"GUGLIELMO"

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/139/04/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 "GUGLIELMO" - UBICATO NEL COMUNE DI CRACO (MT) - REGIONE BASILICATA

Oggetto

PROGETTO DEFINITIVO

RELAZIONE GEOLOGICA

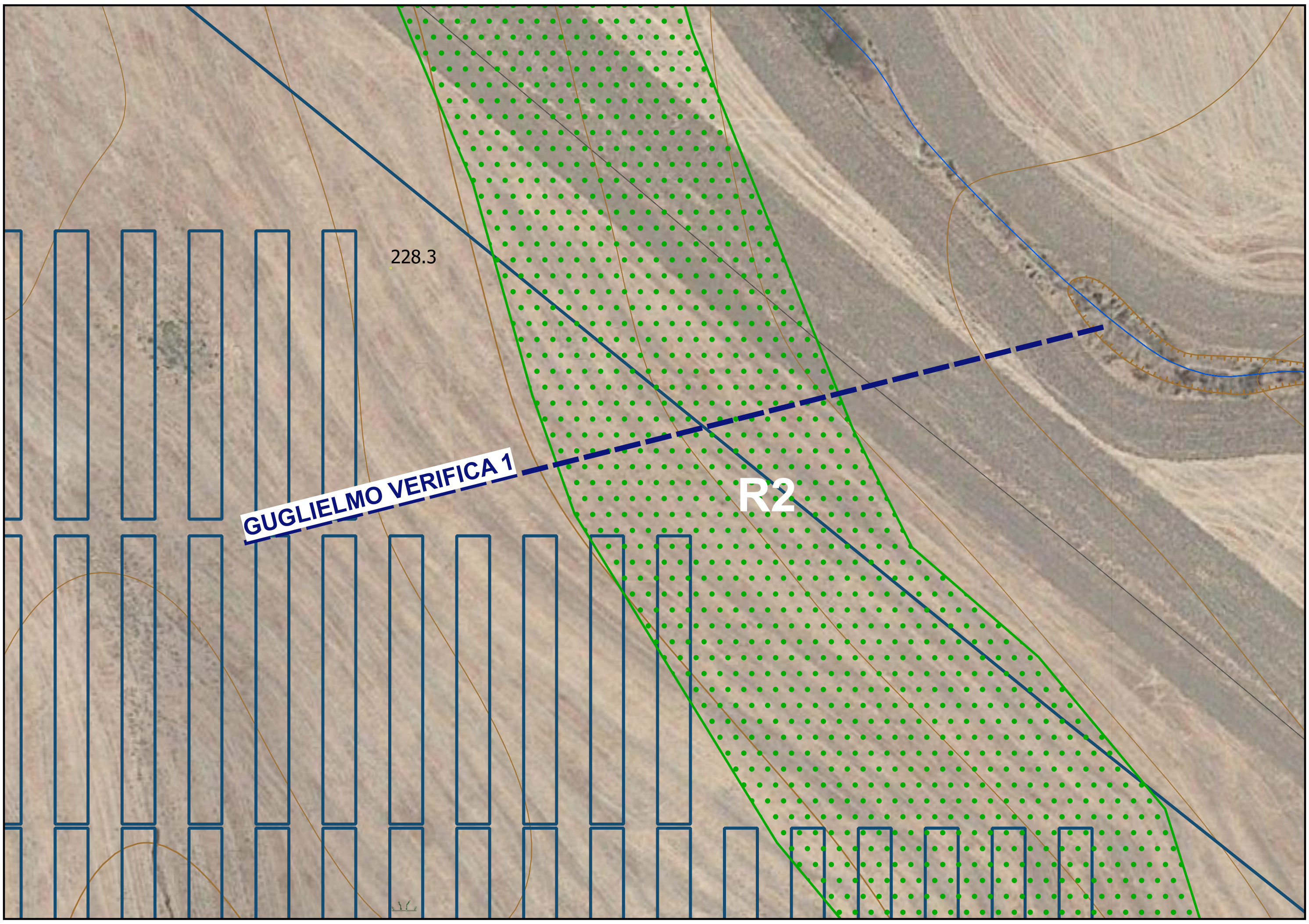
Analisi di stabilità dei pendii

A.2.7

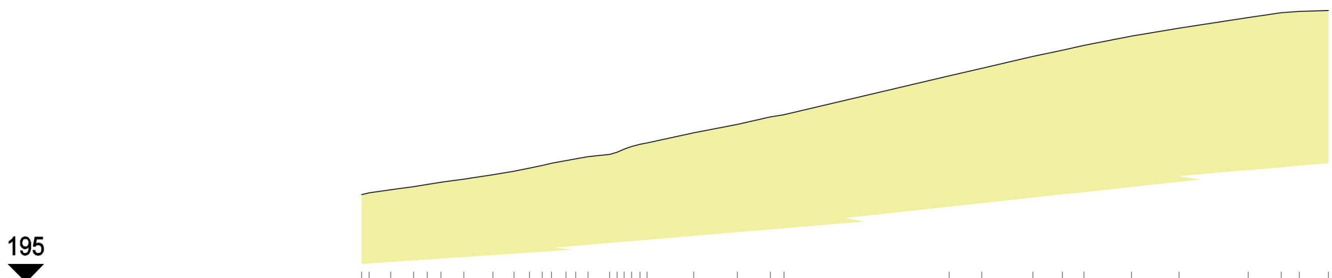
VERIFICA DI STABILITA' SEZIONE 1

CONDIZIONE DRENATA

SEZIONE DI VERIFICA N. 1



0 10 20 m



PICCHETTO	DISTANZE PROGRESSIVE	DISTANZE PARZIALI	QUOTE
1	0	1	206.99
2	1	3	207.25
3	4	3.12	207.67
4	7.12	1.88	208.09
5	9	1.89	208.38
6	10.89	3.11	208.69
7	14	4	209.09
8	18	2.89	209.74
9	20.89	2.11	210.19
10	23	1.75	210.65
11	24.75	1.25	210.96
12	26	2	211.3
13	28	1.33	211.62
14	29.33	1.67	211.88
15	31	3	212.17
16	34	1	212.48
17	35	1	212.79
18	36	1	213.24
19	37	1.12	213.61
20	38.12	0.98	213.88
21	39.1	6.4	214.05
22	45.5	6	215.43
23	51.5	4.5	216.63
24	56	1.9	217.63
25	57.9	22.6	217.93
26	80.5	4.5	223.26
27	85	7	224.24
28	92	4	225.9
29	96	3	226.74
30	99	6.5	227.4
31	105.5	6.5	228.67
32	112	9.5	229.74
33	121.5	4.5	231.22
34	126	2.5	231.86
35	128.5	4	232.07
36	132.5		232.18

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 GUGLIELMO\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	206.99	-	-	-	-	-	-
1.00	207.25	-	-	-	-	-	-
4.00	207.67	-	-	-	-	-	-
7.12	208.09	-	-	-	-	-	-
9.00	208.38	-	-	-	-	-	-
10.89	208.69	-	-	-	-	-	-
14.00	209.09	-	-	-	-	-	-
18.00	209.74	-	-	-	-	-	-
20.89	210.19	-	-	-	-	-	-
23.00	210.65	-	-	-	-	-	-
24.75	210.96	-	-	-	-	-	-
26.00	211.30	-	-	-	-	-	-
28.00	211.62	-	-	-	-	-	-
29.33	211.88	-	-	-	-	-	-
31.00	212.17	-	-	-	-	-	-
34.00	212.48	-	-	-	-	-	-
35.00	212.79	-	-	-	-	-	-
36.00	213.24	-	-	-	-	-	-
37.00	213.61	-	-	-	-	-	-
38.12	213.88	-	-	-	-	-	-
39.10	214.05	-	-	-	-	-	-
45.50	215.43	-	-	-	-	-	-
51.50	216.63	-	-	-	-	-	-
56.00	217.63	-	-	-	-	-	-
57.90	217.93	-	-	-	-	-	-
80.50	223.26	-	-	-	-	-	-
85.00	224.24	-	-	-	-	-	-
92.00	225.90	-	-	-	-	-	-
96.00	226.74	-	-	-	-	-	-
99.00	227.40	-	-	-	-	-	-
105.50	228.67	-	-	-	-	-	-
112.00	229.74	-	-	-	-	-	-
121.50	231.22	-	-	-	-	-	-
126.00	231.86	-	-	-	-	-	-
128.50	232.07	-	-	-	-	-	-
132.50	232.18	-	-	-	-	-	-

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)*: 5.3 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 2.65 121.90
LIVELLO MINIMO CONSIDERATO (Ymin): 184.32
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 15.90 129.85
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) 2.5526 - Min. - X Y Lambda= 0.2597

X	Y
18.54	209.82
28.59	203.95
33.04	201.50
35.82	200.22
37.94	199.52
40.22	199.13
42.07	199.06
44.24	199.25
46.69	199.70
49.96	200.50
52.92	201.23
55.66	201.89
58.31	202.51

60.87 203.11
63.44 203.71
66.04 204.30
68.69 204.89
71.40 205.50
73.94 206.11
76.43 206.78
78.86 207.48
81.37 208.28
83.82 209.12
86.37 210.05
89.03 211.09
91.95 212.29
94.54 213.44
97.02 214.65
99.39 215.91
101.88 217.36
104.53 219.04
107.61 221.15
112.07 224.38
116.68 227.82
116.68 230.47

Fattore di sicurezza (FS) 2.5549 - N.2 -- X Y Lambda= 0.2584
7.48 208.15
18.86 203.25
24.04 201.18
27.41 200.07
30.09 199.44
32.85 199.11
35.24 199.03
37.91 199.20
40.85 199.60
44.56 200.30
47.88 200.96
50.99 201.62
53.97 202.30
56.93 203.03
59.83 203.78
62.79 204.58
65.79 205.45
68.93 206.39
71.97 207.33
74.97 208.27
77.94 209.23
80.92 210.21
83.90 211.21
86.92 212.25
90.01 213.34
93.22 214.50
96.20 215.64
99.11 216.83
101.94 218.07
104.88 219.45
108.06 221.05
111.69 223.00
116.92 225.94
121.35 228.49
121.35 231.20

Fattore di sicurezza (FS) 2.5572 - N.3 -- X Y Lambda= 0.2656
6.15 207.96
15.51 203.34
19.85 201.32

22.70 200.17
25.02 199.43
27.37 198.92
29.44 198.63
31.73 198.50
34.24 198.52
37.39 198.70
40.10 198.92
42.62 199.19
45.00 199.52
47.44 199.93
49.77 200.40
52.19 200.96
54.69 201.61
57.44 202.39
60.03 203.16
62.55 203.93
65.01 204.72
67.49 205.54
69.94 206.37
72.41 207.25
74.91 208.17
77.49 209.14
80.03 210.09
82.54 211.01
85.04 211.92
87.53 212.82
90.05 213.71
92.59 214.60
95.20 215.50
97.92 216.43
100.38 217.35
102.78 218.33
105.09 219.37
107.53 220.55
110.14 221.94
113.15 223.67
117.51 226.33
121.06 228.56
121.06 231.15

Fattore di sicurezza (FS) 2.5597 - N.4 -- X Y Lambda= 0.2637
21.95 210.42
27.54 207.31
30.19 205.90
31.98 205.05
33.47 204.43
34.92 203.95
36.25 203.59
37.69 203.29
39.25 203.06
41.11 202.85
42.73 202.72
44.25 202.64
45.68 202.61
47.17 202.63
48.58 202.70
50.04 202.81
51.54 202.98
53.20 203.21
54.80 203.43
56.36 203.66
57.90 203.89
59.42 204.12
60.96 204.35

62.50 204.60
64.08 204.85
65.71 205.12
67.22 205.40
68.70 205.71
70.15 206.05
71.65 206.44
73.09 206.85
74.57 207.30
76.09 207.80
77.70 208.36
79.28 208.92
80.83 209.47
82.37 210.02
83.90 210.57
85.43 211.13
86.97 211.69
88.54 212.27
90.13 212.85
91.65 213.44
93.15 214.05
94.62 214.67
96.12 215.34
97.61 216.03
99.13 216.77
100.70 217.56
102.39 218.44
103.93 219.29
105.42 220.16
106.86 221.06
108.35 222.05
109.97 223.19
111.82 224.58
114.48 226.66
115.95 227.84
115.95 230.36

Fattore di sicurezza (FS) 2.5628 - N.5 -- X Y Lambda= 0.2581
20.75 210.17
28.96 206.89
32.83 205.43
35.42 204.60
37.56 204.04
39.68 203.67
41.60 203.45
43.70 203.35
45.96 203.36
48.70 203.49
51.07 203.66
53.29 203.88
55.39 204.17
57.56 204.54
59.63 204.95
61.77 205.46
63.98 206.04
66.42 206.76
68.74 207.42
71.00 208.05
73.23 208.66
75.45 209.24
77.67 209.82
79.91 210.38
82.21 210.94
84.59 211.50
86.81 212.08

88.98 212.68
91.10 213.33
93.29 214.05
95.43 214.80
97.63 215.63
99.90 216.54
102.37 217.57
104.64 218.57
106.83 219.60
108.96 220.66
111.16 221.81
113.54 223.14
116.25 224.74
120.14 227.13
123.10 228.99
123.10 231.45

Fattore di sicurezza (FS) 2.5643 - N.6 -- X Y Lambda= 0.2631
12.36 208.88
20.56 205.20
24.40 203.58
26.95 202.65
29.04 202.04
31.13 201.62
33.00 201.38
35.05 201.26
37.27 201.27
40.00 201.40
42.38 201.56
44.60 201.77
46.71 202.03
48.87 202.37
50.95 202.74
53.09 203.19
55.30 203.72
57.71 204.35
60.00 204.97
62.23 205.59
64.42 206.23
66.61 206.89
68.78 207.57
70.97 208.28
73.18 209.02
75.45 209.80
77.69 210.56
79.92 211.31
82.13 212.05
84.33 212.78
86.57 213.51
88.84 214.25
91.19 215.01
93.65 215.79
95.82 216.57
97.90 217.42
99.87 218.33
102.01 219.44
104.25 220.75
106.87 222.44
110.72 225.10
114.38 227.71
114.38 230.11

Fattore di sicurezza (FS) 2.5659 - N.7 -- X Y Lambda= 0.2614
8.42 208.29

17.60 204.90
21.83 203.45
24.61 202.68
26.86 202.24
29.14 202.02
31.15 201.98
33.36 202.12
35.75 202.42
38.69 202.94
41.38 203.39
43.91 203.79
46.37 204.15
48.79 204.48
51.20 204.79
53.66 205.07
56.19 205.34
58.86 205.60
61.30 205.89
63.67 206.24
65.96 206.64
68.35 207.12
70.65 207.65
73.02 208.26
75.46 208.95
78.10 209.77
80.64 210.57
83.10 211.37
85.52 212.18
87.95 213.01
90.38 213.87
92.84 214.76
95.36 215.70
98.00 216.70
100.44 217.69
102.81 218.72
105.12 219.79
107.51 220.98
110.10 222.37
113.07 224.05
117.33 226.60
119.94 228.20
119.94 230.98

Fattore di sicurezza (FS) 2.5670 - N.8 -- X Y Lambda= 0.2633
11.08 208.71
21.72 204.40
26.72 202.50
30.05 201.41
32.80 200.70
35.53 200.23
38.00 199.97
40.71 199.87
43.65 199.92
47.25 200.14
50.32 200.41
53.17 200.76
55.84 201.20
58.64 201.77
61.26 202.41
64.00 203.18
66.83 204.08
69.96 205.17
73.00 206.23
75.96 207.26
78.89 208.29

81.77 209.30
84.69 210.32
87.64 211.36
90.67 212.42
93.77 213.51
96.60 214.59
99.35 215.75
102.00 216.98
104.81 218.38
107.80 220.04
111.27 222.10
116.29 225.27
121.42 228.60
121.42 231.21

Fattore di sicurezza (FS) 2.5675 - N.9 -- X Y Lambda= 0.2589
16.05 209.42
24.67 205.59
28.71 203.89
31.39 202.92
33.60 202.27
35.80 201.83
37.78 201.57
39.95 201.43
42.31 201.42
45.21 201.54
47.71 201.70
50.02 201.92
52.20 202.21
54.47 202.60
56.61 203.03
58.84 203.57
61.16 204.19
63.71 204.95
66.14 205.66
68.50 206.33
70.83 206.97
73.14 207.59
75.46 208.20
77.84 208.79
80.30 209.39
82.90 210.01
85.20 210.64
87.40 211.34
89.49 212.11
91.74 213.04
93.85 214.02
96.06 215.16
98.38 216.45
100.99 218.00
103.45 219.43
105.81 220.77
108.11 222.05
110.42 223.30
112.98 224.64
115.85 226.10
119.92 228.12
120.75 228.53
120.75 231.10

Fattore di sicurezza (FS) 2.5696 - N.10 -- X Y Lambda= 0.2611
9.28 208.43
20.31 202.04
25.32 199.29

28.55	197.78
31.11	196.84
33.75	196.21
36.01	195.90
38.58	195.82
41.45	195.96
45.18	196.35
48.39	196.75
51.34	197.19
54.12	197.69
56.95	198.27
59.67	198.91
62.48	199.64
65.39	200.47
68.56	201.45
71.53	202.41
74.42	203.38
77.24	204.38
80.09	205.44
82.92	206.53
85.81	207.69
88.81	208.94
92.03	210.32
94.91	211.66
97.70	213.06
100.38	214.52
103.19	216.17
106.20	218.10
109.67	220.48
114.71	224.12
120.71	228.58
120.71	231.10

---------- 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	2.553	14348.3	5621.2	8165.0	Surplus
2	2.555	14936.2	5846.2	8505.4	Surplus
3	2.557	15524.9	6071.1	8846.7	Surplus
4	2.560	12353.0	4825.9	7044.5	Surplus
5	2.563	12436.6	4852.7	7098.6	Surplus
6	2.564	12549.1	4893.7	7166.0	Surplus
7	2.566	13091.1	5101.9	7478.9	Surplus
8	2.567	15214.5	5926.9	8694.9	Surplus
9	2.567	13454.5	5240.3	7690.1	Surplus
10	2.570	18608.2	7241.6	10642.5	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 7044.5

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	dx	alpha	W	ru	U	phi'	(c',Cu)
(m)	(m)	(°)	(kN/m)	(-)	(kPa)	(°)	(kPa)
18.536	0.768	-30.32	4.44	0.00	0.00	26.00	19.50
19.303	0.768	-30.32	13.32	0.00	0.00	26.00	19.50
20.071	0.768	-30.32	22.20	0.00	0.00	26.00	19.50
20.839	0.051	-30.32	1.80	0.00	0.00	26.00	19.50
20.890	0.768	-30.32	32.04	0.00	0.00	26.00	19.50
21.658	0.768	-30.32	41.67	0.00	0.00	26.00	19.50
22.425	0.575	-30.32	37.50	0.00	0.00	26.00	19.50
23.000	0.768	-30.32	58.25	0.00	0.00	26.00	19.50
23.768	0.768	-30.32	67.39	0.00	0.00	26.00	19.50
24.535	0.215	-30.32	20.49	0.00	0.00	26.00	19.50
24.750	0.768	-30.32	79.65	0.00	0.00	26.00	19.50
25.518	0.482	-30.32	55.31	0.00	0.00	26.00	19.50
26.000	0.768	-30.32	95.71	0.00	0.00	26.00	19.50
26.768	0.768	-30.32	104.64	0.00	0.00	26.00	19.50
27.535	0.465	-30.32	67.70	0.00	0.00	26.00	19.50
28.000	0.587	-30.32	90.24	0.00	0.00	26.00	19.50
28.587	0.743	-28.79	122.00	0.00	0.00	26.00	19.50
29.330	0.768	-28.79	134.64	0.00	0.00	26.00	19.50
30.098	0.768	-28.79	143.31	0.00	0.00	26.00	19.50
30.865	0.135	-28.79	26.06	0.00	0.00	26.00	19.50
31.000	0.768	-28.79	153.08	0.00	0.00	26.00	19.50
31.768	0.768	-28.79	160.91	0.00	0.00	26.00	19.50
32.535	0.505	-28.79	110.18	0.00	0.00	26.00	19.50
33.040	0.768	-24.69	173.35	0.00	0.00	26.00	19.50
33.808	0.192	-24.69	44.41	0.00	0.00	26.00	19.50
34.000	0.768	-24.69	183.03	0.00	0.00	26.00	19.50
34.768	0.232	-24.69	57.23	0.00	0.00	26.00	19.50
35.000	0.768	-24.69	195.90	0.00	0.00	26.00	19.50
35.768	0.056	-24.69	14.75	0.00	0.00	26.00	19.50
35.824	0.176	-18.31	46.67	0.00	0.00	26.00	19.50
36.000	0.768	-18.31	208.50	0.00	0.00	26.00	19.50
36.768	0.232	-18.31	64.78	0.00	0.00	26.00	19.50
37.000	0.768	-18.31	218.68	0.00	0.00	26.00	19.50
37.768	0.169	-18.31	49.15	0.00	0.00	26.00	19.50
37.937	0.183	-9.61	53.48	0.00	0.00	26.00	19.50
38.120	0.768	-9.61	226.85	0.00	0.00	26.00	19.50
38.888	0.212	-9.61	63.49	0.00	0.00	26.00	19.50
39.100	0.768	-9.61	232.35	0.00	0.00	26.00	19.50
39.868	0.349	-9.61	107.22	0.00	0.00	26.00	19.50
40.217	0.768	-2.44	238.30	0.00	0.00	26.00	19.50
40.984	0.768	-2.44	241.40	0.00	0.00	26.00	19.50
41.752	0.316	-2.44	100.41	0.00	0.00	26.00	19.50
42.068	0.768	5.03	244.99	0.00	0.00	26.00	19.50
42.836	0.768	5.03	246.52	0.00	0.00	26.00	19.50
43.604	0.633	5.03	204.36	0.00	0.00	26.00	19.50
44.236	0.768	10.47	248.73	0.00	0.00	26.00	19.50
45.004	0.496	10.47	160.93	0.00	0.00	26.00	19.50
45.500	0.768	10.47	249.25	0.00	0.00	26.00	19.50
46.268	0.420	10.47	136.32	0.00	0.00	26.00	19.50
46.687	0.768	13.83	249.16	0.00	0.00	26.00	19.50
47.455	0.768	13.83	248.60	0.00	0.00	26.00	19.50
48.222	0.768	13.83	248.05	0.00	0.00	26.00	19.50
48.990	0.768	13.83	247.49	0.00	0.00	26.00	19.50
49.758	0.199	13.83	63.93	0.00	0.00	26.00	19.50
49.956	0.768	13.69	246.81	0.00	0.00	26.00	19.50
50.724	0.768	13.69	246.29	0.00	0.00	26.00	19.50
51.491	0.009	13.69	2.76	0.00	0.00	26.00	19.50
51.500	0.768	13.69	245.89	0.00	0.00	26.00	19.50
52.268	0.651	13.69	208.42	0.00	0.00	26.00	19.50
52.919	0.768	13.53	245.44	0.00	0.00	26.00	19.50
53.686	0.768	13.53	245.22	0.00	0.00	26.00	19.50
54.454	0.768	13.53	245.00	0.00	0.00	26.00	19.50
55.222	0.440	13.53	140.43	0.00	0.00	26.00	19.50
55.662	0.338	13.35	107.77	0.00	0.00	26.00	19.50

