato : 210.0

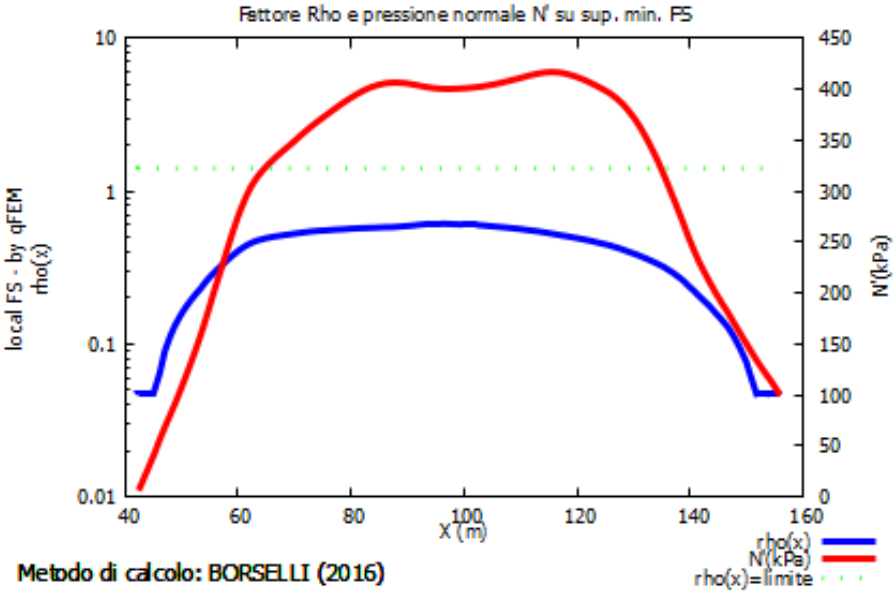
Parametri Geotecnici degli strati # ----------

N.	phi`	C`	Cu	Gamm	GammSat	sgci	GSI	mi	D
..	deg	kPa	kPa	kN/m3	kN/m3	MPa	..	..	..
1	0	0	100.00	20.00	22.00	0	0	0	0





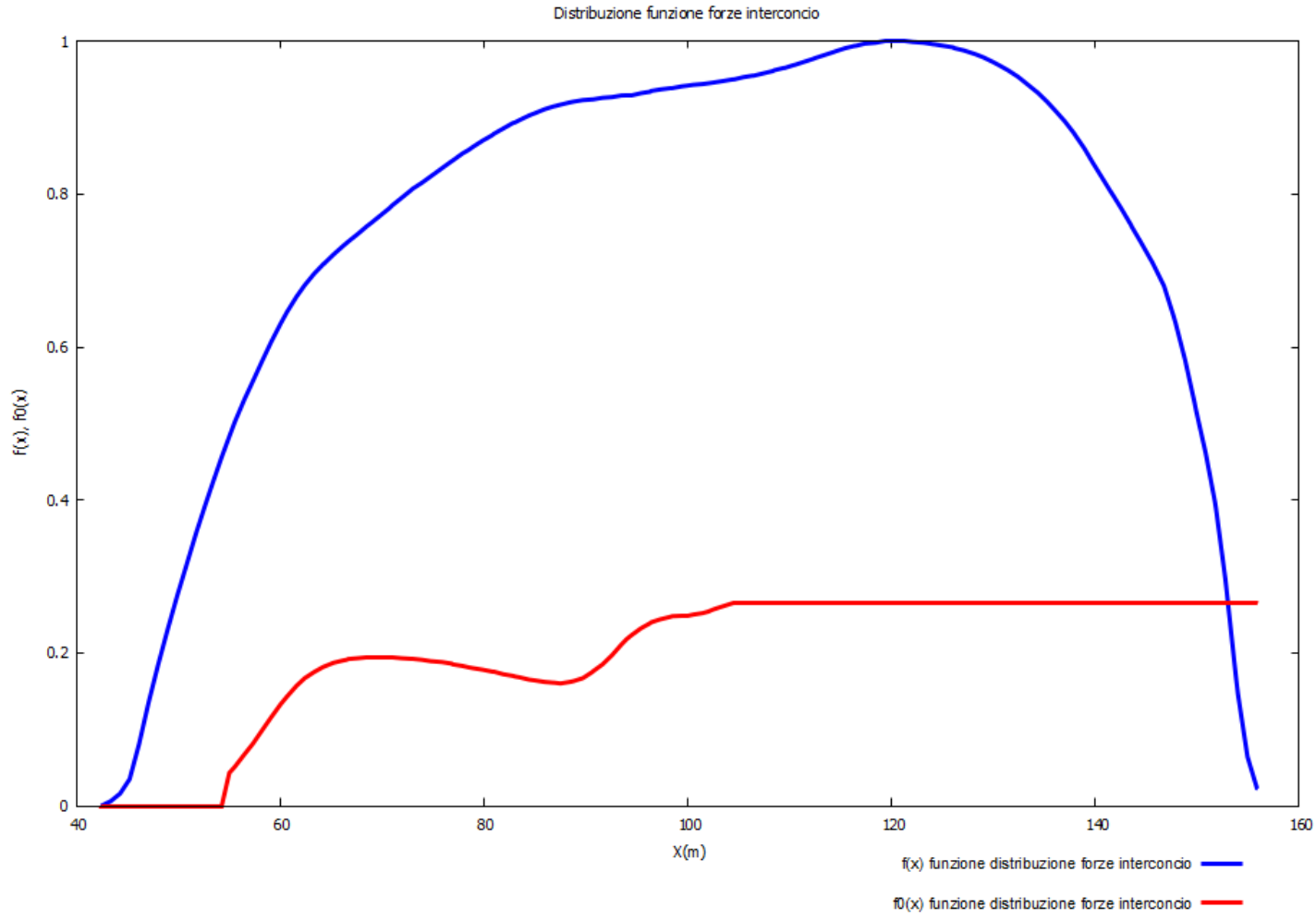




Metodo di calcolo: BORSELLI (2016)