56.000	0.768	13.35	244.21	0.00	0.00	26.00	19.50
56.768	0.768	13.35	243.25	0.00	0.00	26.00	19.50
57.535	0.365	13.35	115.27	0.00	0.00	26.00	19.50
57.900	0.411	13.35	129.72	0.00	0.00	26.00	19.50
58.311	0.768	13.17	242.32	0.00	0.00	26.00	19.50
59.079	0.768	13.17	242.35	0.00	0.00	26.00	19.50
59.846	0.768	13.17	242.37	0.00	0.00	26.00	19.50
60.614	0.251	13.17	79.35	0.00	0.00	26.00	19.50
60.865	0.768	13.00	242.42	0.00	0.00	26.00	19.50
61.633	0.768	13.00	242.48	0.00	0.00	26.00	19.50
62.400	0.768	13.00	242.54	0.00	0.00	26.00	19.50
63.168	0.273	13.00	86.28	0.00	0.00	26.00	19.50
63.441	0.768	12.83	242.64	0.00	0.00	26.00	19.50
64.208	0.768	12.83	242.74	0.00	0.00	26.00	19.50
64.976	0.768	12.83	242.84	0.00	0.00	26.00	19.50
65.744	0.294	12.83	92.90	0.00	0.00	26.00	19.50
66.037	0.768	12.66	242.99	0.00	0.00	26.00	19.50
66.805	0.768	12.66	243.12	0.00	0.00	26.00	19.50
67.572	0.768	12.66	243.26	0.00	0.00	26.00	19.50
68.340	0.346	12.66	109.70	0.00	0.00	26.00	19.50
68.686	0.768	12.50	243.47	0.00	0.00	26.00	19.50
69.454	0.768	12.50	243.64	0.00	0.00	26.00	19.50
70.221	0.768	12.50	243.81	0.00	0.00	26.00	19.50
70.989	0.415	12.50	132.00	0.00	0.00	26.00	19.50
71.404	0.768	13.66	243.95	0.00	0.00	26.00	19.50
72.172	0.768	13.66	243.86	0.00	0.00	26.00	19.50
72.939	0.768	13.66	243.77	0.00	0.00	26.00	19.50
73.707	0.236	13.66	75.08	0.00	0.00	26.00	19.50
73.944	0.768	14.93	243.52	0.00	0.00	26.00	19.50
74.711	0.768	14.93	243.15	0.00	0.00	26.00	19.50
75.479	0.768	14.93	242.78	0.00	0.00	26.00	19.50
76.246	0.183	14.93	57.73	0.00	0.00	26.00	19.50
76.429	0.768	16.26	242.18	0.00	0.00	26.00	19.50
77.197	0.768	16.26	241.51	0.00	0.00	26.00	19.50
77.964	0.768	16.26	240.84	0.00	0.00	26.00	19.50
78.732	0.123	16.26	38.59	0.00	0.00	26.00	19.50
78.855	0.768	17.55	239.92	0.00	0.00	26.00	19.50
79.623	0.768	17.55	238.95	0.00	0.00	26.00	19.50
80.390	0.110	17.55	34.09	0.00	0.00	26.00	19.50
80.500	0.768	17.55	237.74	0.00	0.00	26.00	19.50
81.268	0.101	17.55	31.24	0.00	0.00	26.00	19.50
81.369	0.768	18.87	236.25	0.00	0.00	26.00	19.50
82.136	0.768	18.87	234.76	0.00	0.00	26.00	19.50
82.904	0.768	18.87	233.28	0.00	0.00	26.00	19.50
83.672	0.153	18.87	46.18	0.00	0.00	26.00	19.50
83.824	0.768	20.15	231.35	0.00	0.00	26.00	19.50
84.592	0.408	20.15	122.32	0.00	0.00	26.00	19.50
85.000	0.768	20.15	228.72	0.00	0.00	26.00	19.50
85.768	0.599	20.15	177.51	0.00	0.00	26.00	19.50
86.367	0.768	21.33	225.81	0.00	0.00	26.00	19.50
87.135	0.768	21.33	223.97	0.00	0.00	26.00	19.50
87.902	0.768	21.33	222.13	0.00	0.00	26.00	19.50
88.670	0.357	21.33	102.58	0.00	0.00	26.00	19.50
89.026	0.768	22.34	219.32	0.00	0.00	26.00	19.50
89.794	0.768	22.34	217.24	0.00	0.00	26.00	19.50
90.562	0.768	22.34	215.15	0.00	0.00	26.00	19.50
91.329	0.622	22.34	172.89	0.00	0.00	26.00	19.50
91.952	0.048	24.03	13.42	0.00	0.00	26.00	19.50
92.000	0.768	24.03	210.85	0.00	0.00	26.00	19.50
92.768	0.768	24.03	208.02	0.00	0.00	26.00	19.50
93.535	0.768	24.03	205.20	0.00	0.00	26.00	19.50
94.303	0.239	24.03	63.37	0.00	0.00	26.00	19.50
94.542	0.768	25.98	201.24	0.00	0.00	26.00	19.50
95.310	0.690	25.98	178.15	0.00	0.00	26.00	19.50
96.000	0.768	25.98	194.98	0.00	0.00	26.00	19.50
96.768	0.252	25.98	63.39	0.00	0.00	26.00	19.50

97.020	0.768	28.06	190.45	0.00	0.00	26.00	19.50
97.788	0.768	28.06	186.70	0.00	0.00	26.00	19.50
98.555	0.445	28.06	106.49	0.00	0.00	26.00	19.50
99.000	0.386	28.06	91.43	0.00	0.00	26.00	19.50
99.386	0.768	30.04	178.31	0.00	0.00	26.00	19.50
100.154	0.768	30.04	173.72	0.00	0.00	26.00	19.50
100.922	0.768	30.04	169.13	0.00	0.00	26.00	19.50
101.689	0.191	30.04	41.38	0.00	0.00	26.00	19.50
101.880	0.768	32.49	163.04	0.00	0.00	26.00	19.50
102.648	0.768	32.49	157.75	0.00	0.00	26.00	19.50
103.415	0.768	32.49	152.46	0.00	0.00	26.00	19.50
104.183	0.348	32.49	67.38	0.00	0.00	26.00	19.50
104.531	0.768	34.37	144.48	0.00	0.00	26.00	19.50
105.299	0.201	34.37	36.92	0.00	0.00	26.00	19.50
105.500	0.768	34.37	136.90	0.00	0.00	26.00	19.50
106.268	0.768	34.37	130.68	0.00	0.00	26.00	19.50
107.035	0.570	34.37	93.05	0.00	0.00	26.00	19.50
107.605	0.768	35.95	119.58	0.00	0.00	26.00	19.50
108.373	0.768	35.95	112.86	0.00	0.00	26.00	19.50
109.141	0.768	35.95	106.13	0.00	0.00	26.00	19.50
109.908	0.768	35.95	99.41	0.00	0.00	26.00	19.50
110.676	0.768	35.95	92.69	0.00	0.00	26.00	19.50
111.443	0.557	35.95	63.00	0.00	0.00	26.00	19.50
112.000	0.071	35.95	7.79	0.00	0.00	26.00	19.50
112.071	0.768	36.72	80.29	0.00	0.00	26.00	19.50
112.839	0.768	36.72	73.21	0.00	0.00	26.00	19.50
113.606	0.768	36.72	66.14	0.00	0.00	26.00	19.50
114.374	0.768	36.72	59.06	0.00	0.00	26.00	19.50
115.141	0.768	36.72	51.99	0.00	0.00	26.00	19.50
115.909	0.768	36.72	44.92	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 (--)		
18.536	0.000	209.823	-0.436	0.0000000000E+000	0.0000000000E+000	0.0000000000E+000	0.085	50.000	50.000		
19.303	0.143	209.517	-0.436	3.2402060557E+000	5.7563266532E-003	9.3519930900E+000	0.085	50.000	50.000		
20.071	0.229	209.155	-0.397	1.4357265956E+001	1.7794845477E-001	1.5840892913E+001	0.085	50.000	35.436		
20.839	0.432	208.908	-0.322	2.7559290805E+001	6.5323316062E-001	2.3582559044E+001	0.085	20.240	18.682		
20.890	0.445	208.891	-0.310	2.8793972066E+001	7.1512260550E-001	2.4014532431E+001	0.085	18.927	17.640		
21.658	0.656	208.654	-0.342	4.7277216486E+001	1.8468628418E+000	2.7467908694E+001	0.085	9.954	9.768		
22.425	0.817	208.367	-0.352	7.0962958568E+001	4.1362568141E+000	2.8523700804E+001	0.114	6.731	6.611		
23.000	0.969	208.182	-0.324	8.6353975240E+001	6.2138624645E+000	2.8507371173E+001	0.145	5.803	5.669		
23.768	1.167	207.932	-0.312	1.1001044315E+002	1.0647472312E+001	3.5311087012E+001	0.206	5.142	4.961		
24.535	1.388	207.704	-0.294	1.4056388136E+002	1.6381773749E+001	3.8405903790E+001	0.264	4.828	4.586		
24.750	1.453	207.643	-0.302	1.4872910948E+002	1.7839485388E+001	4.1033069471E+001	0.275	4.758	4.502		
25.518	1.666	207.407	-0.310	1.8850604666E+002	2.5188487009E+001	5.8926836742E+001	0.325	4.577	4.249		
26.000	1.797	207.256	-0.311	2.1908670588E+002	3.0960569763E+001	6.8111651410E+001	0.358	4.507	4.125		
26.768	2.008	207.018	-0.296	2.7713264540E+002	4.2118449631E+001	8.3892538687E+001	0.413	4.460	3.975		
27.535	2.240	206.801	-0.275	3.4787930422E+002	5.5965134659E+001	9.8599816766E+001	0.467	4.488	3.881		
28.000	2.389	206.679	-0.278	3.9551843110E+002	6.5199039060E+001	1.1630714791E+002	0.496	4.519	3.838		
28.587	2.562	206.509	-0.282	4.7397550453E+002	8.0678984502E+001	1.4076153531E+002	0.538	4.560	3.778		
29.330	2.765	206.303	-0.276	5.8522626527E+002	1.0302697275E+002	1.6071181135E+002	0.587	4.610	3.706		

30.098	2.975	206.092	-0.273	7.1734972974E+002	1.3025086175E+002	1.8594908901E+002	0.635	4.637	3.627
30.865	3.190	205.884	-0.265	8.7069701995E+002	1.6280439756E+002	1.9716391348E+002	0.682	4.596	3.538
31.000	3.231	205.852	-0.234	8.9721112507E+002	1.6853390426E+002	1.9788562474E+002	0.690	4.584	3.523
31.768	3.474	205.673	-0.218	1.0542672520E+003	2.0299792448E+002	2.0644437713E+002	0.730	4.478	3.434
32.535	3.740	205.517	-0.193	1.2141464349E+003	2.3897539638E+002	2.0271047710E+002	0.764	4.327	3.347
33.040	3.929	205.428	-0.164	1.3147059687E+003	2.6200759296E+002	1.9880568653E+002	0.784	4.214	3.294
33.808	4.161	205.308	-0.150	1.4670337878E+003	2.9776169841E+002	1.7886198847E+002	0.812	4.033	3.215
34.000	4.226	205.284	-0.111	1.5004297369E+003	3.0572786307E+002	1.7376316758E+002	0.818	3.992	3.199
34.768	4.496	205.201	-0.103	1.6331937888E+003	3.3807719653E+002	1.6273435952E+002	0.837	3.821	3.131
35.000	4.582	205.181	-0.077	1.6702931191E+003	3.4720908474E+002	1.5819635792E+002	0.842	3.773	3.112
35.768	4.878	205.124	-0.073	1.7880681005E+003	3.7669681698E+002	1.4597358284E+002	0.856	3.620	3.054
35.824	4.901	205.120	-0.062	1.7962281978E+003	3.7875665552E+002	1.4686736701E+002	0.857	3.610	3.050
36.000	4.948	205.110	-0.048	1.8229156152E+003	3.8560099483E+002	1.5057822176E+002	0.860	3.577	3.037
36.768	5.168	205.075	-0.041	1.9357927985E+003	4.1529999975E+002	1.3258085448E+002	0.876	3.438	2.980
37.000	5.238	205.069	-0.018	1.9655858640E+003	4.2332634357E+002	1.2764258459E+002	0.880	3.402	2.965
37.768	5.480	205.057	-0.013	2.0621518862E+003	4.5002909176E+002	1.2077530486E+002	0.895	3.287	2.913
37.937	5.536	205.056	-0.000	2.0824111308E+003	4.5583755628E+002	1.1896288238E+002	0.899	3.263	2.902
38.120	5.567	205.057	0.010	2.1040536394E+003	4.6210707174E+002	1.1823390660E+002	0.903	3.238	2.890
38.888	5.706	205.066	0.014	2.1949142150E+003	4.8924288094E+002	1.0932678263E+002	0.921	3.138	2.838
39.100	5.747	205.070	0.037	2.2176033137E+003	4.9624077870E+002	1.0840461311E+002	0.925	3.114	2.825
39.868	5.909	205.102	0.046	2.3051977905E+003	5.2431268881E+002	1.0417138617E+002	0.944	3.018	2.771
40.217	5.988	205.122	0.072	2.3399939330E+003	5.3612814712E+002	1.0023675671E+002	0.952	2.978	2.748
40.984	6.081	205.183	0.092	2.4179289332E+003	5.6371943327E+002	9.6924642635E+001	0.973	2.885	2.695
41.752	6.195	205.264	0.109	2.4887935373E+003	5.9054978163E+002	7.5931027021E+001	0.994	2.793	2.643
42.068	6.246	205.301	0.131	2.5106824655E+003	5.9957273895E+002	6.7619152867E+001	1.001	2.758	2.625
42.836	6.283	205.406	0.144	2.5596893151E+003	6.2080286623E+002	5.6825045898E+001	1.019	2.673	2.583
43.604	6.332	205.523	0.146	2.5979207995E+003	6.3906288130E+002	4.1211687327E+001	1.035	2.593	2.545
44.236	6.365	205.611	0.171	2.6195141330E+003	6.5067912060E+002	2.8549311497E+001	1.046	2.532	2.519
45.004	6.374	205.762	0.197	2.6362343249E+003	6.6147676211E+002	1.4342168975E+001	1.058	2.466	2.493
45.500	6.380	205.860	0.193	2.6409636226E+003	6.6590217244E+002	6.7915240188E+000	1.063	2.430	2.479
46.268	6.385	206.006	0.191	2.6429187132E+003	6.7067402610E+002	-1.7490109403E+000	1.070	2.381	2.462
46.687	6.387	206.087	0.215	2.6411994801E+003	6.7197519563E+002	-5.5453668510E+000	1.072	2.359	2.454
47.455	6.373	206.261	0.228	2.6349094545E+003	6.7294165502E+002	-1.0100706404E+001	1.076	2.326	2.442
48.222	6.359	206.436	0.228	2.6256927825E+003	6.7225670764E+002	-1.3225338796E+001	1.079	2.304	2.434
48.990	6.345	206.611	0.228	2.6146057926E+003	6.7032997762E+002	-1.5125992594E+001	1.080	2.289	2.428
49.758	6.330	206.786	0.228	2.6024712193E+003	6.6766643027E+002	-1.7264513265E+001	1.080	2.280	2.424
49.956	6.327	206.831	0.226	2.5989684014E+003	6.6680224612E+002	-1.7763343180E+001	1.080	2.278	2.423
50.724	6.313	207.005	0.222	2.5849706650E+003	6.6307294127E+002	-1.8181416268E+001	1.079	2.274	2.421
51.491	6.294	207.172	0.218	2.5710561237E+003	6.5913567594E+002	-1.6439172849E+001	1.078	2.273	2.420
51.500	6.293	207.174	0.220	2.5709147148E+003	6.5909423938E+002	-1.6443958261E+001	1.078	2.273	2.420
52.268	6.275	207.342	0.223	2.5566690863E+003	6.5484760382E+002	-1.8758326190E+001	1.076	2.273	2.420
52.919	6.264	207.490	0.225	2.5443420459E+003	6.5103321735E+002	-1.8768401440E+001	1.074	2.275	2.421
53.686	6.251	207.661	0.223	2.5300795683E+003	6.4653804778E+002	-1.8439052574E+001	1.071	2.278	2.422
54.454	6.237	207.832	0.226	2.5160342425E+003	6.4206982870E+002	-1.8422714050E+001	1.069	2.281	2.423
55.222	6.228	208.008	0.231	2.5017968479E+003	6.3753896557E+002	-1.8781269659E+001	1.066	2.285	2.424
55.662	6.226	208.112	0.228	2.4934688306E+003	6.3489860226E+002	-1.8074290717E+001	1.065	2.287	2.425
56.000	6.220	208.186	0.218	2.4875773478E+003	6.3304328244E+002	-1.7330118501E+001	1.064	2.289	2.425
56.768	6.204	208.352	0.216	2.4744464916E+003	6.2893903872E+002	-1.6904861054E+001	1.062	2.292	2.426
57.535	6.187	208.518	0.215	2.4616248494E+003	6.2499025395E+002	-1.6367727364E+001	1.061	2.296	2.426
57.900	6.179	208.596	0.211	2.4557122536E+003	6.2321625906E+002	-1.5895270181E+001	1.060	2.297	2.426
58.311	6.167	208.681	0.211	2.4493254460E+003	6.2131432057E+002	-1.5547351204E+001	1.059	2.299	2.426
59.079	6.150	208.845	0.215	2.4373846879E+003	6.1782898506E+002	-1.5577995333E+001	1.057	2.302	2.425
59.846	6.138	209.012	0.227	2.4254099640E+003	6.1440956239E+002	-1.6078573300E+001	1.056	2.305	2.423
60.614	6.140	209.194	0.236	2.4127007140E+003	6.1087977237E+002	-1.6127066572E+001	1.054	2.308	2.420
60.865	6.140	209.252	0.239	2.4086833413E+003	6.0977913526E+002	-1.6099979829E+001	1.054	2.309	2.418
61.633	6.148	209.438	0.235	2.3960583926E+003	6.0638346640E+002	-1.5746571738E+001	1.052	2.312	2.414
62.400	6.146	209.612	0.235	2.3845090593E+003	6.0337738994E+002	-1.5369573240E+001	1.051	2.314	2.409
63.168	6.154	209.798	0.243	2.3724628821E+003	6.0031730752E+002	-1.5782194829E+001	1.050	2.317	2.403
63.441	6.159	209.865	0.237	2.3681451847E+003	5.9923222594E+002	-1.5541287930E+001	1.049	2.318	2.400
64.208	6.163	210.045	0.229	2.3568038167E+003	5.9643463106E+002	-1.4337004918E+001	1.048	2.320	2.393
64.976	6.160	210.217	0.228	2.3461348826E+003	5.9384735456E+002	-1.4029649076E+001	1.047	2.322	2.385
65.744	6.163	210.394	0.230	2.3352653702E+003	5.9121446206E+002	-1.3820226822E+001	1.046	2.324	2.377
66.037	6.163	210.461	0.234	2.3312464325E+003	5.9023817413E+002	-1.3832823776E+001	1.046	2.325	2.373
66.805	6.172	210.642	0.230	2.3203419670E+003	5.8757078088E+002	-1.3788339136E+001	1.045	2.326	2.364
67.572	6.172	210.814	0.229	2.3100784472E+003	5.8503191171E+002	-1.3760186705E+001	1.044	2.327	2.354
68.340	6.179	210.994	0.234	2.2992172016E+003	5.8227276692E+002	-1.4178747759E+001	1.043	2.327	2.343

68.686	6.182	211.075	0.238	2.2943066515E+003	5.8099606158E+002	-1.4407243298E+001	1.042	2.327	2.338
69.454	6.197	211.260	0.235	2.2828809094E+003	5.7796452855E+002	-1.4799511827E+001	1.041	2.325	2.327
70.221	6.203	211.436	0.238	2.2715863046E+003	5.7487813961E+002	-1.5698153927E+001	1.039	2.321	2.316
70.989	6.221	211.624	0.245	2.2587809588E+003	5.7126159848E+002	-1.7019981265E+001	1.037	2.316	2.304
71.404	6.230	211.725	0.242	2.2516358200E+003	5.6921176875E+002	-1.7513480389E+001	1.036	2.312	2.298
72.172	6.229	211.911	0.237	2.2377515805E+003	5.6518090104E+002	-1.8384710080E+001	1.033	2.305	2.287
72.939	6.221	212.090	0.243	2.2234114437E+003	5.6094808252E+002	-2.0295681870E+001	1.031	2.298	2.278
73.707	6.228	212.283	0.253	2.2065934627E+003	5.5589074637E+002	-2.2948324397E+001	1.028	2.289	2.268
73.944	6.231	212.343	0.251	2.2010914598E+003	5.5422447468E+002	-2.3397897553E+001	1.027	2.286	2.265
74.711	6.218	212.535	0.253	2.1828081243E+003	5.4867071955E+002	-2.5112210450E+001	1.023	2.276	2.257
75.479	6.210	212.731	0.262	2.1625389630E+003	5.4247176117E+002	-2.7964213449E+001	1.020	2.267	2.251
76.246	6.211	212.938	0.267	2.1398772062E+003	5.3551334865E+002	-3.0257927647E+001	1.015	2.258	2.246
76.429	6.210	212.985	0.262	2.1343176356E+003	5.3380892346E+002	-3.0449564733E+001	1.014	2.256	2.245
77.197	6.188	213.187	0.255	2.1108906799E+003	5.2664097545E+002	-3.0388981653E+001	1.010	2.248	2.242
77.964	6.153	213.376	0.252	2.0876641909E+003	5.1953805604E+002	-3.1755865307E+001	1.005	2.241	2.241
78.732	6.127	213.574	0.260	2.0621387829E+003	5.1173700732E+002	-3.5154935653E+001	1.000	2.235	2.241
78.855	6.125	213.607	0.265	2.0577698511E+003	5.1040429518E+002	-3.5526767017E+001	0.999	2.234	2.241
79.623	6.085	213.810	0.254	2.0301807992E+003	5.0201065623E+002	-3.5134547721E+001	0.994	2.229	2.243
80.390	6.029	213.997	0.244	2.0038309697E+003	4.9400605332E+002	-3.4956034786E+001	0.989	2.225	2.246
80.500	6.021	214.024	0.247	1.9999844347E+003	4.9283614283E+002	-3.5187230854E+001	0.988	2.224	2.247
81.268	5.968	214.214	0.250	1.9722159904E+003	4.8436884571E+002	-3.9669662511E+001	0.983	2.221	2.251
81.369	5.963	214.241	0.258	1.9681563553E+003	4.8312488271E+002	-3.9983409989E+001	0.982	2.221	2.252
82.136	5.898	214.438	0.253	1.9383196532E+003	4.7398415274E+002	-3.8865312000E+001	0.976	2.218	2.257
82.904	5.828	214.630	0.262	1.9084899702E+003	4.6476254263E+002	-4.1196055671E+001	0.970	2.217	2.262
83.672	5.776	214.840	0.275	1.8750750890E+003	4.5429594432E+002	-4.4264471851E+001	0.962	2.216	2.267
83.824	5.766	214.883	0.287	1.8683008625E+003	4.5216550845E+002	-4.4796378171E+001	0.961	2.216	2.268
84.592	5.706	215.104	0.287	1.8324230611E+003	4.4079492658E+002	-4.6659639352E+001	0.952	2.216	2.273
85.000	5.672	215.220	0.291	1.8133904212E+003	4.3469919583E+002	-4.7356157960E+001	0.948	2.216	2.275
85.768	5.617	215.446	0.313	1.7759727691E+003	4.2263165208E+002	-5.2953569735E+001	0.937	2.217	2.279
86.367	5.599	215.648	0.338	1.7422655957E+003	4.1170147526E+002	-5.6659564551E+001	0.928	2.218	2.282
87.135	5.560	215.909	0.329	1.6983599088E+003	3.9742677347E+002	-5.5712627871E+001	0.915	2.220	2.284
87.902	5.505	216.154	0.320	1.6567350561E+003	3.8391227877E+002	-5.4527323952E+001	0.902	2.222	2.286
88.670	5.451	216.400	0.329	1.6146490587E+003	3.7032367504E+002	-5.8435590366E+001	0.889	2.225	2.289
89.026	5.436	216.524	0.345	1.5932107509E+003	3.6346737786E+002	-5.9875809594E+001	0.882	2.226	2.290
89.794	5.384	216.787	0.332	1.5476398017E+003	3.4899638105E+002	-5.7815082120E+001	0.867	2.229	2.293
90.562	5.315	217.034	0.316	1.5044525041E+003	3.3549117932E+002	-5.5479937968E+001	0.853	2.233	2.298
91.329	5.238	217.272	0.311	1.4624664897E+003	3.2259792725E+002	-5.5070624288E+001	0.840	2.236	2.303
91.952	5.176	217.466	0.312	1.4280091439E+003	3.1216302953E+002	-5.7347534250E+001	0.829	2.240	2.309
92.000	5.170	217.481	0.308	1.4252205958E+003	3.1132757171E+002	-5.7362193737E+001	0.828	2.240	2.309
92.768	5.063	217.717	0.318	1.3828804972E+003	2.9873762148E+002	-5.7271984823E+001	0.815	2.245	2.318
93.535	4.973	217.969	0.336	1.3372961170E+003	2.8536117761E+002	-6.0896935842E+001	0.800	2.251	2.329
94.303	4.895	218.233	0.349	1.2893909603E+003	2.7146674780E+002	-6.5472609634E+001	0.785	2.259	2.341
94.542	4.875	218.320	0.340	1.2735005861E+003	2.6689432132E+002	-6.5042673488E+001	0.779	2.261	2.346
95.310	4.756	218.575	0.334	1.2269844421E+003	2.5366874768E+002	-6.1125736259E+001	0.764	2.269	2.360
96.000	4.652	218.807	0.355	1.1844582195E+003	2.4169376971E+002	-6.4423321196E+001	0.750	2.277	2.374
96.768	4.563	219.092	0.375	1.1325964024E+003	2.2725390299E+002	-6.9823882980E+001	0.731	2.288	2.393
97.020	4.538	219.190	0.384	1.1147926616E+003	2.2234651664E+002	-7.0326663862E+001	0.724	2.292	2.399
97.788	4.423	219.484	0.369	1.0613707028E+003	2.0774656231E+002	-6.6783061482E+001	0.704	2.306	2.420
98.555	4.286	219.757	0.364	1.0122666903E+003	1.9459029729E+002	-6.6290475603E+001	0.686	2.320	2.441
99.000	4.218	219.925	0.379	9.8217647694E+002	1.8668781912E+002	-6.7633575937E+001	0.674	2.330	2.455
99.386	4.158	220.072	0.410	9.5604371198E+002	1.7985864989E+002	-6.9998029343E+001	0.664	2.338	2.467
100.154	4.041	220.398	0.418	8.9870528172E+002	1.6525654417E+002	-7.2857366355E+001	0.641	2.360	2.496
100.922	3.912	220.713	0.411	8.4419241188E+002	1.5172100390E+002	-7.0630715021E+001	0.619	2.384	2.527
101.689	3.784	221.030	0.419	7.9027235727E+002	1.3864562974E+002	-7.4284916776E+001	0.596	2.410	2.560
101.880	3.760	221.115	0.436	7.7588787970E+002	1.3522479509E+002	-7.4593458457E+001	0.590	2.418	2.569
102.648	3.603	221.447	0.425	7.2077942899E+002	1.2238038807E+002	-6.9724128854E+001	0.566	2.449	2.607
103.415	3.435	221.769	0.422	6.6884675468E+002	1.1064983160E+002	-6.7456383726E+001	0.543	2.482	2.645
104.183	3.274	222.096	0.431	6.1721976718E+002	9.9271690070E+001	-6.7905586971E+001	0.519	2.517	2.685
104.531	3.206	222.249	0.431	5.9348472643E+002	9.4134030231E+001	-6.6891244076E+001	0.507	2.534	2.704
105.299	3.008	222.577	0.417	5.4435367361E+002	8.3785558223E+001	-5.7329425584E+001	0.484	2.570	2.744
105.500	2.947	222.653	0.432	5.3316590404E+002	8.1488433167E+001	-5.7079737167E+001	0.478	2.579	2.753
106.268	2.764	222.995	0.478	4.8495737963E+002	7.1745836876E+001	-6.5638843938E+001	0.454	2.615	2.790
107.035	2.631	223.387	0.519	4.3239654607E+002	6.1410275906E+001	-6.8594238865E+001	0.424	2.652	2.825
107.605	2.543	223.690	0.513	3.9322963063E+002	5.3860054574E+001	-6.5523414466E+001	0.398	2.679	2.850
108.373	2.370	224.073	0.505	3.4619893413E+002	4.5096933112E+001	-6.0341620115E+001	0.367	2.709	2.872
109.141	2.205	224.464	0.516	3.0059261947E+002	3.6870216851E+001	-5.8362641243E+001	0.332	2.731	2.884

109.908	2.048	224.864	0.517	2.5660006957E+002	2.9238980485E+001	-5.4930133252E+001	0.294	2.742	2.880
110.676	1.885	225.258	0.506	2.1626337280E+002	2.2599464757E+001	-5.1923589118E+001	0.256	2.758	2.878
111.443	1.711	225.641	0.481	1.7688649716E+002	1.6066492717E+001	-4.6953869528E+001	0.207	2.759	2.858
112.000	1.562	225.895	0.457	1.5250877994E+002	1.2310568554E+001	-4.2165329960E+001	0.175	2.749	2.831
112.071	1.543	225.928	0.438	1.4952838534E+002	1.1872860079E+001	-4.1546448568E+001	0.171	2.747	2.827
112.839	1.305	226.263	0.459	1.2103549798E+002	8.0584651516E+000	-3.6614450005E+001	0.133	2.711	2.765
113.606	1.102	226.632	0.582	9.3317544345E+001	4.9522737326E+000	-4.0805069855E+001	0.095	2.630	2.651
114.374	1.054	227.156	0.619	5.8391178783E+001	1.7396137569E+000	-3.7933404636E+001	0.085	2.446	2.413
115.141	0.908	227.582	0.570	3.5081832049E+001	3.7616437689E-001	-2.8028269946E+001	0.085	2.147	2.071
115.909	0.783	228.031	0.570	1.5361920524E+001	6.7482979265E-002	-2.2851499158E+001	0.085	2.014	1.910

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)
18.536	0.768	0.889	-30.316	-2.369	-2.107	21.656	19.256
19.303	0.768	0.889	-30.316	-7.107	-6.320	26.266	23.356
20.071	0.768	0.889	-30.316	-11.845	-10.533	31.139	27.688
20.839	0.051	0.060	-30.316	-14.373	-0.856	34.290	2.043
20.890	0.768	0.889	-30.316	-17.100	-15.205	37.158	33.041
21.658	0.768	0.889	-30.316	-22.237	-19.773	44.035	39.156
22.425	0.575	0.666	-30.316	-26.729	-17.797	49.035	32.649
23.000	0.768	0.889	-30.316	-31.089	-27.645	56.173	49.949
23.768	0.768	0.889	-30.316	-35.965	-31.980	63.088	56.097
24.535	0.215	0.249	-30.316	-39.084	-9.725	64.903	16.149
24.750	0.768	0.889	-30.316	-42.508	-37.798	72.116	64.125
25.518	0.482	0.559	-30.316	-46.971	-26.248	79.687	44.530
26.000	0.768	0.889	-30.316	-51.077	-45.417	87.198	77.536
26.768	0.768	0.889	-30.316	-55.843	-49.655	96.683	85.970
27.535	0.465	0.538	-30.316	-59.668	-32.126	102.844	55.373
28.000	0.587	0.680	-30.316	-63.019	-42.825	115.501	78.491
28.587	0.743	0.848	-28.785	-64.852	-55.006	125.823	106.719
29.330	0.768	0.876	-28.785	-69.310	-60.704	137.976	120.844
30.098	0.768	0.876	-28.785	-73.774	-64.613	152.371	133.451
30.865	0.135	0.154	-28.785	-76.397	-11.750	155.047	23.846
31.000	0.768	0.876	-28.785	-78.803	-69.019	160.845	140.873
31.768	0.768	0.876	-28.785	-82.832	-72.547	167.602	146.791
32.535	0.505	0.576	-28.785	-86.173	-49.674	168.970	97.402
33.040	0.768	0.845	-24.694	-79.196	-66.910	175.773	148.506
33.808	0.192	0.211	-24.694	-81.124	-17.141	171.052	36.142
34.000	0.768	0.845	-24.694	-83.619	-70.647	174.849	147.724
34.768	0.232	0.256	-24.694	-86.365	-22.091	174.146	44.544
35.000	0.768	0.845	-24.694	-89.496	-75.612	176.591	149.196
35.768	0.056	0.062	-24.694	-92.170	-5.692	177.372	10.954
35.824	0.176	0.186	-18.313	-70.624	-13.114	183.861	34.141
36.000	0.768	0.809	-18.313	-72.458	-58.586	186.756	151.003
36.768	0.232	0.245	-18.313	-74.360	-18.203	184.939	45.272
37.000	0.768	0.809	-18.313	-75.994	-61.446	187.963	151.979
37.768	0.169	0.178	-18.313	-77.449	-13.811	189.814	33.849
37.937	0.183	0.186	-9.605	-38.116	-7.078	189.432	35.178
38.120	0.768	0.779	-9.605	-38.565	-30.023	192.065	149.527

38.888	0.212	0.215	-9.605	-39.010	-8.403	191.546	41.262
39.100	0.768	0.779	-9.605	-39.499	-30.751	196.573	153.036
39.868	0.349	0.354	-9.605	-40.070	-14.191	196.214	69.490
40.217	0.768	0.768	-2.441	-2.364	-1.816	192.272	147.723
40.984	0.768	0.768	-2.441	-2.395	-1.840	193.648	148.780
41.752	0.316	0.317	-2.441	-2.416	-0.765	191.203	60.557
42.068	0.768	0.771	5.027	38.944	30.009	180.717	139.255
42.836	0.768	0.771	5.027	39.188	30.197	180.669	139.218
43.604	0.633	0.635	5.027	39.410	25.032	180.129	114.413
44.236	0.768	0.781	10.473	68.888	53.774	171.547	133.912
45.004	0.496	0.504	10.473	68.972	34.792	171.654	86.588
45.500	0.768	0.781	10.473	69.030	53.885	171.741	134.063
46.268	0.420	0.427	10.473	69.069	29.472	171.779	73.299
46.687	0.768	0.791	13.834	86.074	68.045	167.309	132.264
47.455	0.768	0.791	13.834	85.882	67.893	167.265	132.229
48.222	0.768	0.791	13.834	85.691	67.742	167.151	132.139
48.990	0.768	0.791	13.834	85.499	67.590	166.949	131.979
49.758	0.199	0.204	13.834	85.379	17.459	166.859	34.121
49.956	0.768	0.790	13.691	84.566	66.812	166.891	131.853
50.724	0.768	0.790	13.691	84.387	66.670	166.614	131.634
51.491	0.009	0.009	13.691	84.296	0.747	166.417	1.475
51.500	0.768	0.790	13.691	84.251	66.563	166.430	131.489
52.268	0.651	0.670	13.691	84.170	56.420	166.330	111.493
52.919	0.768	0.790	13.526	83.288	65.756	166.378	131.356
53.686	0.768	0.790	13.526	83.213	65.697	166.243	131.249
54.454	0.768	0.790	13.526	83.138	65.638	166.122	131.153
55.222	0.440	0.453	13.526	83.080	37.622	166.030	75.185
55.662	0.338	0.347	13.353	82.204	28.560	166.093	57.705
56.000	0.768	0.789	13.353	82.031	64.717	165.769	130.781
56.768	0.768	0.789	13.353	81.711	64.464	165.178	130.314
57.535	0.365	0.375	13.353	81.474	30.547	164.727	61.761
57.900	0.411	0.422	13.353	81.397	34.377	164.563	69.501
58.311	0.768	0.788	13.168	80.500	63.461	164.758	129.884
59.079	0.768	0.788	13.168	80.508	63.467	164.762	129.888
59.846	0.768	0.788	13.168	80.515	63.473	164.791	129.910
60.614	0.251	0.258	13.168	80.520	20.781	164.777	42.527
60.865	0.768	0.788	12.996	79.695	62.783	164.987	129.974
61.633	0.768	0.788	12.996	79.715	62.798	164.974	129.964
62.400	0.768	0.788	12.996	79.735	62.814	165.017	129.998
63.168	0.273	0.280	12.996	79.749	22.346	165.041	46.246
63.441	0.768	0.787	12.826	78.941	62.146	165.231	130.078
64.208	0.768	0.787	12.826	78.973	62.172	165.265	130.105
64.976	0.768	0.787	12.826	79.005	62.197	165.329	130.155
65.744	0.294	0.301	12.826	79.027	23.793	165.360	49.786
66.037	0.768	0.787	12.659	78.234	61.549	165.608	130.288
66.805	0.768	0.787	12.659	78.277	61.583	165.675	130.341
67.572	0.768	0.787	12.659	78.321	61.617	165.779	130.423
68.340	0.346	0.355	12.659	78.352	27.786	165.846	58.814
68.686	0.768	0.786	12.498	77.595	61.008	166.107	130.599
69.454	0.768	0.786	12.498	77.649	61.050	166.214	130.684
70.221	0.768	0.786	12.498	77.703	61.093	166.368	130.804
70.989	0.415	0.425	12.498	77.745	33.075	166.463	70.818
71.404	0.768	0.790	13.660	83.434	65.909	165.271	130.556
72.172	0.768	0.790	13.660	83.404	65.885	165.252	130.541
72.939	0.768	0.790	13.660	83.375	65.862	165.335	130.607
73.707	0.236	0.243	13.660	83.355	20.284	165.359	40.239
73.944	0.768	0.794	14.928	89.334	70.968	163.918	130.219
74.711	0.768	0.794	14.928	89.198	70.861	163.853	130.167
75.479	0.768	0.794	14.928	89.063	70.753	163.814	130.137
76.246	0.183	0.189	14.928	88.979	16.823	163.727	30.955
76.429	0.768	0.800	16.255	94.959	75.926	162.082	129.595
77.197	0.768	0.800	16.255	94.697	75.717	161.674	129.270
77.964	0.768	0.800	16.255	94.435	75.507	161.502	129.132
78.732	0.123	0.128	16.255	94.283	12.100	161.432	20.718
78.855	0.768	0.805	17.551	99.807	80.353	159.723	128.590
79.623	0.768	0.805	17.551	99.406	80.030	159.025	128.028

80.390	0.110	0.115	17.551	99.177	11.417	158.777	18.278
80.500	0.768	0.805	17.551	98.902	79.624	158.509	127.612
81.268	0.101	0.106	17.551	98.624	10.464	158.495	16.816
81.369	0.768	0.811	18.868	103.830	84.226	156.408	126.877
82.136	0.768	0.811	18.868	103.176	83.696	155.609	126.229
82.904	0.768	0.811	18.868	102.523	83.166	155.332	126.004
83.672	0.153	0.161	18.868	102.131	16.464	154.945	24.977
83.824	0.768	0.818	20.149	106.758	87.290	153.252	125.305
84.592	0.408	0.435	20.149	106.126	46.153	152.541	66.339
85.000	0.768	0.818	20.149	105.548	86.300	152.161	124.414
85.768	0.599	0.638	20.149	104.908	66.976	152.391	97.290
86.367	0.768	0.824	21.326	108.591	89.482	150.514	124.028
87.135	0.768	0.824	21.326	107.708	88.754	149.077	122.844
87.902	0.768	0.824	21.326	106.824	88.026	148.121	122.055
88.670	0.357	0.383	21.326	106.177	40.650	148.061	56.686
89.026	0.768	0.830	22.337	108.998	90.455	146.064	121.215
89.794	0.768	0.830	22.337	107.963	89.596	144.343	119.787
90.562	0.768	0.830	22.337	106.927	88.736	142.844	118.543
91.329	0.622	0.673	22.337	105.990	71.305	141.820	95.411
91.952	0.048	0.053	24.029	110.960	5.892	139.642	7.415
92.000	0.768	0.840	24.029	110.180	92.600	138.415	116.329
92.768	0.768	0.840	24.029	108.702	91.358	137.495	115.556
93.535	0.768	0.840	24.029	107.225	90.116	136.386	114.624
94.303	0.239	0.262	24.029	106.256	27.830	135.968	35.612
94.542	0.768	0.854	25.983	110.659	94.493	131.594	112.369
95.310	0.690	0.768	25.983	108.922	83.651	130.071	99.893
96.000	0.768	0.854	25.983	107.218	91.555	129.403	110.499
96.768	0.252	0.281	25.983	106.047	29.764	128.719	36.127
97.020	0.768	0.870	28.055	109.741	95.454	124.913	108.651
97.788	0.768	0.870	28.055	107.579	93.573	121.813	105.954
98.555	0.445	0.504	28.055	105.871	53.373	120.797	60.897
99.000	0.386	0.438	28.055	104.658	45.824	119.714	52.416
99.386	0.768	0.887	30.043	106.766	94.673	116.776	103.550
100.154	0.768	0.887	30.043	104.016	92.235	113.605	100.737
100.922	0.768	0.887	30.043	101.267	89.797	111.019	98.444
101.689	0.191	0.221	30.043	99.550	21.971	110.326	24.349
101.880	0.768	0.910	32.488	101.523	92.388	105.113	95.655
102.648	0.768	0.910	32.488	98.227	89.389	101.599	92.457
103.415	0.768	0.910	32.488	94.932	86.390	98.888	89.990
104.183	0.348	0.413	32.488	92.537	38.180	97.139	40.079
104.531	0.768	0.930	34.369	92.195	85.738	92.107	85.656
105.299	0.201	0.244	34.369	89.836	21.908	88.771	21.649
105.500	0.768	0.930	34.369	87.359	81.241	88.228	82.049
106.268	0.768	0.930	34.369	83.386	77.545	86.259	80.218
107.035	0.570	0.691	34.369	79.923	55.216	83.774	57.876
107.605	0.768	0.948	35.949	77.608	73.588	78.231	74.179
108.373	0.768	0.948	35.949	73.245	69.451	74.879	71.000
109.141	0.768	0.948	35.949	68.883	65.315	71.458	67.756
109.908	0.768	0.948	35.949	64.521	61.178	67.575	64.075
110.676	0.768	0.948	35.949	60.158	57.042	64.723	61.371
111.443	0.557	0.687	35.949	56.396	38.769	60.796	41.794
112.000	0.071	0.088	35.949	54.609	4.792	59.154	5.191
112.071	0.768	0.958	36.715	52.478	50.252	55.948	53.574
112.839	0.768	0.958	36.715	47.854	45.824	52.295	50.076
113.606	0.768	0.958	36.715	43.230	41.396	49.608	47.503
114.374	0.768	0.958	36.715	38.606	36.968	44.603	42.710
115.141	0.768	0.958	36.715	33.982	32.540	40.539	38.819
115.909	0.768	0.958	36.715	29.358	28.112	37.440	35.852

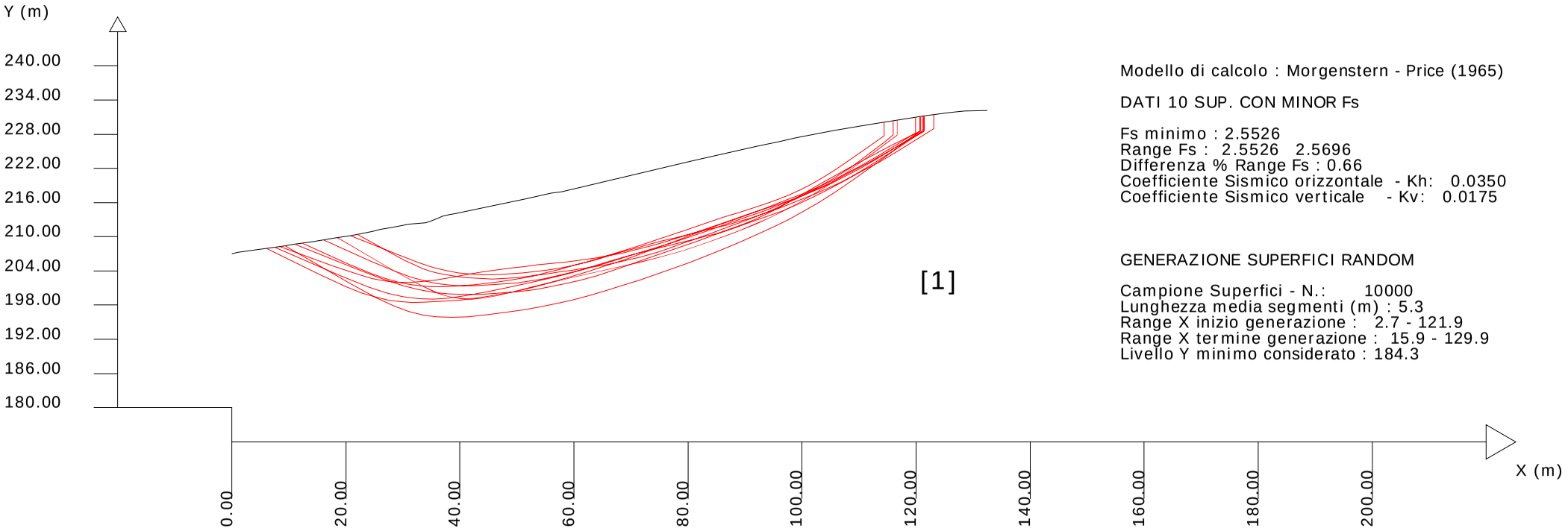
LEGENDA SIMBOLI

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

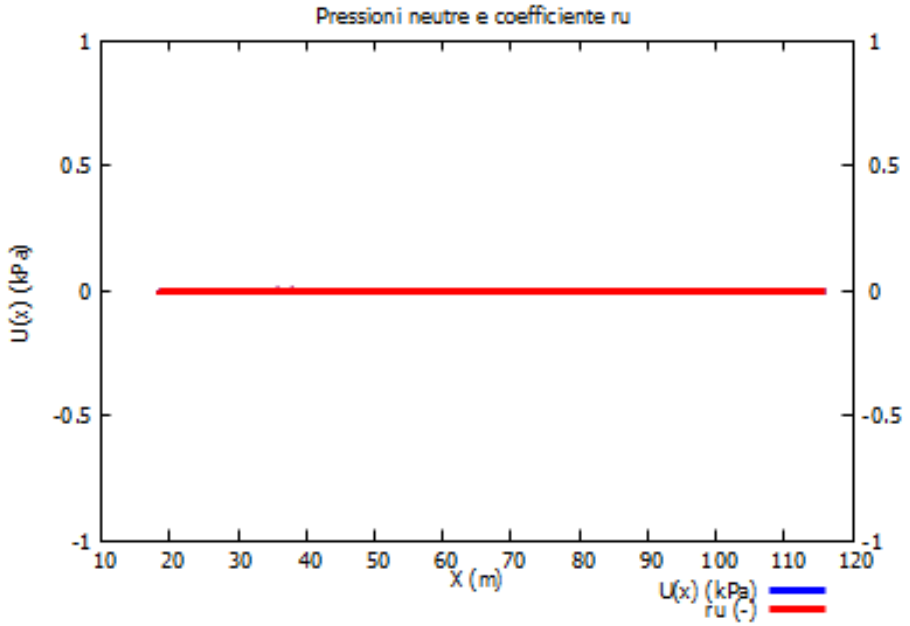
Fs minimo : 2.5526
Range Fs : 2.5526 2.5696
Differenza % Range Fs : 0.66
Coefficiente Sismico orizzontale - Kh: 0.0350
Coefficiente Sismico verticale - Kv: 0.0175

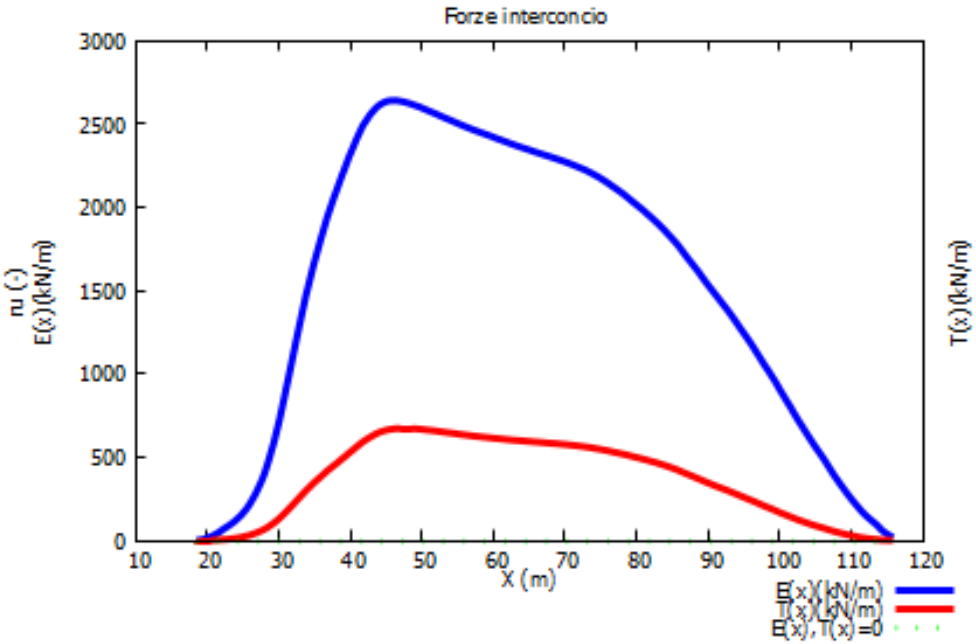
GENERAZIONE SUPERFICI RANDOM

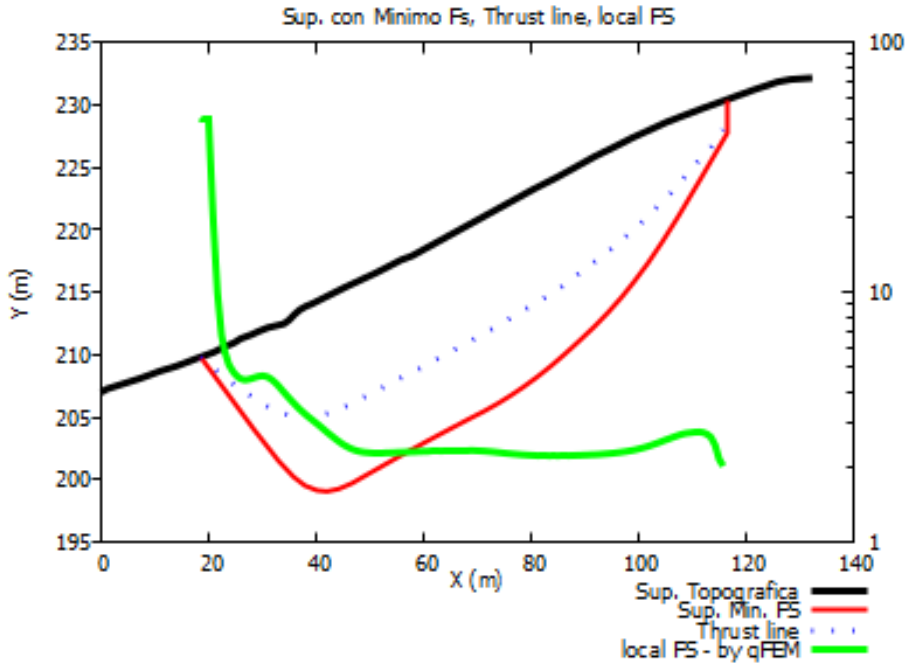
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 5.3
Range X inizio generazione : 2.7 - 121.9
Range X termine generazione : 15.9 - 129.9
Livello Y minimo considerato : 184.3