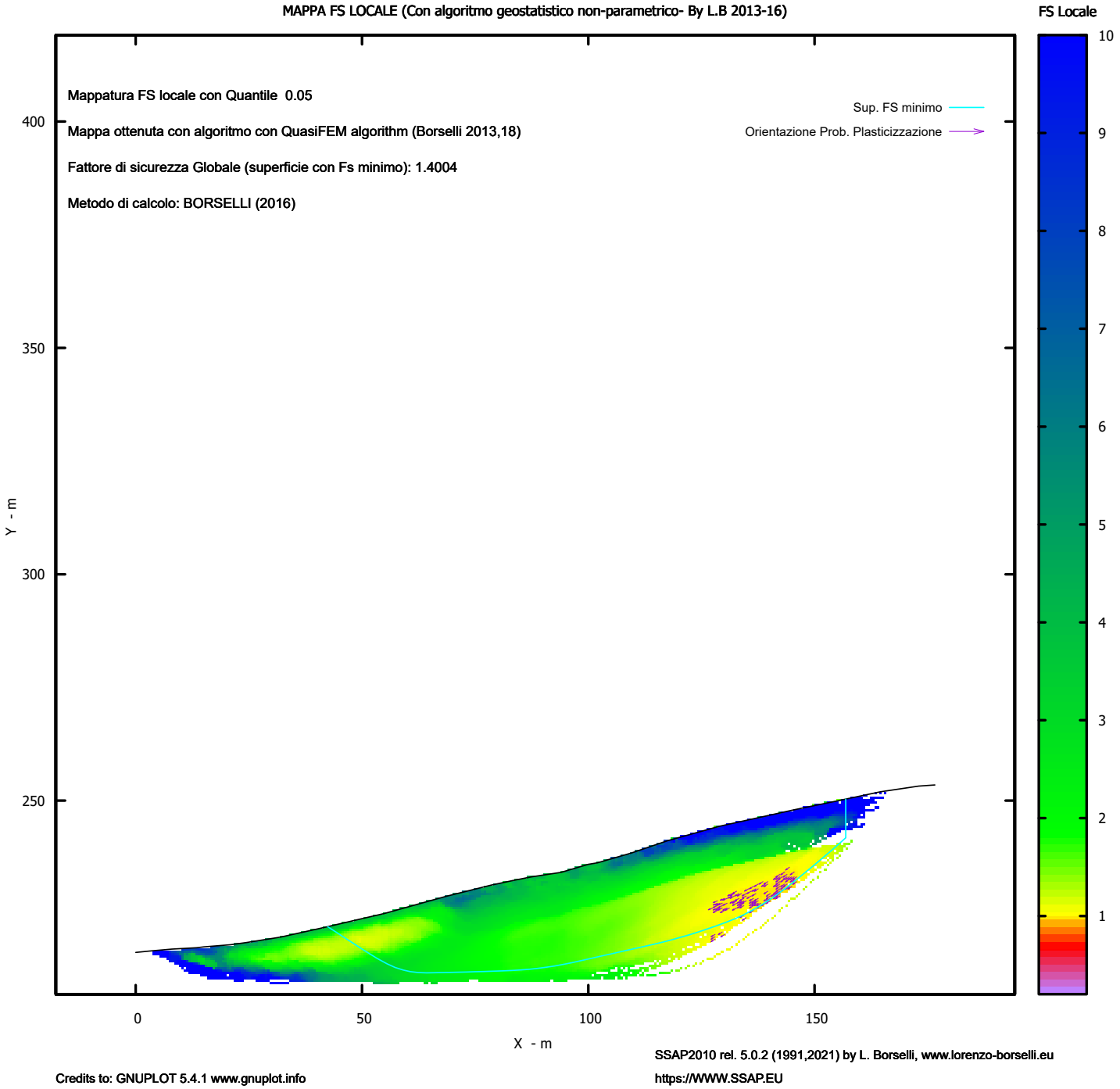
SSAP2010 (versione 5.0.2 - 2021) - DISTRIBUZIONE FORZE e PRESSIONI

18/11/21 15:09



Graphic rendering,Credits to: GNUPLOT 5.4.1 www.gnuplot.info

SSAP2010 rel. 5.0.2 (1991,2021) by L. Borselli - www.ssap.eu


MAPPA FS LOCALE (Con algoritmo geostatistico non-parametrico- By L.B 2013-16)
FS Locale
Mappatura FS locale con Quantile 0.05
Mappa ottenuta con algoritmo con QuasiFEM algorithm (Borselli 2013,18)
Fattore di sicurezza Globale (superficie con Fs minimo): 1.4004
Metodo di calcolo: BORSELLI (2016)
Sup. FS minimo
Orientazione Prob. Plasticizzazione
Y - m
X - m
400
350
300
250
0
50
100
150
10
9
8
7
6
5
4
3
2
1
Credits to: GNUPLOT 5.4.1 www.gnuplot.info
SSAP2010 rel. 5.0.2 (1991,2021) by L. Borselli, www.lorenzo-borselli.eu
https://WWW.SSAP.EU