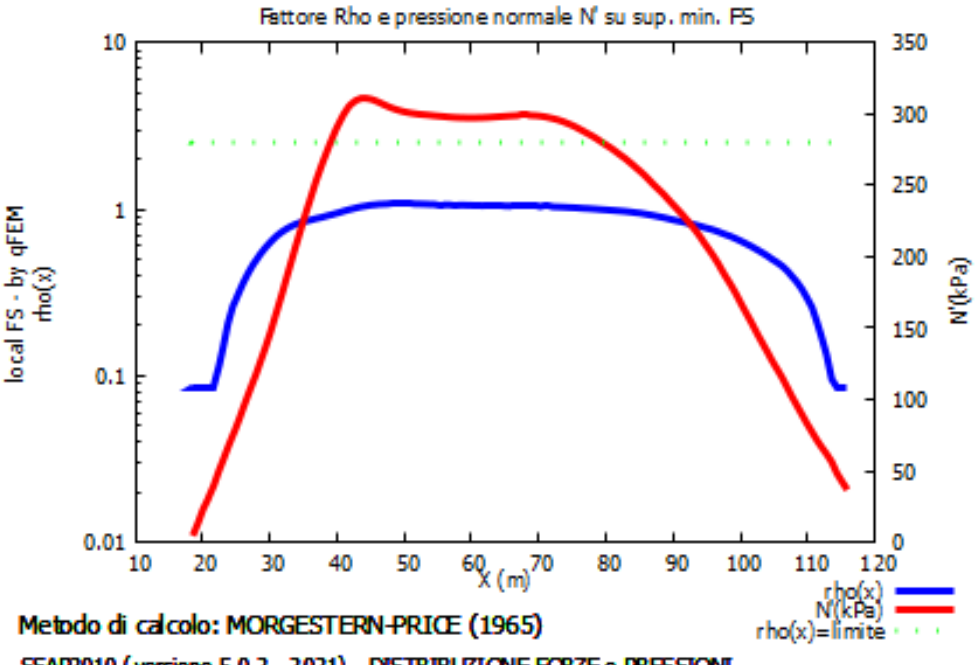
Parametri Geotecnici degli strati # ----------

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





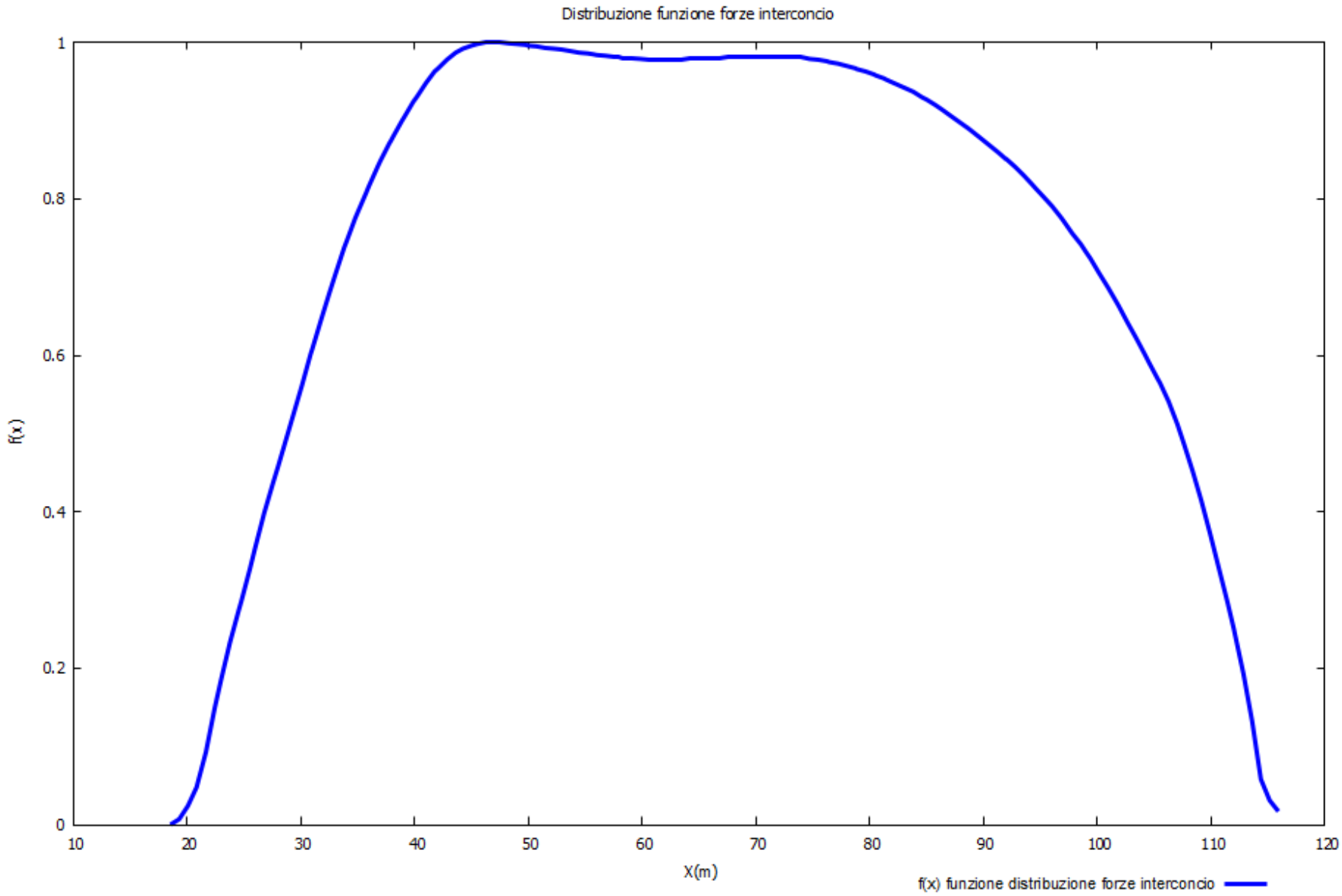


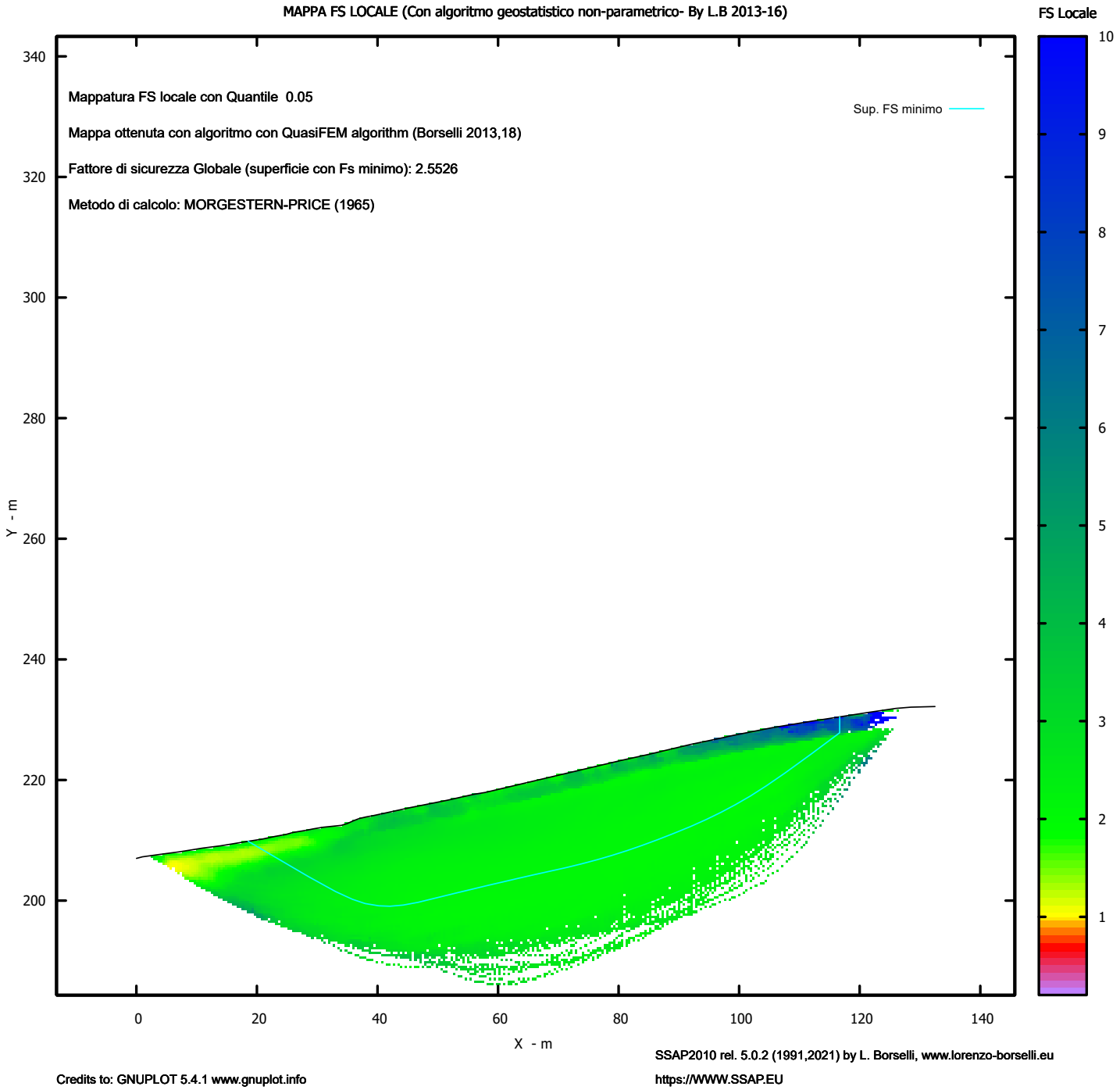


Metodo di calcolo: MORGESTERN-PRICE (1965)

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

18/11/21 12:38





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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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 GUGLIELMO\VERIFICA 1\DRENATA\BERSELLI\BERESLLI.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	206.99	-	-	-	-	-	-
1.00	207.25	-	-	-	-	-	-
4.00	207.67	-	-	-	-	-	-
7.12	208.09	-	-	-	-	-	-
9.00	208.38	-	-	-	-	-	-
10.89	208.69	-	-	-	-	-	-
14.00	209.09	-	-	-	-	-	-
18.00	209.74	-	-	-	-	-	-
20.89	210.19	-	-	-	-	-	-
23.00	210.65	-	-	-	-	-	-
24.75	210.96	-	-	-	-	-	-
26.00	211.30	-	-	-	-	-	-
28.00	211.62	-	-	-	-	-	-
29.33	211.88	-	-	-	-	-	-
31.00	212.17	-	-	-	-	-	-
34.00	212.48	-	-	-	-	-	-
35.00	212.79	-	-	-	-	-	-
36.00	213.24	-	-	-	-	-	-
37.00	213.61	-	-	-	-	-	-
38.12	213.88	-	-	-	-	-	-
39.10	214.05	-	-	-	-	-	-
45.50	215.43	-	-	-	-	-	-
51.50	216.63	-	-	-	-	-	-
56.00	217.63	-	-	-	-	-	-
57.90	217.93	-	-	-	-	-	-
80.50	223.26	-	-	-	-	-	-
85.00	224.24	-	-	-	-	-	-
92.00	225.90	-	-	-	-	-	-
96.00	226.74	-	-	-	-	-	-
99.00	227.40	-	-	-	-	-	-
105.50	228.67	-	-	-	-	-	-
112.00	229.74	-	-	-	-	-	-
121.50	231.22	-	-	-	-	-	-
126.00	231.86	-	-	-	-	-	-
128.50	232.07	-	-	-	-	-	-
132.50	232.18	-	-	-	-	-	-

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)*: 5.3 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 2.65 121.90
LIVELLO MINIMO CONSIDERATO (Ymin): 184.32
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 15.90 129.85
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) 2.5378 - Min. - X Y Lambda= 0.2168

X	Y
19.54	209.98
27.54	205.86
31.16	204.12
33.47	203.18
35.28	202.64
37.18	202.32
38.78	202.22
40.60	202.30
42.60	202.55
45.17	203.02
47.53	203.44
49.73	203.82
51.86	204.18

53.94 204.52
56.02 204.86
58.13 205.19
60.29 205.51
62.51 205.84
64.57 206.19
66.59 206.58
68.56 207.01
70.60 207.51
72.57 208.04
74.59 208.63
76.66 209.29
78.88 210.05
81.04 210.79
83.14 211.53
85.22 212.27
87.29 213.02
89.38 213.79
91.50 214.58
93.68 215.41
95.97 216.30
98.02 217.16
100.01 218.08
101.92 219.05
103.94 220.16
106.09 221.47
108.59 223.11
112.22 225.63
115.22 227.78
115.22 230.24

Fattore di sicurezza (FS) 2.5502 - N.2 -- X Y Lambda= 0.2135
15.30 209.30
23.47 205.30
27.24 203.57
29.72 202.59
31.73 201.96
33.76 201.54
35.54 201.32
37.51 201.24
39.63 201.29
42.27 201.49
44.67 201.69
46.92 201.91
49.10 202.14
51.26 202.39
53.41 202.67
55.58 202.97
57.82 203.30
60.16 203.67
62.34 204.06
64.47 204.48
66.56 204.93
68.70 205.45
70.78 205.99
72.92 206.60
75.11 207.26
77.47 208.02
79.69 208.76
81.86 209.52
83.99 210.29
86.15 211.11
88.29 211.95
90.47 212.84
92.74 213.79

95.15 214.84
97.32 215.86
99.42 216.92
101.45 218.03
103.57 219.28
105.84 220.73
108.47 222.53
112.26 225.27
115.39 227.59
115.39 230.27

Fattore di sicurezza (FS) 2.5529 - N.3 -- X Y Lambda= 0.2247
15.43 209.32
24.01 204.83
27.99 202.86
30.62 201.73
32.76 200.98
34.91 200.45
36.82 200.13
38.95 199.94
41.30 199.89
44.26 199.97
46.73 200.12
49.00 200.34
51.11 200.64
53.32 201.05
55.39 201.54
57.56 202.14
59.81 202.86
62.35 203.75
64.79 204.60
67.15 205.41
69.47 206.21
71.76 206.99
74.06 207.76
76.36 208.53
78.67 209.30
81.01 210.06
83.31 210.83
85.59 211.61
87.87 212.40
90.15 213.21
92.45 214.03
94.78 214.88
97.18 215.77
99.67 216.72
101.95 217.64
104.15 218.62
106.28 219.65
108.53 220.82
110.92 222.18
113.69 223.87
117.69 226.45
120.98 228.63
120.98 231.14

Fattore di sicurezza (FS) 2.5554 - N.4 -- X Y Lambda= 0.2194
14.56 209.18
24.80 203.98
29.42 201.78
32.38 200.61
34.69 199.93
37.12 199.55
39.17 199.44

41.50 199.57
44.10 199.92
47.46 200.57
50.46 201.18
53.25 201.78
55.91 202.40
58.55 203.04
61.16 203.72
63.81 204.44
66.53 205.22
69.40 206.07
72.08 206.92
74.70 207.80
77.26 208.71
79.88 209.70
82.44 210.73
85.06 211.83
87.75 213.02
90.62 214.34
93.34 215.62
95.99 216.93
98.59 218.25
101.23 219.63
104.13 221.22
107.41 223.07
112.07 225.77
115.25 227.65
115.25 230.25

Fattore di sicurezza (FS) 2.5571 - N.5 -- X Y Lambda= 0.2065
9.92 208.53
20.42 204.26
25.24 202.43
28.39 201.44
30.94 200.86
33.53 200.55
35.79 200.46
38.30 200.57
41.02 200.87
44.40 201.42
47.47 201.95
50.36 202.48
53.15 203.01
55.91 203.58
58.65 204.17
61.41 204.79
64.23 205.46
67.15 206.18
69.97 206.91
72.73 207.65
75.46 208.42
78.22 209.22
80.97 210.06
83.79 210.95
86.71 211.91
89.82 212.96
92.59 213.99
95.24 215.09
97.79 216.27
100.49 217.64
103.35 219.26
106.68 221.31
111.53 224.49
116.14 227.62
116.14 230.39

Fattore di sicurezza (FS) 2.5587 - N.6 -- X Y Lambda= 0.2112

13.75	209.06
24.09	204.72
28.82	202.88
31.91	201.88
34.39	201.30
36.93	200.98
39.14	200.90
41.60	201.02
44.29	201.34
47.68	201.92
50.69	202.47
53.51	203.03
56.21	203.62
58.91	204.26
61.55	204.93
64.23	205.65
66.95	206.43
69.79	207.29
72.60	208.13
75.36	208.95
78.11	209.77
80.84	210.57
83.61	211.37
86.43	212.19
89.34	213.02
92.39	213.89
95.06	214.75
97.62	215.71
100.06	216.76
102.69	218.04
105.44	219.57
108.68	221.56
113.44	224.72
118.33	228.07
118.33	230.73

Fattore di sicurezza (FS) 2.5611 - N.7 -- X Y Lambda= 0.2131

16.13	209.44
26.07	205.68
30.70	204.05
33.78	203.15
36.30	202.59
38.82	202.26
41.07	202.12
43.55	202.14
46.22	202.32
49.50	202.69
52.39	203.08
55.09	203.50
57.66	203.97
60.28	204.51
62.81	205.10
65.40	205.77
68.04	206.52
70.88	207.38
73.65	208.22
76.36	209.06
79.06	209.89
81.73	210.72
84.44	211.57
87.19	212.43
90.01	213.32

92.95 214.26
95.57 215.19
98.10 216.20
100.52 217.28
103.11 218.56
105.84 220.08
109.03 222.02
113.69 225.05
118.47 228.27
118.47 230.75

Fattore di sicurezza (FS) 2.5616 - N.8 -- X Y Lambda= 0.2072
10.35 208.60
19.24 204.68
23.40 202.96
26.17 201.97
28.44 201.33
30.70 200.89
32.73 200.64
34.94 200.52
37.31 200.54
40.20 200.68
42.80 200.86
45.25 201.06
47.60 201.30
49.97 201.58
52.28 201.89
54.65 202.26
57.08 202.68
59.68 203.16
62.12 203.66
64.49 204.17
66.82 204.72
69.18 205.32
71.50 205.94
73.85 206.61
76.24 207.33
78.74 208.12
81.19 208.90
83.62 209.65
86.03 210.39
88.42 211.13
90.86 211.87
93.34 212.61
95.92 213.38
98.66 214.19
100.98 214.99
103.20 215.89
105.28 216.88
107.57 218.14
109.93 219.64
112.74 221.63
116.92 224.84
121.50 228.50
121.50 231.22

Fattore di sicurezza (FS) 2.5647 - N.9 -- X Y Lambda= 0.2171
7.54 208.15
18.32 203.08
23.30 200.88
26.56 199.65
29.21 198.87
31.89 198.37
34.25 198.11

36.88 198.05
39.76 198.18
43.39 198.51
46.52 198.87
49.41 199.29
52.13 199.78
54.93 200.37
57.60 201.02
60.37 201.78
63.23 202.64
66.35 203.68
69.34 204.68
72.25 205.69
75.11 206.70
77.96 207.73
80.82 208.78
83.72 209.88
86.71 211.03
89.83 212.25
92.68 213.46
95.45 214.72
98.13 216.04
100.93 217.52
103.94 219.26
107.41 221.39
112.42 224.63
117.53 228.04
117.53 230.60

Fattore di sicurezza (FS) 2.5657 - N.10 -- X Y Lambda= 0.2204
16.53 209.50
26.75 204.79
31.48 202.74
34.61 201.58
37.15 200.84
39.72 200.35
41.99 200.09
44.52 200.00
47.29 200.08
50.77 200.34
53.72 200.64
56.44 201.02
58.99 201.47
61.64 202.04
64.14 202.67
66.75 203.43
69.44 204.31
72.42 205.37
75.29 206.40
78.09 207.41
80.86 208.42
83.58 209.42
86.34 210.44
89.13 211.48
91.99 212.55
94.95 213.66
97.63 214.76
100.25 215.93
102.78 217.16
105.44 218.56
108.29 220.20
111.58 222.23
116.34 225.35
121.23 228.64
121.23 231.18

---------- 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	2.538	11786.8	4644.4	6677.9	Surplus
2	2.550	13369.3	5242.5	7602.6	Surplus
3	2.553	14312.6	5606.4	8145.6	Surplus
4	2.555	13478.4	5274.5	7676.5	Surplus
5	2.557	13651.6	5338.7	7779.0	Surplus
6	2.559	13361.9	5222.1	7617.7	Surplus
7	2.561	12772.0	4986.9	7286.4	Surplus
8	2.562	15292.1	5969.8	8725.3	Surplus
9	2.565	15853.3	6181.4	9053.7	Surplus
10	2.566	14870.4	5795.8	8495.0	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 6677.9

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)
19.545	0.750	-27.25	3.84	0.00	0.00	26.00	19.50
20.295	0.595	-27.25	8.51	0.00	0.00	26.00	19.50
20.890	0.750	-27.25	17.97	0.00	0.00	26.00	19.50
21.640	0.750	-27.25	26.36	0.00	0.00	26.00	19.50
22.390	0.610	-27.25	27.61	0.00	0.00	26.00	19.50
23.000	0.750	-27.25	41.34	0.00	0.00	26.00	19.50
23.750	0.750	-27.25	49.27	0.00	0.00	26.00	19.50
24.500	0.250	-27.25	18.16	0.00	0.00	26.00	19.50
24.750	0.750	-27.25	60.37	0.00	0.00	26.00	19.50
25.500	0.500	-27.25	45.24	0.00	0.00	26.00	19.50
26.000	0.750	-27.25	74.75	0.00	0.00	26.00	19.50
26.750	0.750	-27.25	82.48	0.00	0.00	26.00	19.50
27.500	0.044	-27.25	5.07	0.00	0.00	26.00	19.50
27.544	0.456	-25.76	54.10	0.00	0.00	26.00	19.50
28.000	0.750	-25.76	95.15	0.00	0.00	26.00	19.50
28.750	0.580	-25.76	78.88	0.00	0.00	26.00	19.50
29.330	0.750	-25.76	108.79	0.00	0.00	26.00	19.50
30.080	0.750	-25.76	116.30	0.00	0.00	26.00	19.50
30.830	0.170	-25.76	27.37	0.00	0.00	26.00	19.50
31.000	0.155	-25.76	25.37	0.00	0.00	26.00	19.50
31.155	0.750	-22.04	126.06	0.00	0.00	26.00	19.50
31.905	0.750	-22.04	131.88	0.00	0.00	26.00	19.50
32.656	0.750	-22.04	137.70	0.00	0.00	26.00	19.50
33.406	0.063	-22.04	11.77	0.00	0.00	26.00	19.50
33.468	0.532	-16.63	101.15	0.00	0.00	26.00	19.50
34.000	0.750	-16.63	147.84	0.00	0.00	26.00	19.50
34.750	0.250	-16.63	50.80	0.00	0.00	26.00	19.50
35.000	0.281	-16.63	58.24	0.00	0.00	26.00	19.50
35.281	0.719	-9.47	153.52	0.00	0.00	26.00	19.50
36.000	0.750	-9.47	166.70	0.00	0.00	26.00	19.50

36.750	0.250	-9.47	56.90	0.00	0.00	26.00	19.50
37.000	0.181	-9.47	41.52	0.00	0.00	26.00	19.50
37.181	0.750	-3.65	174.69	0.00	0.00	26.00	19.50
37.931	0.189	-3.65	44.62	0.00	0.00	26.00	19.50
38.120	0.660	-3.65	157.14	0.00	0.00	26.00	19.50
38.780	0.320	2.42	76.72	0.00	0.00	26.00	19.50
39.100	0.750	2.42	181.34	0.00	0.00	26.00	19.50
39.850	0.745	2.42	182.13	0.00	0.00	26.00	19.50
40.595	0.750	7.14	184.82	0.00	0.00	26.00	19.50
41.345	0.750	7.14	185.86	0.00	0.00	26.00	19.50
42.096	0.503	7.14	125.17	0.00	0.00	26.00	19.50
42.598	0.750	10.29	187.26	0.00	0.00	26.00	19.50
43.349	0.750	10.29	187.65	0.00	0.00	26.00	19.50
44.099	0.750	10.29	188.04	0.00	0.00	26.00	19.50
44.849	0.324	10.29	81.38	0.00	0.00	26.00	19.50
45.173	0.327	10.09	82.19	0.00	0.00	26.00	19.50
45.500	0.750	10.09	188.72	0.00	0.00	26.00	19.50
46.250	0.750	10.09	188.98	0.00	0.00	26.00	19.50
47.000	0.527	10.09	133.00	0.00	0.00	26.00	19.50
47.528	0.750	9.85	189.43	0.00	0.00	26.00	19.50
48.278	0.750	9.85	189.73	0.00	0.00	26.00	19.50
49.028	0.702	9.85	177.80	0.00	0.00	26.00	19.50
49.730	0.750	9.61	190.34	0.00	0.00	26.00	19.50
50.480	0.750	9.61	190.69	0.00	0.00	26.00	19.50
51.230	0.270	9.61	68.75	0.00	0.00	26.00	19.50
51.500	0.364	9.61	92.71	0.00	0.00	26.00	19.50
51.864	0.750	9.36	191.62	0.00	0.00	26.00	19.50
52.614	0.750	9.36	192.27	0.00	0.00	26.00	19.50
53.364	0.573	9.36	147.38	0.00	0.00	26.00	19.50
53.937	0.750	9.12	193.46	0.00	0.00	26.00	19.50
54.687	0.750	9.12	194.16	0.00	0.00	26.00	19.50
55.438	0.562	9.12	146.05	0.00	0.00	26.00	19.50
56.000	0.025	9.12	6.39	0.00	0.00	26.00	19.50
56.025	0.750	8.88	195.05	0.00	0.00	26.00	19.50
56.775	0.750	8.88	195.07	0.00	0.00	26.00	19.50
57.525	0.375	8.88	97.58	0.00	0.00	26.00	19.50
57.900	0.232	8.88	60.41	0.00	0.00	26.00	19.50
58.132	0.750	8.65	195.85	0.00	0.00	26.00	19.50
58.882	0.750	8.65	196.81	0.00	0.00	26.00	19.50
59.632	0.653	8.65	172.22	0.00	0.00	26.00	19.50
60.286	0.750	8.43	198.63	0.00	0.00	26.00	19.50
61.036	0.750	8.43	199.63	0.00	0.00	26.00	19.50
61.786	0.720	8.43	192.67	0.00	0.00	26.00	19.50
62.506	0.750	9.63	201.48	0.00	0.00	26.00	19.50
63.257	0.750	9.63	202.23	0.00	0.00	26.00	19.50
64.007	0.566	9.63	152.98	0.00	0.00	26.00	19.50
64.572	0.750	10.94	203.43	0.00	0.00	26.00	19.50
65.322	0.750	10.94	203.91	0.00	0.00	26.00	19.50
66.072	0.518	10.94	141.08	0.00	0.00	26.00	19.50
66.590	0.750	12.33	204.59	0.00	0.00	26.00	19.50
67.341	0.750	12.33	204.79	0.00	0.00	26.00	19.50
68.091	0.466	12.33	127.36	0.00	0.00	26.00	19.50
68.557	0.750	13.69	204.96	0.00	0.00	26.00	19.50
69.307	0.750	13.69	204.88	0.00	0.00	26.00	19.50
70.057	0.540	13.69	147.42	0.00	0.00	26.00	19.50
70.597	0.750	15.04	204.58	0.00	0.00	26.00	19.50
71.347	0.750	15.04	204.20	0.00	0.00	26.00	19.50
72.097	0.469	15.04	127.57	0.00	0.00	26.00	19.50
72.567	0.750	16.38	203.45	0.00	0.00	26.00	19.50
73.317	0.750	16.38	202.78	0.00	0.00	26.00	19.50
74.067	0.521	16.38	140.55	0.00	0.00	26.00	19.50
74.588	0.750	17.63	201.52	0.00	0.00	26.00	19.50
75.338	0.750	17.63	200.58	0.00	0.00	26.00	19.50
76.088	0.572	17.63	152.38	0.00	0.00	26.00	19.50
76.661	0.750	18.73	198.80	0.00	0.00	26.00	19.50
77.411	0.750	18.73	197.62	0.00	0.00	26.00	19.50

78.161	0.724	18.73	189.66	0.00	0.00	26.00	19.50
78.885	0.750	19.02	195.26	0.00	0.00	26.00	19.50
79.635	0.750	19.02	194.02	0.00	0.00	26.00	19.50
80.385	0.115	19.02	29.59	0.00	0.00	26.00	19.50
80.500	0.536	19.02	137.67	0.00	0.00	26.00	19.50
81.036	0.750	19.32	191.41	0.00	0.00	26.00	19.50
81.786	0.750	19.32	189.88	0.00	0.00	26.00	19.50
82.536	0.604	19.32	151.70	0.00	0.00	26.00	19.50
83.140	0.750	19.62	187.11	0.00	0.00	26.00	19.50
83.890	0.750	19.62	185.52	0.00	0.00	26.00	19.50
84.640	0.360	19.62	88.46	0.00	0.00	26.00	19.50
85.000	0.221	19.62	54.03	0.00	0.00	26.00	19.50
85.221	0.750	19.93	182.84	0.00	0.00	26.00	19.50
85.971	0.750	19.93	181.40	0.00	0.00	26.00	19.50
86.721	0.571	19.93	137.19	0.00	0.00	26.00	19.50
87.292	0.750	20.24	178.84	0.00	0.00	26.00	19.50
88.042	0.750	20.24	177.33	0.00	0.00	26.00	19.50
88.792	0.588	20.24	137.92	0.00	0.00	26.00	19.50
89.380	0.750	20.54	174.61	0.00	0.00	26.00	19.50
90.130	0.750	20.54	173.03	0.00	0.00	26.00	19.50
90.880	0.618	20.54	141.43	0.00	0.00	26.00	19.50
91.499	0.501	20.84	113.89	0.00	0.00	26.00	19.50
92.000	0.750	20.84	168.87	0.00	0.00	26.00	19.50
92.750	0.750	20.84	166.92	0.00	0.00	26.00	19.50
93.500	0.182	20.84	40.12	0.00	0.00	26.00	19.50
93.682	0.750	21.11	164.46	0.00	0.00	26.00	19.50
94.432	0.750	21.11	162.44	0.00	0.00	26.00	19.50
95.182	0.750	21.11	160.42	0.00	0.00	26.00	19.50
95.932	0.034	21.11	7.18	0.00	0.00	26.00	19.50
95.966	0.034	22.85	7.22	0.00	0.00	26.00	19.50
96.000	0.750	22.85	158.06	0.00	0.00	26.00	19.50
96.750	0.750	22.85	155.76	0.00	0.00	26.00	19.50
97.500	0.519	22.85	106.32	0.00	0.00	26.00	19.50
98.019	0.750	24.81	151.62	0.00	0.00	26.00	19.50
98.769	0.231	24.81	46.16	0.00	0.00	26.00	19.50
99.000	0.750	24.81	147.85	0.00	0.00	26.00	19.50
99.750	0.256	24.81	49.77	0.00	0.00	26.00	19.50
100.006	0.750	26.89	143.50	0.00	0.00	26.00	19.50
100.756	0.750	26.89	139.93	0.00	0.00	26.00	19.50
101.506	0.410	26.89	74.96	0.00	0.00	26.00	19.50
101.916	0.750	28.86	134.16	0.00	0.00	26.00	19.50
102.666	0.750	28.86	130.08	0.00	0.00	26.00	19.50
103.417	0.525	28.86	88.68	0.00	0.00	26.00	19.50
103.942	0.750	31.32	122.83	0.00	0.00	26.00	19.50
104.692	0.750	31.32	118.10	0.00	0.00	26.00	19.50
105.442	0.058	31.32	8.91	0.00	0.00	26.00	19.50
105.500	0.594	31.32	89.75	0.00	0.00	26.00	19.50
106.094	0.750	33.23	108.54	0.00	0.00	26.00	19.50
106.844	0.750	33.23	102.92	0.00	0.00	26.00	19.50
107.594	0.750	33.23	97.31	0.00	0.00	26.00	19.50
108.344	0.247	33.23	30.76	0.00	0.00	26.00	19.50
108.591	0.750	34.82	89.61	0.00	0.00	26.00	19.50
109.341	0.750	34.82	83.53	0.00	0.00	26.00	19.50
110.091	0.750	34.82	77.45	0.00	0.00	26.00	19.50
110.841	0.750	34.82	71.37	0.00	0.00	26.00	19.50
111.591	0.409	34.82	36.32	0.00	0.00	26.00	19.50
112.000	0.219	34.82	18.70	0.00	0.00	26.00	19.50
112.219	0.750	35.60	60.01	0.00	0.00	26.00	19.50
112.969	0.750	35.60	53.59	0.00	0.00	26.00	19.50
113.719	0.750	35.60	47.18	0.00	0.00	26.00	19.50
114.469	0.750	35.60	40.77	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)	(--)	(--)	(--)		
19.545	0.000	209.981	-0.343	0.0000000000E+000	0.0000000000E+000	2.8016141402E+000	0.085	12.996	11.370		
20.295	0.101	209.695	-0.343	2.3619117242E+000	5.7578979028E-003	3.4958454647E+000	0.085	11.799	10.327		
20.890	0.231	209.519	-0.309	4.6061072341E+000	2.9300452176E-002	6.8287845811E+000	0.085	8.537	7.500		
21.640	0.378	209.280	-0.327	1.2619520816E+001	2.5226932568E-001	1.4457223477E+001	0.085	6.993	6.321		
22.390	0.512	209.028	-0.326	2.6295288441E+001	1.1410746106E+000	1.8884604985E+001	0.085	6.722	6.294		
23.000	0.635	208.836	-0.300	3.8134236465E+001	2.5283092197E+000	2.2764146609E+001	0.097	6.783	6.436		
23.750	0.804	208.619	-0.291	5.8300017719E+001	5.2560636442E+000	3.6342492342E+001	0.155	6.952	6.533		
24.500	0.971	208.400	-0.283	9.2656386114E+001	9.5986761662E+000	4.9275364390E+001	0.215	7.135	6.482		
24.750	1.036	208.336	-0.249	1.0525273755E+002	1.1189232120E+001	5.2363944853E+001	0.231	7.182	6.439		
25.500	1.237	208.151	-0.255	1.4888379074E+002	1.6835250807E+001	6.2465283536E+001	0.275	7.272	6.253		
26.000	1.361	208.018	-0.253	1.8154149322E+002	2.1098012752E+001	6.7525978518E+001	0.299	7.286	6.107		
26.750	1.564	207.835	-0.234	2.3466501051E+002	2.8054049731E+001	7.3616033272E+001	0.331	7.287	5.898		
27.500	1.783	207.667	-0.222	2.9198258088E+002	3.5736450652E+001	7.4395248875E+001	0.359	7.241	5.683		
27.544	1.797	207.658	-0.222	2.9524632745E+002	3.6179718579E+001	7.5861586946E+001	0.360	7.236	5.671		
28.000	1.915	207.556	-0.225	3.3731859781E+002	4.2202028878E+001	9.6551863361E+001	0.381	7.140	5.510		
28.750	2.108	207.387	-0.219	4.1499403845E+002	5.3932235556E+001	1.0641404870E+002	0.416	6.891	5.226		
29.330	2.266	207.265	-0.213	4.7798521067E+002	6.4001660243E+001	1.1569063929E+002	0.442	6.660	5.018		
30.080	2.466	207.103	-0.201	5.7162043360E+002	8.0195470920E+001	1.2277155844E+002	0.482	6.251	4.737		
30.830	2.688	206.963	-0.183	6.6217096268E+002	9.6757547540E+001	1.1467197657E+002	0.516	5.855	4.501		
31.000	2.742	206.935	-0.167	6.8140645464E+002	1.0039128072E+002	1.1867893349E+002	0.522	5.771	4.455		
31.155	2.790	206.909	-0.157	7.0061138819E+002	1.0417448462E+002	1.2456231463E+002	0.530	5.682	4.409		
31.905	2.978	206.793	-0.143	7.9753884007E+002	1.2462273276E+002	1.2927348484E+002	0.571	5.231	4.189		
32.656	3.182	206.694	-0.120	8.9455153462E+002	1.4652064399E+002	1.2777653287E+002	0.611	4.826	3.992		
33.406	3.406	206.613	-0.104	9.8923321208E+002	1.6929716061E+002	1.1595988485E+002	0.649	4.472	3.820		
33.468	3.427	206.609	-0.062	9.9644561234E+002	1.7117058604E+002	1.1440691427E+002	0.652	4.444	3.807		
34.000	3.553	206.577	-0.048	1.0541279363E+003	1.8638451022E+002	1.0598880863E+002	0.677	4.233	3.707		
34.750	3.748	206.547	-0.035	1.1309686734E+003	2.0737908159E+002	9.8776395893E+001	0.707	3.978	3.581		
35.000	3.817	206.542	-0.015	1.1553464952E+003	2.1423586552E+002	9.4726456366E+001	0.716	3.902	3.542		
35.281	3.899	206.539	0.002	1.1811039524E+003	2.2165058021E+002	9.0976699199E+001	0.724	3.822	3.501		
36.000	4.023	206.544	0.016	1.2454482252E+003	2.4065002253E+002	8.7618455141E+001	0.748	3.635	3.401		
36.750	4.166	206.562	0.031	1.3096687048E+003	2.6030311855E+002	7.3661192380E+001	0.772	3.466	3.304		
37.000	4.220	206.574	0.051	1.3270804789E+003	2.6594015539E+002	6.5980611941E+001	0.779	3.421	3.277		
37.181	4.260	206.584	0.064	1.3385178215E+003	2.6973908207E+002	6.3094833131E+001	0.783	3.390	3.258		
37.931	4.357	206.633	0.067	1.3851872624E+003	2.8557214781E+002	5.9184433040E+001	0.804	3.267	3.180		
38.120	4.384	206.648	0.087	1.3962413026E+003	2.8943751289E+002	5.8121241757E+001	0.809	3.238	3.161		
38.780	4.485	206.707	0.094	1.4339327239E+003	3.0300784587E+002	5.6221502657E+001	0.828	3.137	3.094		
39.100	4.504	206.740	0.122	1.4517723649E+003	3.0960661132E+002	5.3358737572E+001	0.837	3.089	3.062		
39.850	4.571	206.838	0.145	1.4874901528E+003	3.2387679172E+002	4.5330817703E+001	0.858	2.985	2.990		
40.595	4.658	206.957	0.164	1.5195811647E+003	3.3769959962E+002	3.7764274210E+001	0.878	2.880	2.918		
41.345	4.690	207.083	0.177	1.5439104193E+003	3.4934417009E+002	2.9551679860E+001	0.896	2.793	2.856		
42.096	4.736	207.223	0.191	1.5639155240E+003	3.5983789128E+002	2.4741008466E+001	0.912	2.713	2.798		
42.598	4.773	207.323	0.194	1.5757060357E+003	3.6639476022E+002	2.0176462794E+001	0.923	2.663	2.763		
43.349	4.781	207.466	0.192	1.5871794008E+003	3.7376596328E+002	1.2958205640E+001	0.936	2.605	2.720		
44.099	4.788	207.610	0.187	1.5951463432E+003	3.7955719073E+002	8.6641714952E+000	0.946	2.558	2.686		
44.849	4.789	207.747	0.177	1.6001776632E+003	3.8375475006E+002	4.8352211574E+000	0.954	2.525	2.659		
45.173	4.784	207.800	0.166	1.6014828012E+003	3.8498915026E+002	3.9942030898E+000	0.956	2.514	2.650		
45.500	4.780	207.855	0.182	1.6027785640E+003	3.8619277295E+002	3.8541174730E+000	0.958	2.505	2.641		
46.250	4.789	207.997	0.193	1.6054840528E+003	3.8868877730E+002	3.4531818972E+000	0.963	2.486	2.622		
47.000	4.802	208.144	0.194	1.6079591361E+003	3.9082488924E+002	3.1855560172E+000	0.967	2.472	2.605		
47.528	4.809	208.245	0.197	1.6095966903E+003	3.9211701477E+002	3.1998089298E+000	0.969	2.464	2.595		
48.278	4.829	208.395	0.197	1.6120976731E+003	3.9386963397E+002	3.4255840561E+000	0.972	2.454	2.581		
49.028	4.845	208.541	0.194	1.6147358592E+003	3.9542184470E+002	3.6507952338E+000	0.974	2.448	2.568		
49.730	4.858	208.676	0.199	1.6173860401E+003	3.9681376818E+002	4.0859873150E+000	0.976	2.443	2.558		

50.480	4.885	208.830	0.205	1.6206995601E+003	3.9836977942E+002	4.6288146593E+000	0.978	2.439	2.546
51.230	4.912	208.984	0.198	1.6243303334E+003	3.9991293592E+002	4.6139278717E+000	0.980	2.435	2.535
51.500	4.914	209.032	0.179	1.6255546264E+003	4.0039403230E+002	4.6002990984E+000	0.980	2.434	2.532
51.864	4.918	209.098	0.191	1.6272617243E+003	4.0105007804E+002	4.9615899047E+000	0.981	2.433	2.528
52.614	4.941	209.245	0.195	1.6314007999E+003	4.0258936921E+002	5.6864318329E+000	0.982	2.431	2.519
53.364	4.963	209.390	0.189	1.6357926881E+003	4.0420004759E+002	5.8125369886E+000	0.983	2.430	2.509
53.937	4.973	209.494	0.181	1.6391060263E+003	4.0541402461E+002	5.9194216374E+000	0.984	2.428	2.503
54.687	4.988	209.630	0.178	1.6436830068E+003	4.0715108290E+002	6.1648934051E+000	0.985	2.427	2.494
55.438	4.999	209.761	0.171	1.6483547932E+003	4.0901708731E+002	6.1925709003E+000	0.986	2.425	2.486
56.000	5.002	209.854	0.165	1.6518228624E+003	4.1048457100E+002	6.1141323240E+000	0.988	2.423	2.479
56.025	5.002	209.858	0.170	1.6519729658E+003	4.1054932158E+002	6.1316549309E+000	0.988	2.423	2.479
56.775	5.012	209.986	0.169	1.6570257007E+003	4.1289054389E+002	6.8776081789E+000	0.991	2.421	2.469
57.525	5.021	210.112	0.165	1.6622909698E+003	4.1551142950E+002	6.8909838739E+000	0.995	2.418	2.458
57.900	5.022	210.171	0.156	1.6648524527E+003	4.1688654753E+002	6.7544684888E+000	0.997	2.417	2.453
58.132	5.021	210.207	0.164	1.6664098816E+003	4.1773901240E+002	6.8578747465E+000	0.998	2.415	2.449
58.882	5.033	210.333	0.176	1.6719132376E+003	4.2087109118E+002	7.6570818488E+000	1.002	2.411	2.436
59.632	5.057	210.471	0.186	1.6778972765E+003	4.2440922357E+002	8.0010450072E+000	1.006	2.404	2.420
60.286	5.081	210.595	0.201	1.6831388313E+003	4.2762505057E+002	8.1833236430E+000	1.010	2.397	2.405
61.036	5.129	210.753	0.220	1.6894165611E+003	4.3158719215E+002	8.2974203133E+000	1.016	2.386	2.385
61.786	5.188	210.924	0.220	1.6955868821E+003	4.3558423748E+002	7.3222891215E+000	1.021	2.373	2.363
62.506	5.235	211.078	0.222	1.7002367609E+003	4.3875560698E+002	5.8762012620E+000	1.025	2.358	2.344
63.257	5.281	211.251	0.219	1.7041928780E+003	4.4173401401E+002	4.2756832822E+000	1.029	2.341	2.322
64.007	5.309	211.406	0.202	1.7066512753E+003	4.4395843731E+002	2.0960910773E+000	1.033	2.324	2.303
64.572	5.324	211.517	0.204	1.7073330399E+003	4.4505479815E+002	3.5473944121E-001	1.034	2.310	2.290
65.322	5.337	211.675	0.210	1.7067528072E+003	4.4592601772E+002	-1.7605907132E+000	1.036	2.293	2.274
66.072	5.350	211.833	0.210	1.7046917464E+003	4.4617458827E+002	-3.8394294604E+000	1.037	2.276	2.260
66.590	5.359	211.942	0.219	1.7023127440E+003	4.4594382162E+002	-5.5511357018E+000	1.037	2.264	2.251
67.341	5.364	212.111	0.226	1.6971081356E+003	4.4502137084E+002	-7.9391128443E+000	1.037	2.247	2.239
68.091	5.369	212.280	0.226	1.6904022373E+003	4.4354399103E+002	-9.9674621444E+000	1.036	2.232	2.229
68.557	5.372	212.385	0.235	1.6854584277E+003	4.4233850625E+002	-1.1547397371E+001	1.036	2.223	2.223
69.307	5.370	212.566	0.241	1.6756602319E+003	4.3979292627E+002	-1.4080157644E+001	1.034	2.208	2.215
70.057	5.367	212.746	0.241	1.6643349325E+003	4.3670276124E+002	-1.5967210778E+001	1.032	2.194	2.207
70.597	5.366	212.876	0.249	1.6553753126E+003	4.3416557641E+002	-1.7646757575E+001	1.031	2.185	2.203
71.347	5.356	213.068	0.256	1.6410399885E+003	4.2998977756E+002	-2.0092347860E+001	1.028	2.173	2.197
72.097	5.346	213.259	0.255	1.6252321406E+003	4.2527582741E+002	-2.1608391598E+001	1.025	2.163	2.191
72.567	5.339	213.378	0.253	1.6149338176E+003	4.2215115870E+002	-2.2754234221E+001	1.022	2.156	2.189
73.317	5.308	213.568	0.257	1.5968927060E+003	4.1660899637E+002	-2.5095926977E+001	1.018	2.148	2.185
74.067	5.283	213.763	0.256	1.5772841189E+003	4.1050663511E+002	-2.6308773259E+001	1.014	2.140	2.182
74.588	5.260	213.894	0.273	1.5635070775E+003	4.0616844839E+002	-2.8677071223E+001	1.010	2.135	2.180
75.338	5.238	214.110	0.292	1.5395659919E+003	3.9855153208E+002	-3.2906035777E+001	1.004	2.131	2.178
76.088	5.221	214.332	0.292	1.5141404081E+003	3.9041433356E+002	-3.3808934384E+001	0.997	2.127	2.177
76.661	5.203	214.496	0.286	1.4948315032E+003	3.8421813643E+002	-3.4079891330E+001	0.991	2.126	2.177
77.411	5.164	214.711	0.288	1.4689362416E+003	3.7591782708E+002	-3.5043081251E+001	0.984	2.126	2.178
78.161	5.127	214.928	0.281	1.4422587709E+003	3.6738051075E+002	-3.4803331777E+001	0.976	2.127	2.180
78.885	5.079	215.126	0.282	1.4175873618E+003	3.5950365262E+002	-3.5404157385E+001	0.969	2.131	2.183
79.635	5.039	215.344	0.290	1.3899923666E+003	3.5075093900E+002	-3.6823426146E+001	0.961	2.135	2.188
80.385	4.997	215.561	0.286	1.3623437002E+003	3.4204471939E+002	-3.4425185152E+001	0.952	2.142	2.193
80.500	4.988	215.591	0.269	1.3584341892E+003	3.4082290912E+002	-3.4154505500E+001	0.951	2.143	2.194
81.036	4.948	215.736	0.275	1.3398737569E+003	3.3503406263E+002	-3.5137023469E+001	0.946	2.148	2.199
81.786	4.894	215.945	0.276	1.3129846336E+003	3.2670957034E+002	-3.5468165192E+001	0.938	2.155	2.206
82.536	4.835	216.149	0.270	1.2866633003E+003	3.1861717000E+002	-3.4715193866E+001	0.930	2.164	2.214
83.140	4.785	216.311	0.271	1.2658902427E+003	3.1226337868E+002	-3.4769013819E+001	0.924	2.170	2.220
83.890	4.724	216.517	0.274	1.2394783696E+003	3.0421732278E+002	-3.5083597790E+001	0.916	2.179	2.227
84.640	4.661	216.722	0.269	1.2132567263E+003	2.9624819550E+002	-3.3762621065E+001	0.908	2.187	2.234
85.000	4.627	216.815	0.266	1.2013102055E+003	2.9262408337E+002	-3.4351623206E+001	0.905	2.190	2.237
85.221	4.609	216.876	0.287	1.1935772908E+003	2.9027183308E+002	-3.5456715394E+001	0.902	2.193	2.238
85.971	4.555	217.094	0.294	1.1659776793E+003	2.8184549143E+002	-3.7098324238E+001	0.893	2.201	2.242
86.721	4.506	217.317	0.292	1.1379212184E+003	2.7322414641E+002	-3.6361254907E+001	0.882	2.208	2.245
87.292	4.461	217.480	0.293	1.1176018919E+003	2.6694990873E+002	-3.6356504614E+001	0.875	2.213	2.245
88.042	4.410	217.705	0.313	1.0895536729E+003	2.5825252764E+002	-3.8870196966E+001	0.864	2.220	2.243
88.792	4.377	217.949	0.321	1.0592876003E+003	2.4883074103E+002	-3.9640172125E+001	0.851	2.227	2.240
89.380	4.346	218.134	0.320	1.0363114577E+003	2.4166386001E+002	-3.9484487270E+001	0.841	2.232	2.236
90.130	4.307	218.377	0.348	1.0063111839E+003	2.3231535840E+002	-4.2989115784E+001	0.827	2.239	2.232
90.880	4.306	218.657	0.350	9.7181783460E+002	2.2169418060E+002	-4.2499153675E+001	0.811	2.247	2.227
91.499	4.273	218.856	0.315	9.4731849394E+002	2.1425005695E+002	-3.8664286559E+001	0.799	2.252	2.225
92.000	4.236	219.010	0.306	9.2832423049E+002	2.0855010873E+002	-3.7758538333E+001	0.790	2.256	2.224

92.750	4.179	219.238	0.298	9.0014135370E+002	2.0023368500E+002	-3.6788031569E+001	0.778	2.262	2.224
93.500	4.113	219.457	0.293	8.7313366889E+002	1.9245051307E+002	-3.6656187332E+001	0.766	2.267	2.226
93.682	4.097	219.511	0.294	8.6644727469E+002	1.9055137809E+002	-3.6731975962E+001	0.763	2.269	2.227
94.432	4.028	219.731	0.293	8.3914794895E+002	1.8293242651E+002	-3.6360927666E+001	0.751	2.273	2.232
95.182	3.957	219.950	0.283	8.1189746778E+002	1.7548789636E+002	-3.5329584931E+001	0.740	2.277	2.240
95.932	3.874	220.156	0.274	7.8614539484E+002	1.6858570767E+002	-3.3204763799E+001	0.729	2.280	2.249
95.966	3.870	220.165	0.264	7.8502479673E+002	1.6828942458E+002	-3.3250822675E+001	0.728	2.280	2.250
96.000	3.864	220.174	0.290	7.8389112805E+002	1.6799063843E+002	-3.3497301482E+001	0.728	2.280	2.250
96.750	3.767	220.392	0.294	7.5629604522E+002	1.6074359653E+002	-3.7312255430E+001	0.717	2.282	2.262
97.500	3.674	220.616	0.298	7.2791410933E+002	1.5335069111E+002	-3.8077306969E+001	0.704	2.284	2.274
98.019	3.611	220.771	0.310	7.0808337083E+002	1.4821607885E+002	-3.9287377606E+001	0.696	2.284	2.283
98.769	3.503	221.010	0.319	6.7748067407E+002	1.4032226636E+002	-4.1069025005E+001	0.682	2.285	2.296
99.000	3.470	221.084	0.327	6.6796963938E+002	1.3787128390E+002	-4.1428811898E+001	0.677	2.285	2.300
99.750	3.369	221.330	0.342	6.3622112374E+002	1.2970630958E+002	-4.7182177056E+001	0.662	2.286	2.313
100.006	3.348	221.427	0.387	6.2371527215E+002	1.2651673502E+002	-4.9136167858E+001	0.656	2.287	2.318
100.756	3.260	221.719	0.402	5.8620721801E+002	1.1698493085E+002	-5.1497744885E+001	0.636	2.289	2.333
101.506	3.190	222.030	0.408	5.4645673615E+002	1.0696433782E+002	-5.1357199831E+001	0.613	2.292	2.348
101.916	3.145	222.193	0.385	5.2577090308E+002	1.0180228127E+002	-4.9465086802E+001	0.600	2.293	2.356
102.666	3.015	222.476	0.399	4.9003694418E+002	9.3034839677E+001	-4.9786548643E+001	0.579	2.298	2.369
103.417	2.917	222.791	0.420	4.5107955748E+002	8.3680991968E+001	-5.1417384438E+001	0.554	2.305	2.384
103.942	2.848	223.012	0.423	4.2425817799E+002	7.7361217457E+001	-5.0948647098E+001	0.535	2.311	2.395
104.692	2.710	223.330	0.414	3.8615444181E+002	6.8558446268E+001	-4.8822406805E+001	0.508	2.321	2.411
105.442	2.556	223.633	0.405	3.5101326829E+002	6.0680583129E+001	-4.8251904273E+001	0.483	2.333	2.427
105.500	2.545	223.657	0.390	3.4821455277E+002	6.0058541557E+001	-4.7892449090E+001	0.480	2.334	2.428
106.094	2.413	223.887	0.421	3.2262191898E+002	5.4519373002E+001	-4.5038813333E+001	0.462	2.344	2.439
106.844	2.258	224.223	0.457	2.8699293761E+002	4.7032550216E+001	-4.7395439699E+001	0.434	2.358	2.452
107.594	2.117	224.573	0.458	2.5151779019E+002	3.9758869364E+001	-4.5217616336E+001	0.403	2.372	2.462
108.344	1.963	224.910	0.447	2.1915604791E+002	3.3335345892E+001	-4.1065744210E+001	0.372	2.382	2.465
108.591	1.909	225.018	0.458	2.0919715665E+002	3.1400299055E+001	-4.0534256681E+001	0.362	2.384	2.464
109.341	1.736	225.367	0.476	1.7844674747E+002	2.5584370196E+001	-4.2215075580E+001	0.329	2.397	2.467
110.091	1.580	225.733	0.488	1.4586477299E+002	1.9373096244E+001	-4.2021895650E+001	0.283	2.408	2.463
110.841	1.424	226.099	0.480	1.1540417841E+002	1.3751038939E+001	-3.7910949795E+001	0.231	2.408	2.441
111.591	1.256	226.452	0.470	8.8989574152E+001	9.2097046760E+000	-3.3394095100E+001	0.179	2.394	2.396
112.000	1.163	226.644	0.443	7.5747649788E+001	7.0731051810E+000	-2.7663437897E+001	0.150	2.379	2.366
112.219	1.097	226.730	0.417	7.0251412969E+001	6.2587920147E+000	-2.4869926919E+001	0.138	2.368	2.348
112.969	0.878	227.047	0.547	5.2256896412E+001	4.0202491413E+000	-2.8096075044E+001	0.104	2.295	2.249
113.719	0.845	227.551	0.616	2.8100797824E+001	1.7358933462E+000	-2.6671557953E+001	0.085	2.120	2.030
114.469	0.728	227.972	0.616	1.2243386595E+001	6.2672230872E-001	-1.8730975141E+001	0.085	2.011	1.900

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)
19.545	0.750	0.844	-27.246	-1.942	-1.638	21.520	18.157
20.295	0.595	0.669	-27.246	-5.424	-3.631	25.168	16.846
20.890	0.750	0.844	-27.246	-9.087	-7.667	29.322	24.740
21.640	0.750	0.844	-27.246	-13.331	-11.248	34.972	29.507
22.390	0.610	0.686	-27.246	-17.178	-11.782	40.499	27.777
23.000	0.750	0.844	-27.246	-20.907	-17.640	46.288	39.054
23.750	0.750	0.844	-27.246	-24.915	-21.021	53.487	45.129
24.500	0.250	0.281	-27.246	-27.586	-7.750	57.072	16.034

24.750	0.750	0.844	-27.246	-30.532	-25.760	61.763	52.111
25.500	0.500	0.562	-27.246	-34.329	-19.302	67.110	37.734
26.000	0.750	0.844	-27.246	-37.801	-31.894	71.761	60.546
26.750	0.750	0.844	-27.246	-41.710	-35.192	77.178	65.117
27.500	0.044	0.049	-27.246	-43.778	-2.164	79.100	3.909
27.544	0.456	0.506	-25.764	-43.091	-21.810	85.595	43.323
28.000	0.750	0.833	-25.764	-46.052	-38.358	92.246	76.833
28.750	0.580	0.644	-25.764	-49.384	-31.798	98.336	63.317
29.330	0.750	0.833	-25.764	-52.656	-43.858	107.827	89.811
30.080	0.750	0.833	-25.764	-56.293	-46.887	112.539	93.735
30.830	0.170	0.189	-25.764	-58.523	-11.032	114.072	21.503
31.000	0.155	0.173	-25.764	-59.271	-10.226	118.990	20.530
31.155	0.750	0.809	-22.037	-53.394	-43.208	126.409	102.295
31.905	0.750	0.809	-22.037	-55.858	-45.202	132.221	106.998
32.656	0.750	0.809	-22.037	-58.322	-47.196	137.042	110.900
33.406	0.063	0.068	-22.037	-59.657	-4.033	138.222	9.344
33.468	0.532	0.555	-16.629	-46.059	-25.554	138.321	76.742
34.000	0.750	0.783	-16.629	-47.710	-37.350	140.686	110.137
34.750	0.250	0.261	-16.629	-49.209	-12.833	142.861	37.257
35.000	0.281	0.294	-16.629	-50.102	-14.713	143.286	42.078
35.281	0.719	0.729	-9.465	-27.378	-19.946	144.896	105.562
36.000	0.750	0.760	-9.465	-28.481	-21.659	148.792	113.152
36.750	0.250	0.253	-9.465	-29.181	-7.393	148.172	37.537
37.000	0.181	0.183	-9.465	-29.452	-5.394	147.824	27.075
37.181	0.750	0.752	-3.650	-6.680	-5.021	146.533	110.141
37.931	0.189	0.190	-3.650	-6.763	-1.282	147.512	27.969
38.120	0.660	0.662	-3.650	-6.826	-4.516	148.654	98.360
38.780	0.320	0.320	2.424	18.526	5.928	144.009	46.077
39.100	0.750	0.751	2.424	18.661	14.011	144.245	108.297
39.850	0.745	0.746	2.424	18.865	14.072	145.346	108.418
40.595	0.750	0.756	7.136	38.859	29.376	139.898	105.759
41.345	0.750	0.756	7.136	39.077	29.541	140.301	106.064
42.096	0.503	0.507	7.136	39.259	19.894	140.694	71.297
42.598	0.750	0.762	10.287	52.324	39.890	136.886	104.358
43.349	0.750	0.762	10.287	52.433	39.973	137.076	104.502
44.099	0.750	0.762	10.287	52.542	40.057	137.264	104.646
44.849	0.324	0.329	10.287	52.621	17.336	137.392	45.265
45.173	0.327	0.332	10.085	51.851	17.224	137.698	45.741
45.500	0.750	0.762	10.085	51.912	39.551	137.824	105.007
46.250	0.750	0.762	10.085	51.982	39.604	137.966	105.115
47.000	0.527	0.536	10.085	52.041	27.873	138.087	73.960
47.528	0.750	0.761	9.855	51.164	38.953	138.443	105.403
48.278	0.750	0.761	9.855	51.245	39.015	138.619	105.538
49.028	0.702	0.712	9.855	51.324	36.561	138.798	98.876
49.730	0.750	0.761	9.615	50.421	38.360	139.213	105.913
50.480	0.750	0.761	9.615	50.513	38.431	139.432	106.080
51.230	0.270	0.274	9.615	50.576	13.856	139.566	38.237
51.500	0.364	0.369	9.615	50.632	18.685	139.699	51.554
51.864	0.750	0.760	9.360	49.696	37.781	140.234	106.611
52.614	0.750	0.760	9.360	49.866	37.910	140.654	106.930
53.364	0.573	0.581	9.360	50.017	29.058	141.016	81.925
53.937	0.750	0.760	9.120	49.160	37.348	141.619	107.591
54.687	0.750	0.760	9.120	49.340	37.484	142.078	107.940
55.438	0.562	0.570	9.120	49.497	28.196	142.477	81.163
56.000	0.025	0.025	9.120	49.564	1.233	142.646	3.548
56.025	0.750	0.759	8.883	48.557	36.866	142.902	108.494
56.775	0.750	0.759	8.883	48.562	36.869	142.946	108.528
57.525	0.375	0.380	8.883	48.565	18.443	142.970	54.295
57.900	0.232	0.235	8.883	48.601	11.418	143.063	33.610
58.132	0.750	0.759	8.651	47.755	36.234	143.716	109.044
58.882	0.750	0.759	8.651	47.989	36.412	144.375	109.544
59.632	0.653	0.661	8.651	48.208	31.863	144.962	95.813
60.286	0.750	0.758	8.428	47.458	35.988	145.796	110.558
61.036	0.750	0.758	8.428	47.698	36.170	146.437	111.044
61.786	0.720	0.728	8.428	47.933	34.908	146.959	107.025
62.506	0.750	0.761	9.626	53.418	40.642	146.304	111.312

63.257	0.750	0.761	9.626	53.619	40.795	146.724	111.632
64.007	0.566	0.574	9.626	53.795	30.860	147.085	84.376
64.572	0.750	0.764	10.944	59.701	45.612	146.137	111.650
65.322	0.750	0.764	10.944	59.843	45.721	146.442	111.883
66.072	0.518	0.528	10.944	59.964	31.633	146.700	77.388
66.590	0.750	0.768	12.333	66.023	50.695	145.566	111.771
67.341	0.750	0.768	12.333	66.086	50.743	145.735	111.900
68.091	0.466	0.477	12.333	66.138	31.557	145.872	69.602
68.557	0.750	0.772	13.693	71.872	55.489	144.648	111.677
69.307	0.750	0.772	13.693	71.841	55.465	144.683	111.704
70.057	0.540	0.556	13.693	71.814	39.911	144.707	80.423
70.597	0.750	0.777	15.040	77.251	60.003	143.403	111.384
71.347	0.750	0.777	15.040	77.109	59.893	143.307	111.310
72.097	0.469	0.486	15.040	76.994	37.417	143.191	69.587
72.567	0.750	0.782	16.381	82.124	64.209	141.764	110.839
73.317	0.750	0.782	16.381	81.855	63.999	141.548	110.670
74.067	0.521	0.543	16.381	81.628	44.358	141.258	76.761
74.588	0.750	0.787	17.625	86.065	67.739	140.130	110.291
75.338	0.750	0.787	17.625	85.665	67.424	139.783	110.018
76.088	0.572	0.600	17.625	85.312	51.223	139.295	83.636
76.661	0.750	0.792	18.733	88.928	70.438	137.756	109.113
77.411	0.750	0.792	18.733	88.399	70.019	137.180	108.657
78.161	0.724	0.765	18.733	87.879	67.200	136.342	104.258
78.885	0.750	0.793	19.019	88.345	70.096	135.647	107.626
79.635	0.750	0.793	19.019	87.781	69.648	134.910	107.041
80.385	0.115	0.121	19.019	87.456	10.620	134.164	16.292
80.500	0.536	0.567	19.019	87.178	49.422	133.866	75.890
81.036	0.750	0.795	19.319	87.617	69.644	132.945	105.675
81.786	0.750	0.795	19.319	86.921	69.091	131.965	104.895
82.536	0.604	0.640	19.319	86.293	55.196	131.086	83.848
83.140	0.750	0.796	19.624	86.651	69.007	130.059	103.575
83.890	0.750	0.796	19.624	85.915	68.420	129.116	102.824
84.640	0.360	0.382	19.624	85.371	32.624	128.241	49.006
85.000	0.221	0.234	19.624	85.101	19.926	128.130	30.000
85.221	0.750	0.798	19.932	85.657	68.347	127.529	101.757
85.971	0.750	0.798	19.932	84.984	67.810	126.813	101.186
86.721	0.571	0.608	19.932	84.391	51.283	125.900	76.507
87.292	0.750	0.799	20.242	84.739	67.748	125.114	100.028
88.042	0.750	0.799	20.242	84.025	67.177	124.644	99.652
88.792	0.588	0.627	20.242	83.388	52.246	123.739	77.528
89.380	0.750	0.801	20.544	83.636	66.997	122.808	98.376
90.130	0.750	0.801	20.544	82.881	66.393	122.610	98.218
90.880	0.618	0.660	20.544	82.193	54.267	120.941	79.850
91.499	0.501	0.536	20.838	82.466	44.241	119.732	64.233
92.000	0.750	0.803	20.838	81.728	65.596	118.760	95.318
92.750	0.750	0.803	20.838	80.782	64.837	117.368	94.201
93.500	0.182	0.194	20.838	80.195	15.585	116.721	22.683
93.682	0.750	0.804	21.113	80.349	64.608	115.651	92.994
94.432	0.750	0.804	21.113	79.364	63.816	114.425	92.008
95.182	0.750	0.804	21.113	78.379	63.024	112.990	90.854
95.932	0.034	0.036	21.113	77.864	2.821	112.215	4.066
95.966	0.034	0.037	22.849	82.289	3.036	110.489	4.076
96.000	0.750	0.814	22.849	81.665	66.474	110.263	89.752
96.750	0.750	0.814	22.849	80.473	65.504	109.104	88.809
97.500	0.519	0.563	22.849	79.466	44.715	108.066	60.808
98.019	0.750	0.826	24.813	82.823	68.445	105.355	87.066
98.769	0.231	0.255	24.813	81.832	20.836	104.444	26.594
99.000	0.750	0.826	24.813	80.763	66.743	103.572	85.592
99.750	0.256	0.282	24.813	79.644	22.467	103.379	29.163
100.006	0.750	0.841	26.887	82.486	69.373	100.481	84.507
100.756	0.750	0.841	26.887	80.434	67.648	99.082	83.331
101.506	0.410	0.460	26.887	78.848	36.239	97.193	44.670
101.916	0.750	0.856	28.855	80.398	68.857	93.288	79.897
102.666	0.750	0.856	28.855	77.957	66.767	91.842	78.659
103.417	0.525	0.600	28.855	75.883	45.516	89.841	53.889
103.942	0.750	0.878	31.324	76.903	67.529	85.589	75.156

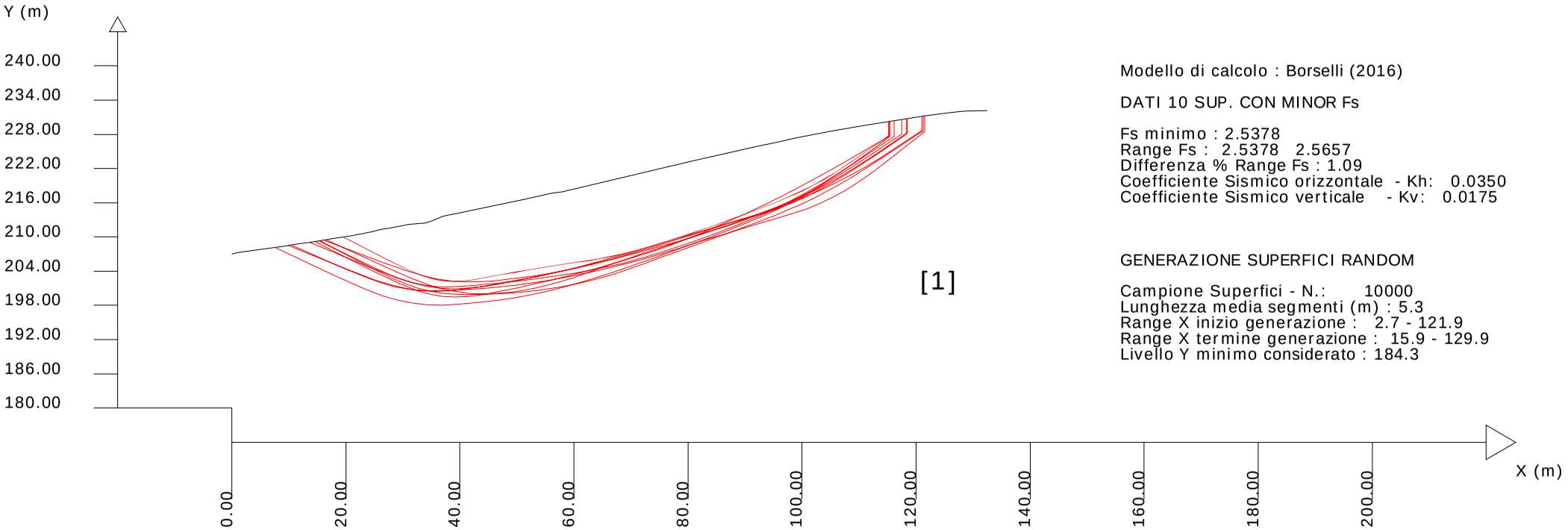
104.692	0.750	0.878	31.324	73.941	64.928	82.441	72.392
105.442	0.058	0.068	31.324	72.346	4.901	81.447	5.518
105.500	0.594	0.695	31.324	70.971	49.343	79.332	55.155
106.094	0.750	0.897	33.226	69.865	62.649	75.955	68.110
106.844	0.750	0.897	33.226	66.251	59.408	73.225	65.662
107.594	0.750	0.897	33.226	62.636	56.167	69.797	62.588
108.344	0.247	0.295	33.226	60.235	17.758	67.549	19.914
108.591	0.750	0.914	34.824	58.821	53.748	64.485	58.924
109.341	0.750	0.914	34.824	54.830	50.101	62.339	56.963
110.091	0.750	0.914	34.824	50.839	46.454	59.064	53.970
110.841	0.750	0.914	34.824	46.847	42.807	55.224	50.461
111.591	0.409	0.498	34.824	43.764	21.787	52.505	26.138
112.000	0.219	0.266	34.824	42.086	11.214	50.115	13.354
112.219	0.750	0.923	35.599	39.716	36.639	47.273	43.610
112.969	0.750	0.923	35.599	35.471	32.723	44.638	41.180
113.719	0.750	0.923	35.599	31.226	28.807	40.574	37.430
114.469	0.750	0.923	35.599	26.982	24.891	37.320	34.429

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

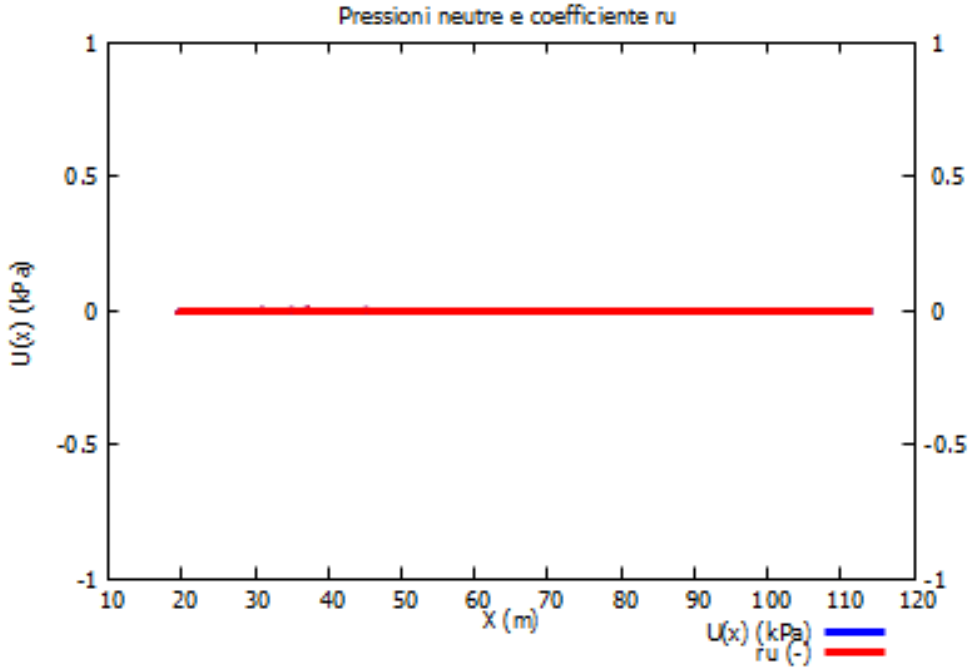
Fs minimo : 2.5378
Range Fs : 2.5378 2.5657
Differenza % Range Fs : 1.09
Coefficiente Sismico orizzontale - Kh: 0.0350
Coefficiente Sismico verticale - Kv: 0.0175

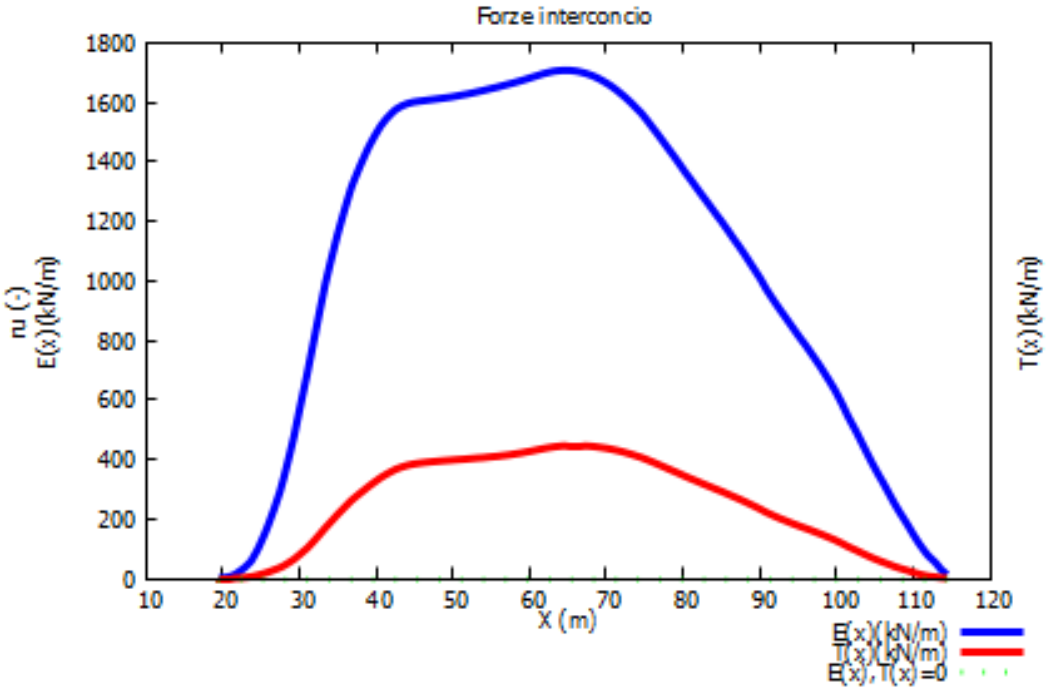
GENERAZIONE SUPERFICI RANDOM

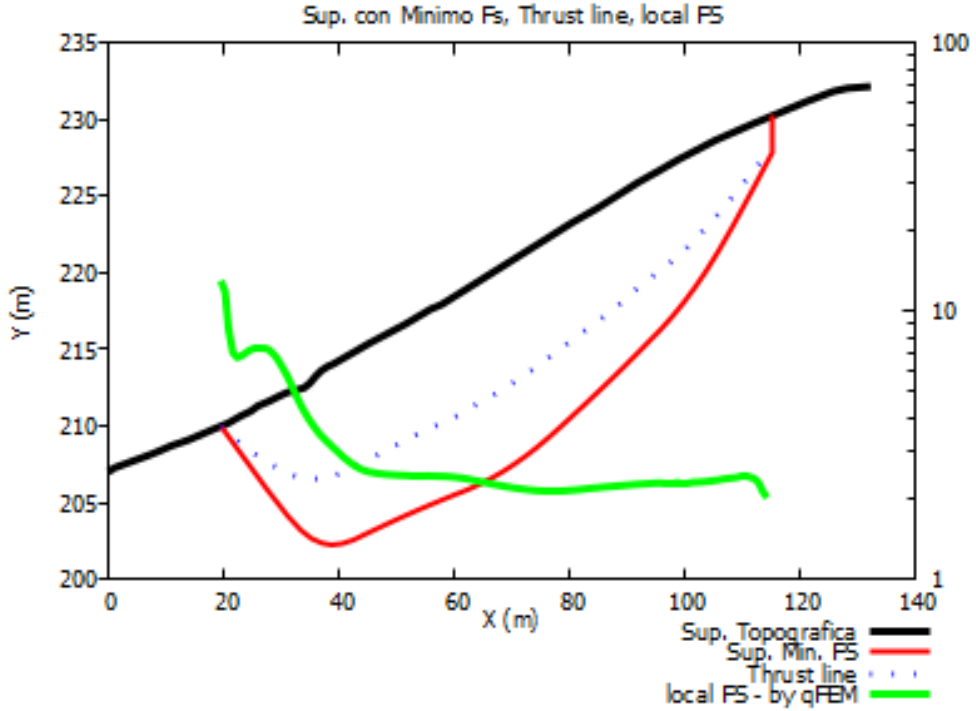
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 5.3
Range X inizio generazione : 2.7 - 121.9
Range X termine generazione : 15.9 - 129.9
Livello Y minimo considerato : 184.3

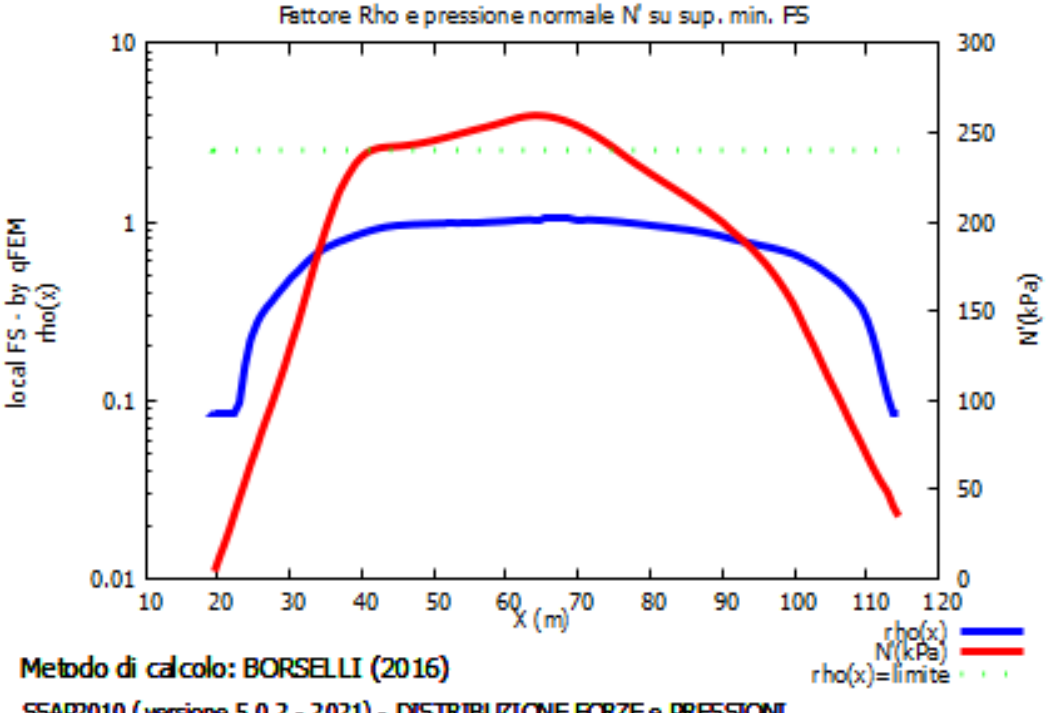
Parametri Geotecnici degli strati # ----------

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





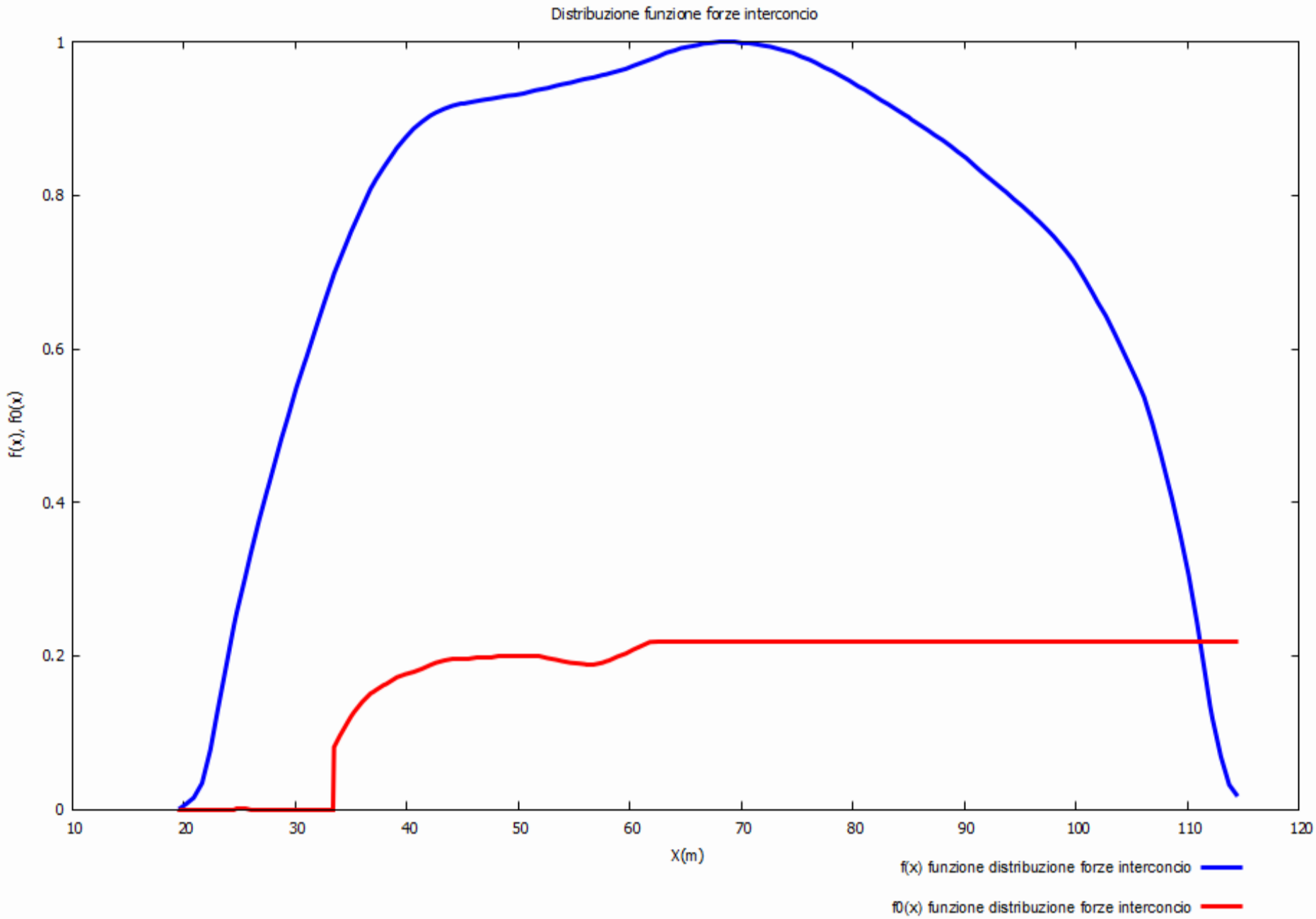


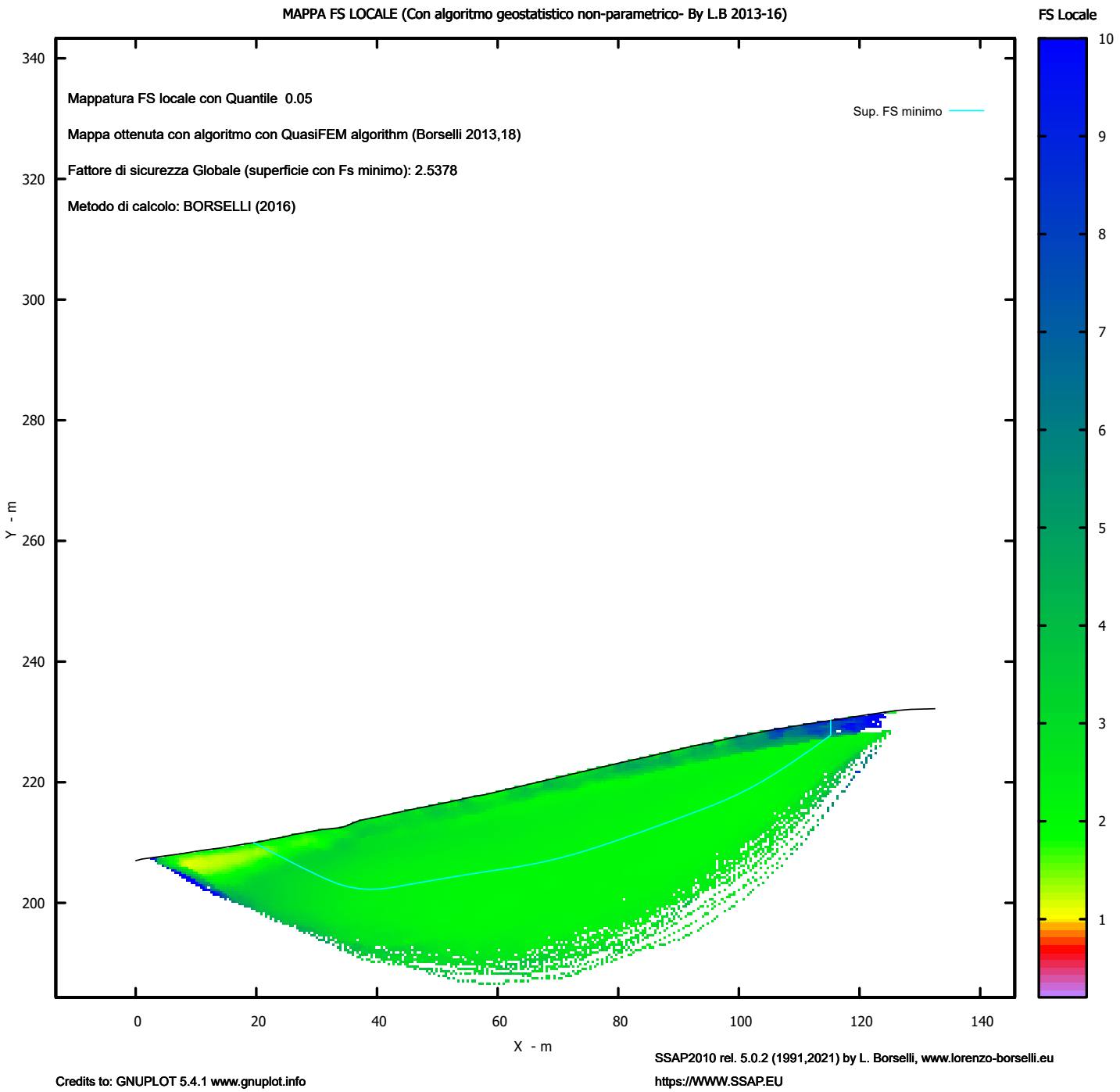


Metodo di calcolo: BORSELLI (2016)

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

18/11/21 12:42

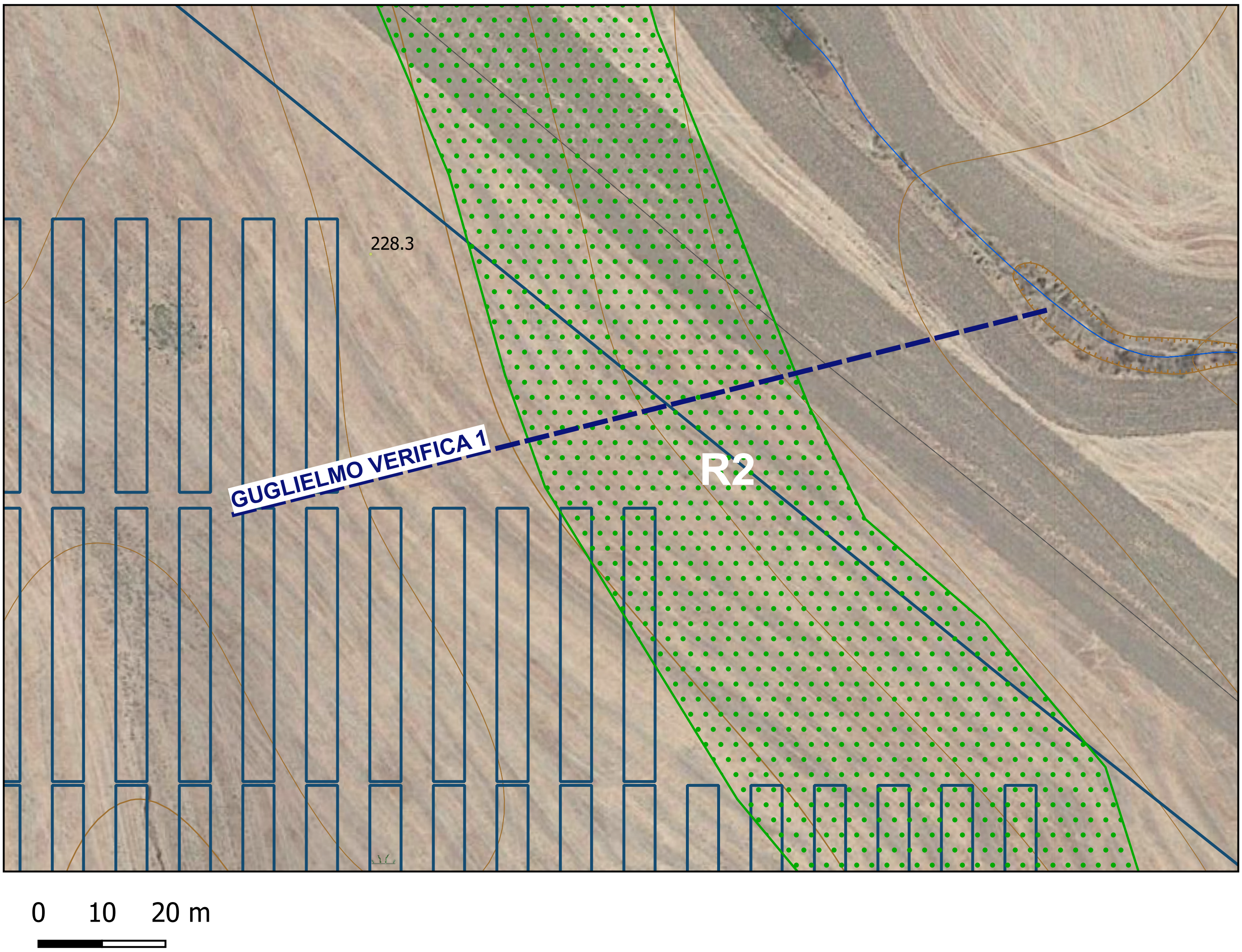

Distribuzione funzione forze interconcio
f(x), f0(x)
X(m)
0
0.2
0.4
0.6
0.8
1
10
20
30
40
50
60
70
80
90
100
110
120
f(x) funzione distribuzione forze interconcio
f0(x) funzione distribuzione forze interconcio

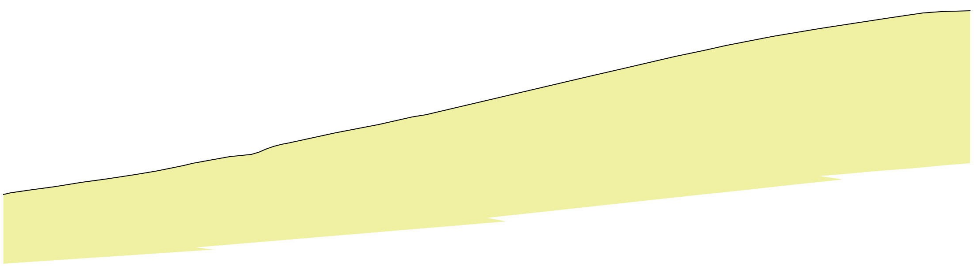

MAPPA FS LOCALE (Con algoritmo geostatistico non-parametrico- By L.B 2013-16)
FS Locale
Mappatura FS locale con Quantile 0.05
Mappa ottenuta con algoritmo con QuasiFEM algorithm (Borselli 2013,18)
Fattore di sicurezza Globale (superficie con Fs minimo): 2.5378
Metodo di calcolo: BORSELLI (2016)
Sup. FS minimo
Y - m
X - m
340
320
300
280
260
240
220
200
0
20
40
60
80
100
120
140
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

SEZIONE DI VERIFICA N. 1





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PICCHETTO	DISTANZE PROGRESSIVE	DISTANZE PARZIALI	QUOTE
1	0		206.99
2	1	1	207.25
3	4	3	207.67
4	7.12	3.12	208.09
5	9	1.88	208.38
6	10.89	1.89	208.69
7	14	3.11	209.09
8	18	4	209.74
9	20.89	2.89	210.19
10	23	2.11	210.65
11	24.75	1.75	210.96
12	26	1.25	211.3
13	28	2	211.62
14	29.33	1.33	211.88
15	31	1.67	212.17
16	34	3	212.48
17	35	1	212.79
18	36	1	213.24
19	37	1	213.61
20	38.12	1.12	213.88
21	39.1	0.98	214.05
22	45.5	6.4	215.43
23	51.5	6	216.63
24	56	4.5	217.63
25	57.9	1.9	217.93
26	80.5	22.6	223.26
27	85	4.5	224.24
28	92	7	225.9
29	96	4	226.74
30	99	3	227.4
31	105.5	6.5	228.67
32	112	6.5	229.74
33	121.5	9.5	231.22
34	126	4.5	231.86
35	128.5	2.5	232.07
36	132.5	4	232.18

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 GUGLIELMO\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	206.99	-	-	-	-	-	-
1.00	207.25	-	-	-	-	-	-
4.00	207.67	-	-	-	-	-	-
7.12	208.09	-	-	-	-	-	-
9.00	208.38	-	-	-	-	-	-
10.89	208.69	-	-	-	-	-	-
14.00	209.09	-	-	-	-	-	-
18.00	209.74	-	-	-	-	-	-
20.89	210.19	-	-	-	-	-	-
23.00	210.65	-	-	-	-	-	-
24.75	210.96	-	-	-	-	-	-
26.00	211.30	-	-	-	-	-	-
28.00	211.62	-	-	-	-	-	-
29.33	211.88	-	-	-	-	-	-
31.00	212.17	-	-	-	-	-	-
34.00	212.48	-	-	-	-	-	-
35.00	212.79	-	-	-	-	-	-
36.00	213.24	-	-	-	-	-	-
37.00	213.61	-	-	-	-	-	-
38.12	213.88	-	-	-	-	-	-
39.10	214.05	-	-	-	-	-	-
45.50	215.43	-	-	-	-	-	-
51.50	216.63	-	-	-	-	-	-
56.00	217.63	-	-	-	-	-	-
57.90	217.93	-	-	-	-	-	-
80.50	223.26	-	-	-	-	-	-
85.00	224.24	-	-	-	-	-	-
92.00	225.90	-	-	-	-	-	-
96.00	226.74	-	-	-	-	-	-
99.00	227.40	-	-	-	-	-	-
105.50	228.67	-	-	-	-	-	-
112.00	229.74	-	-	-	-	-	-
121.50	231.22	-	-	-	-	-	-
126.00	231.86	-	-	-	-	-	-
128.50	232.07	-	-	-	-	-	-
132.50	232.18	-	-	-	-	-	-

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)*: 5.3 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 2.65 121.90
LIVELLO MINIMO CONSIDERATO (Ymin): 198.00
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 15.90 129.85
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)	1.8041	- Min. -	X	Y	Lambda= 0.1711
			20.56	210.14	
			26.64	205.81	
			29.52	203.85	
			31.43	202.66	
			33.02	201.81	
			34.58	201.12	
			35.98	200.60	
			37.51	200.16	
			39.16	199.80	
			41.17	199.45	
			42.95	199.17	
			44.62	198.95	
			46.21	198.78	

47.83 198.65
49.39 198.56
51.01 198.51
52.69 198.50
54.52 198.52
56.21 198.56
57.84 198.64
59.43 198.75
61.06 198.89
62.65 199.06
64.28 199.27
65.98 199.52
67.82 199.82
69.49 200.13
71.10 200.47
72.67 200.84
74.28 201.28
75.84 201.73
77.43 202.25
79.08 202.82
80.85 203.48
82.56 204.12
84.23 204.76
85.88 205.40
87.53 206.05
89.18 206.71
90.85 207.39
92.57 208.09
94.34 208.83
95.98 209.56
97.57 210.32
99.12 211.11
100.74 211.99
102.30 212.89
103.91 213.88
105.58 214.96
107.41 216.19
109.11 217.38
110.75 218.57
112.35 219.77
113.93 221.01
113.93 230.04

Fattore di sicurezza (FS) 1.8939 - N.2 -- X Y Lambda= 0.1602
25.80 211.24
35.07 206.08
39.44 203.76
42.35 202.39
44.76 201.43
47.14 200.69
49.30 200.18
51.66 199.78
54.25 199.51
57.45 199.30
60.13 199.22
62.58 199.25
64.87 199.38
67.28 199.64
69.54 199.99
71.94 200.47
74.48 201.08
77.41 201.90
80.05 202.68
82.57 203.49
84.98 204.33

87.45 205.25
89.86 206.22
92.37 207.29
95.00 208.47
97.91 209.85
100.44 211.15
102.85 212.52
105.13 213.95
107.57 215.61
110.13 217.56
113.13 220.02
114.64 221.33
114.64 230.15

Fattore di sicurezza (FS) 1.9095 - N.3 -- X Y Lambda= 0.1677
17.08 209.59
23.31 206.01
26.26 204.38
28.25 203.40
29.90 202.70
31.52 202.14
32.98 201.73
34.55 201.39
36.21 201.13
38.18 200.91
40.02 200.72
41.77 200.55
43.48 200.39
45.16 200.25
46.84 200.12
48.53 200.00
50.23 199.90
51.95 199.80
53.68 199.71
55.39 199.61
57.09 199.51
58.79 199.41
60.53 199.30
62.30 199.19
64.16 199.07
66.12 198.94
67.76 198.91
69.32 198.97
70.75 199.12
72.36 199.39
73.81 199.73
75.38 200.21
77.06 200.82
79.06 201.62
80.90 202.39
82.65 203.14
84.34 203.89
86.02 204.66
87.69 205.45
89.39 206.28
91.13 207.14
92.96 208.08
94.67 208.99
96.33 209.93
97.96 210.88
99.64 211.90
101.27 212.94
102.94 214.05
104.64 215.22
106.45 216.51

108.19 217.77
109.90 219.03
111.58 220.29
112.81 221.23
112.81 229.87

Fattore di sicurezza (FS) 1.9200 - N.4 -- X Y Lambda= 0.1666
26.14 211.32
33.96 206.69
37.64 204.60
40.10 203.36
42.14 202.48
44.15 201.79
45.96 201.30
47.96 200.91
50.13 200.61
52.80 200.37
55.06 200.23
57.15 200.18
59.10 200.21
61.15 200.34
63.06 200.54
65.08 200.83
67.18 201.21
69.56 201.72
71.80 202.22
73.96 202.72
76.07 203.24
78.17 203.77
80.27 204.32
82.41 204.90
84.62 205.53
86.95 206.21
89.06 206.88
91.10 207.61
93.07 208.38
95.14 209.26
97.13 210.17
99.20 211.21
101.37 212.36
103.78 213.71
105.96 214.99
108.05 216.30
110.06 217.63
112.14 219.08
114.39 220.76
115.15 221.36
115.15 230.23

Fattore di sicurezza (FS) 1.9214 - N.5 -- X Y Lambda= 0.1530
24.68 210.95
29.91 206.48
32.30 204.52
33.84 203.40
35.07 202.65
36.32 202.07
37.38 201.70
38.57 201.42
39.87 201.24
41.56 201.12
43.11 201.00
44.57 200.89
45.98 200.78
47.35 200.67

48.73 200.56
50.10 200.45
51.49 200.33
52.87 200.21
54.24 200.10
55.61 199.99
56.98 199.89
58.35 199.79
59.73 199.69
61.11 199.60
62.52 199.51
63.96 199.43
65.33 199.37
66.67 199.33
67.98 199.33
69.34 199.34
70.66 199.38
72.03 199.45
73.45 199.54
75.00 199.67
76.38 199.82
77.71 200.00
78.99 200.23
80.32 200.50
81.61 200.81
82.96 201.18
84.39 201.62
86.01 202.16
87.41 202.67
88.73 203.22
89.98 203.81
91.31 204.49
92.56 205.21
93.87 206.02
95.25 206.94
96.80 208.04
98.24 209.09
99.62 210.12
100.97 211.16
102.32 212.24
103.65 213.34
105.00 214.48
106.37 215.67
107.80 216.94
109.20 218.19
110.58 219.44
111.96 220.69
111.96 229.73

Fattore di sicurezza (FS) 1.9288 - N.6 -- X Y Lambda= 0.1686
14.82 209.22
24.96 204.78
29.77 202.79
33.01 201.61
35.71 200.79
38.36 200.19
40.78 199.79
43.41 199.51
46.24 199.36
49.67 199.31
52.60 199.35
55.32 199.48
57.89 199.70
60.57 200.05
63.10 200.47

65.76 201.02
68.54 201.69
71.67 202.53
74.57 203.36
77.35 204.20
80.06 205.06
82.80 205.98
85.52 206.94
88.31 207.97
91.22 209.09
94.38 210.35
97.14 211.57
99.78 212.86
102.29 214.23
104.97 215.84
107.79 217.74
111.09 220.14
111.92 220.78
111.92 229.73

Fattore di sicurezza (FS) 1.9448 - N.7 -- X Y Lambda= 0.1615
26.42 211.37
35.85 205.84
40.16 203.46
42.93 202.14
45.13 201.32
47.40 200.76
49.33 200.47
51.51 200.37
53.88 200.45
56.92 200.73
59.70 200.97
62.32 201.19
64.85 201.39
67.32 201.58
69.83 201.76
72.39 201.93
75.06 202.10
77.90 202.27
80.31 202.51
82.59 202.87
84.73 203.34
87.09 203.99
89.27 204.74
91.63 205.69
94.20 206.86
97.28 208.39
99.87 209.80
102.29 211.25
104.54 212.75
106.93 214.50
109.45 216.55
112.39 219.15
114.62 221.25
114.62 230.15

Fattore di sicurezza (FS) 1.9472 - N.8 -- X Y Lambda= 0.1662
31.02 212.17
38.35 206.80
41.73 204.43
43.94 203.05
45.71 202.13
47.51 201.41
49.07 200.94

50.83 200.59
52.76 200.36
55.25 200.20
57.39 200.11
59.36 200.08
61.21 200.11
63.11 200.20
64.94 200.34
66.85 200.54
68.84 200.80
71.07 201.14
73.06 201.50
74.96 201.90
76.79 202.34
78.68 202.86
80.51 203.42
82.41 204.06
84.39 204.78
86.59 205.64
88.59 206.47
90.50 207.33
92.35 208.21
94.26 209.17
96.11 210.16
98.02 211.24
100.00 212.42
102.17 213.77
104.15 215.05
106.07 216.36
107.92 217.68
109.83 219.12
111.91 220.77
111.91 229.72

Fattore di sicurezza (FS) 1.9513 - N.9 -- X Y Lambda= 0.1707
16.69 209.53
26.59 204.21
31.10 201.94
34.01 200.69
36.31 199.93
38.69 199.45
40.72 199.23
43.01 199.21
45.51 199.40
48.71 199.81
51.62 200.17
54.35 200.49
57.00 200.78
59.58 201.05
62.20 201.31
64.87 201.56
67.65 201.80
70.61 202.04
73.15 202.35
75.57 202.77
77.84 203.29
80.32 204.00
82.63 204.79
85.11 205.78
87.79 206.98
90.95 208.52
93.67 209.95
96.22 211.41
98.62 212.92
101.15 214.64

103.82 216.65
106.93 219.15
108.48 220.47
108.48 229.16

Fattore di sicurezza (FS) 1.9565 - N.10 -- X Y Lambda= 0.1684
26.96 211.45
32.24 206.50
34.69 204.30
36.28 203.00
37.56 202.10
38.86 201.38
39.98 200.88
41.24 200.47
42.66 200.13
44.51 199.80
46.05 199.58
47.44 199.43
48.73 199.34
50.09 199.31
51.35 199.34
52.68 199.42
54.07 199.56
55.65 199.77
57.13 199.98
58.55 200.20
59.94 200.43
61.33 200.67
62.70 200.92
64.09 201.19
65.49 201.48
66.94 201.79
68.36 202.10
69.76 202.41
71.16 202.73
72.55 203.06
73.96 203.40
75.37 203.74
76.81 204.10
78.30 204.48
79.69 204.86
81.06 205.27
82.39 205.69
83.77 206.16
85.12 206.66
86.52 207.20
87.98 207.81
89.59 208.50
90.99 209.16
92.34 209.86
93.62 210.59
94.98 211.43
96.26 212.30
97.60 213.28
99.01 214.36
100.57 215.63
102.03 216.84
103.45 218.05
104.83 219.25
105.50 219.84
105.50 228.67

---------- 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	1.804	10950.2	6069.8	4273.4	Surplus
2	1.894	10548.3	5569.5	4421.8	Surplus
3	1.910	11223.2	5877.5	4758.0	Surplus
4	1.920	10369.3	5400.8	4428.4	Surplus
5	1.921	10638.8	5536.9	4548.2	Surplus
6	1.929	11011.0	5708.7	4731.5	Surplus
7	1.945	10467.8	5382.4	4547.1	Surplus
8	1.947	9825.0	5045.8	4274.6	Surplus
9	1.951	10647.9	5456.8	4645.5	Surplus
10	1.956	9596.9	4905.3	4201.1	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 4201.1

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)
20.557	0.333	-35.43	0.98	0.00	0.00	0.00	100.00
20.890	0.790	-35.43	10.53	0.00	0.00	0.00	100.00
21.680	0.790	-35.43	22.32	0.00	0.00	0.00	100.00
22.469	0.531	-35.43	21.64	0.00	0.00	0.00	100.00
23.000	0.790	-35.43	41.78	0.00	0.00	0.00	100.00
23.790	0.790	-35.43	53.05	0.00	0.00	0.00	100.00
24.579	0.171	-35.43	12.97	0.00	0.00	0.00	100.00
24.750	0.790	-35.43	67.36	0.00	0.00	0.00	100.00
25.540	0.460	-35.43	45.05	0.00	0.00	0.00	100.00
26.000	0.644	-35.43	69.61	0.00	0.00	0.00	100.00
26.644	0.790	-34.30	95.23	0.00	0.00	0.00	100.00
27.433	0.567	-34.30	74.95	0.00	0.00	0.00	100.00
28.000	0.790	-34.30	113.81	0.00	0.00	0.00	100.00
28.790	0.540	-34.30	84.33	0.00	0.00	0.00	100.00
29.330	0.186	-34.30	30.29	0.00	0.00	0.00	100.00
29.516	0.790	-31.75	134.59	0.00	0.00	0.00	100.00
30.306	0.694	-31.75	126.61	0.00	0.00	0.00	100.00
31.000	0.431	-31.75	82.46	0.00	0.00	0.00	100.00
31.431	0.790	-28.37	157.53	0.00	0.00	0.00	100.00
32.221	0.790	-28.37	165.70	0.00	0.00	0.00	100.00
33.010	0.006	-28.37	1.20	0.00	0.00	0.00	100.00
33.016	0.790	-23.86	173.30	0.00	0.00	0.00	100.00
33.805	0.195	-23.86	43.77	0.00	0.00	0.00	100.00
34.000	0.579	-23.86	133.55	0.00	0.00	0.00	100.00
34.579	0.421	-20.10	100.00	0.00	0.00	0.00	100.00
35.000	0.790	-20.10	195.21	0.00	0.00	0.00	100.00
35.790	0.194	-20.10	49.43	0.00	0.00	0.00	100.00
35.983	0.017	-16.07	4.36	0.00	0.00	0.00	100.00
36.000	0.790	-16.07	207.29	0.00	0.00	0.00	100.00
36.790	0.210	-16.07	56.67	0.00	0.00	0.00	100.00
37.000	0.513	-16.07	140.23	0.00	0.00	0.00	100.00
37.513	0.607	-12.54	169.42	0.00	0.00	0.00	100.00
38.120	0.790	-12.54	225.09	0.00	0.00	0.00	100.00
38.910	0.190	-12.54	55.06	0.00	0.00	0.00	100.00

39.100	0.059	-12.54	17.25	0.00	0.00	0.00	100.00
39.159	0.790	-9.83	231.69	0.00	0.00	0.00	100.00
39.949	0.790	-9.83	236.63	0.00	0.00	0.00	100.00
40.739	0.436	-9.83	132.67	0.00	0.00	0.00	100.00
41.174	0.790	-8.77	244.16	0.00	0.00	0.00	100.00
41.964	0.790	-8.77	248.86	0.00	0.00	0.00	100.00
42.753	0.199	-8.77	63.45	0.00	0.00	0.00	100.00
42.952	0.790	-7.49	254.58	0.00	0.00	0.00	100.00
43.742	0.790	-7.49	258.99	0.00	0.00	0.00	100.00
44.531	0.086	-7.49	28.55	0.00	0.00	0.00	100.00
44.617	0.790	-6.09	263.71	0.00	0.00	0.00	100.00
45.407	0.093	-6.09	31.38	0.00	0.00	0.00	100.00
45.500	0.707	-6.09	239.98	0.00	0.00	0.00	100.00
46.207	0.790	-4.64	271.51	0.00	0.00	0.00	100.00
46.997	0.790	-4.64	275.08	0.00	0.00	0.00	100.00
47.786	0.039	-4.64	13.83	0.00	0.00	0.00	100.00
47.825	0.790	-3.24	278.67	0.00	0.00	0.00	100.00
48.615	0.778	-3.24	277.77	0.00	0.00	0.00	100.00
49.393	0.790	-1.84	284.97	0.00	0.00	0.00	100.00
50.182	0.790	-1.84	287.92	0.00	0.00	0.00	100.00
50.972	0.040	-1.84	14.60	0.00	0.00	0.00	100.00
51.012	0.488	-0.53	179.54	0.00	0.00	0.00	100.00
51.500	0.790	-0.53	292.65	0.00	0.00	0.00	100.00
52.290	0.399	-0.53	149.16	0.00	0.00	0.00	100.00
52.689	0.790	0.63	296.94	0.00	0.00	0.00	100.00
53.478	0.790	0.63	299.62	0.00	0.00	0.00	100.00
54.268	0.251	0.63	96.00	0.00	0.00	0.00	100.00
54.519	0.790	1.60	303.05	0.00	0.00	0.00	100.00
55.309	0.691	1.60	267.28	0.00	0.00	0.00	100.00
56.000	0.211	1.60	81.94	0.00	0.00	0.00	100.00
56.211	0.790	2.68	307.59	0.00	0.00	0.00	100.00
57.000	0.790	2.68	309.00	0.00	0.00	0.00	100.00
57.790	0.055	2.68	21.55	0.00	0.00	0.00	100.00
57.845	0.055	3.83	21.62	0.00	0.00	0.00	100.00
57.900	0.790	3.83	310.95	0.00	0.00	0.00	100.00
58.690	0.743	3.83	294.74	0.00	0.00	0.00	100.00
59.433	0.790	4.98	314.98	0.00	0.00	0.00	100.00
60.222	0.790	4.98	316.87	0.00	0.00	0.00	100.00
61.012	0.045	4.98	18.16	0.00	0.00	0.00	100.00
61.057	0.790	6.13	318.73	0.00	0.00	0.00	100.00
61.847	0.790	6.13	320.36	0.00	0.00	0.00	100.00
62.636	0.010	6.13	4.17	0.00	0.00	0.00	100.00
62.646	0.790	7.27	321.88	0.00	0.00	0.00	100.00
63.436	0.790	7.27	323.25	0.00	0.00	0.00	100.00
64.225	0.057	7.27	23.38	0.00	0.00	0.00	100.00
64.282	0.790	8.34	324.61	0.00	0.00	0.00	100.00
65.072	0.790	8.34	325.74	0.00	0.00	0.00	100.00
65.861	0.117	8.34	48.35	0.00	0.00	0.00	100.00
65.978	0.790	9.28	326.93	0.00	0.00	0.00	100.00
66.768	0.790	9.28	327.85	0.00	0.00	0.00	100.00
67.557	0.258	9.28	107.44	0.00	0.00	0.00	100.00
67.816	0.790	10.54	328.92	0.00	0.00	0.00	100.00
68.605	0.790	10.54	329.55	0.00	0.00	0.00	100.00
69.395	0.095	10.54	39.85	0.00	0.00	0.00	100.00
69.490	0.790	11.97	330.10	0.00	0.00	0.00	100.00
70.280	0.790	11.97	330.40	0.00	0.00	0.00	100.00
71.069	0.036	11.97	14.93	0.00	0.00	0.00	100.00
71.105	0.790	13.48	330.54	0.00	0.00	0.00	100.00
71.894	0.771	13.48	322.63	0.00	0.00	0.00	100.00
72.665	0.790	14.97	330.27	0.00	0.00	0.00	100.00
73.455	0.790	14.97	329.87	0.00	0.00	0.00	100.00
74.244	0.037	14.97	15.36	0.00	0.00	0.00	100.00
74.281	0.790	16.42	329.28	0.00	0.00	0.00	100.00
75.070	0.765	16.42	318.32	0.00	0.00	0.00	100.00
75.835	0.790	17.87	327.63	0.00	0.00	0.00	100.00
76.625	0.790	17.87	326.53	0.00	0.00	0.00	100.00

77.414	0.020	17.87	8.19	0.00	0.00	0.00	100.00
77.434	0.790	19.20	325.24	0.00	0.00	0.00	100.00
78.224	0.790	19.20	323.82	0.00	0.00	0.00	100.00
79.013	0.062	19.20	25.54	0.00	0.00	0.00	100.00
79.076	0.790	20.37	322.13	0.00	0.00	0.00	100.00
79.865	0.635	20.37	257.78	0.00	0.00	0.00	100.00
80.500	0.346	20.37	139.87	0.00	0.00	0.00	100.00
80.846	0.790	20.64	318.03	0.00	0.00	0.00	100.00
81.635	0.790	20.64	316.02	0.00	0.00	0.00	100.00
82.425	0.132	20.64	52.64	0.00	0.00	0.00	100.00
82.557	0.790	20.91	313.63	0.00	0.00	0.00	100.00
83.346	0.790	20.91	311.54	0.00	0.00	0.00	100.00
84.136	0.093	20.91	36.55	0.00	0.00	0.00	100.00
84.229	0.771	21.19	302.05	0.00	0.00	0.00	100.00
85.000	0.790	21.19	307.19	0.00	0.00	0.00	100.00
85.790	0.093	21.19	35.90	0.00	0.00	0.00	100.00
85.882	0.790	21.48	305.02	0.00	0.00	0.00	100.00
86.672	0.790	21.48	303.04	0.00	0.00	0.00	100.00
87.461	0.065	21.48	24.73	0.00	0.00	0.00	100.00
87.526	0.790	21.76	300.86	0.00	0.00	0.00	100.00
88.315	0.790	21.76	298.80	0.00	0.00	0.00	100.00
89.105	0.075	21.76	28.24	0.00	0.00	0.00	100.00
89.180	0.790	22.04	296.51	0.00	0.00	0.00	100.00
89.969	0.790	22.04	294.39	0.00	0.00	0.00	100.00
90.759	0.094	22.04	34.88	0.00	0.00	0.00	100.00
90.853	0.790	22.31	291.97	0.00	0.00	0.00	100.00
91.642	0.358	22.31	131.60	0.00	0.00	0.00	100.00
92.000	0.567	22.31	207.51	0.00	0.00	0.00	100.00
92.567	0.790	22.57	286.75	0.00	0.00	0.00	100.00
93.356	0.790	22.57	284.14	0.00	0.00	0.00	100.00
94.146	0.198	22.57	71.02	0.00	0.00	0.00	100.00
94.344	0.790	23.95	280.69	0.00	0.00	0.00	100.00
95.134	0.790	23.95	277.72	0.00	0.00	0.00	100.00
95.924	0.057	23.95	19.90	0.00	0.00	0.00	100.00
95.980	0.020	25.47	6.85	0.00	0.00	0.00	100.00
96.000	0.790	25.47	274.31	0.00	0.00	0.00	100.00
96.790	0.785	25.47	269.65	0.00	0.00	0.00	100.00
97.575	0.790	27.05	267.61	0.00	0.00	0.00	100.00
98.364	0.636	27.05	212.76	0.00	0.00	0.00	100.00
99.000	0.123	27.05	40.74	0.00	0.00	0.00	100.00
99.123	0.790	28.58	259.96	0.00	0.00	0.00	100.00
99.912	0.790	28.58	255.53	0.00	0.00	0.00	100.00
100.702	0.036	28.58	11.43	0.00	0.00	0.00	100.00
100.737	0.790	30.08	250.68	0.00	0.00	0.00	100.00
101.527	0.770	30.08	239.90	0.00	0.00	0.00	100.00
102.297	0.790	31.53	240.84	0.00	0.00	0.00	100.00
103.087	0.790	31.53	235.54	0.00	0.00	0.00	100.00
103.876	0.034	31.53	10.11	0.00	0.00	0.00	100.00
103.910	0.790	32.85	229.80	0.00	0.00	0.00	100.00
104.700	0.790	32.85	224.09	0.00	0.00	0.00	100.00
105.489	0.011	32.85	2.96	0.00	0.00	0.00	100.00
105.500	0.085	32.85	23.73	0.00	0.00	0.00	100.00
105.585	0.790	33.97	217.27	0.00	0.00	0.00	100.00
106.374	0.790	33.97	210.81	0.00	0.00	0.00	100.00
107.164	0.251	33.97	65.64	0.00	0.00	0.00	100.00
107.415	0.790	34.93	202.14	0.00	0.00	0.00	100.00
108.204	0.790	34.93	195.37	0.00	0.00	0.00	100.00
108.994	0.117	34.93	28.32	0.00	0.00	0.00	100.00
109.111	0.790	35.97	187.43	0.00	0.00	0.00	100.00
109.900	0.790	35.97	180.31	0.00	0.00	0.00	100.00
110.690	0.061	35.97	13.66	0.00	0.00	0.00	100.00
110.751	0.790	37.04	172.46	0.00	0.00	0.00	100.00
111.540	0.460	37.04	96.97	0.00	0.00	0.00	100.00
112.000	0.347	37.04	71.47	0.00	0.00	0.00	100.00
112.347	0.790	38.09	157.03	0.00	0.00	0.00	100.00
113.136	0.790	38.09	149.07	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 (--)		
20.557	0.000	210.138	-0.481	0.0000000000E+000	0.0000000000E+000	3.4245554848E+001	0.060	3.128	3.538		
20.890	0.072	209.974	-0.481	1.6131589247E+001	7.1686510645E-003	6.2711643438E+001	0.060	3.128	3.538		
21.680	0.258	209.598	-0.476	9.2305608141E+001	3.4479552738E-001	1.1769616648E+002	0.060	1.596	1.803		
22.469	0.444	209.222	-0.487	2.0197793118E+002	2.0725832792E+000	1.4108308837E+002	0.060	1.170	1.320		
23.000	0.554	208.955	-0.486	2.7766390876E+002	4.8849805812E+000	1.4376026956E+002	0.060	1.085	1.221		
23.790	0.741	208.580	-0.433	3.9259284585E+002	1.0696096881E+001	1.3930699953E+002	0.065	1.041	1.168		
24.579	0.994	208.271	-0.386	4.9763450800E+002	1.7289565607E+001	1.3221310296E+002	0.085	1.037	1.157		
24.750	1.054	208.209	-0.410	5.2020753538E+002	1.8885980307E+001	1.3802363527E+002	0.090	1.039	1.158		
25.540	1.284	207.878	-0.410	6.5102186629E+002	2.9305155424E+001	1.6546815535E+002	0.115	1.061	1.171		
26.000	1.431	207.697	-0.390	7.2715776578E+002	3.5952092270E+001	1.6396265115E+002	0.129	1.079	1.183		
26.644	1.639	207.447	-0.379	8.3146088744E+002	4.4973166759E+001	1.6188264021E+002	0.145	1.097	1.190		
27.433	1.884	207.154	-0.383	9.5911941782E+002	5.6678524031E+001	1.7658448066E+002	0.163	1.132	1.211		
28.000	2.044	206.927	-0.385	1.0652650635E+003	6.7342718630E+001	1.8721978490E+002	0.180	1.173	1.236		
28.790	2.287	206.631	-0.372	1.2130167659E+003	8.3176697713E+001	1.9171155326E+002	0.202	1.245	1.279		
29.330	2.456	206.432	-0.364	1.3183243361E+003	9.5056521534E+001	1.9236079835E+002	0.217	1.308	1.313		
29.516	2.519	206.367	-0.349	1.3540278276E+003	9.9245803886E+001	1.9273562652E+002	0.222	1.332	1.325		
30.306	2.732	206.092	-0.336	1.5103083063E+003	1.1803105328E+002	2.0050593917E+002	0.245	1.456	1.382		
31.000	2.939	205.869	-0.309	1.6510317332E+003	1.3614745997E+002	1.9665096058E+002	0.266	1.605	1.442		
31.431	3.080	205.744	-0.273	1.7342050249E+003	1.4713524745E+002	1.9215057706E+002	0.278	1.715	1.480		
32.221	3.299	205.536	-0.240	1.8848912993E+003	1.6783751170E+002	1.8111226379E+002	0.301	1.970	1.559		
33.010	3.554	205.365	-0.216	2.0201875909E+003	1.8702537566E+002	1.5204850330E+002	0.319	2.298	1.641		
33.016	3.556	205.364	-0.174	2.0210381939E+003	1.8714864361E+002	1.5195764303E+002	0.319	2.300	1.642		
33.805	3.768	205.227	-0.170	2.1461478587E+003	2.0568668536E+002	1.6047657433E+002	0.337	2.735	1.729		
34.000	3.824	205.196	-0.146	2.1774695365E+003	2.1046837956E+002	1.5956233075E+002	0.342	2.873	1.753		
34.579	3.998	205.114	-0.133	2.2674965095E+003	2.2437369036E+002	1.4936119187E+002	0.351	3.354	1.828		
35.000	4.101	205.063	-0.096	2.3284766143E+003	2.3399302425E+002	1.3855319101E+002	0.357	3.770	1.883		
35.790	4.324	204.997	-0.081	2.4283018877E+003	2.5036402530E+002	1.2284224002E+002	0.362	4.678	1.984		
35.983	4.381	204.983	-0.069	2.4519063968E+003	2.5434692220E+002	1.1544876036E+002	0.363	4.940	2.009		
36.000	4.385	204.982	-0.057	2.4538525193E+003	2.5467895282E+002	1.1492961959E+002	0.363	4.962	2.012		
36.790	4.567	204.937	-0.055	2.5464623681E+003	2.7076319592E+002	1.1378951582E+002	0.371	6.207	2.121		
37.000	4.618	204.927	-0.039	2.5702161330E+003	2.7499315668E+002	1.1208810539E+002	0.373	6.584	2.151		
37.513	4.747	204.909	-0.033	2.6267457658E+003	2.8544010137E+002	1.1344204053E+002	0.379	7.542	2.226		
38.120	4.863	204.890	-0.026	2.6979339869E+003	2.9904311622E+002	1.1644455208E+002	0.389	8.760	2.328		
38.910	5.021	204.873	-0.020	2.7890384553E+003	3.1713145084E+002	1.1317865489E+002	0.404	10.060	2.471		
39.100	5.062	204.870	-0.012	2.8104952743E+003	3.2155370452E+002	1.2006900051E+002	0.407	10.240	2.506		
39.159	5.074	204.870	-0.004	2.8177736221E+003	3.2308065591E+002	1.2182402979E+002	0.409	10.264	2.518		
39.949	5.208	204.867	0.002	2.9080552459E+003	3.4253678774E+002	1.1726926957E+002	0.424	9.958	2.674		
40.739	5.351	204.873	0.009	3.0029458790E+003	3.6386496196E+002	1.2005153209E+002	0.441	8.860	2.848		
41.174	5.432	204.878	0.016	3.0552078790E+003	3.7584669148E+002	1.1665048823E+002	0.451	8.181	2.951		
41.964	5.568	204.892	0.022	3.1425465169E+003	3.9627699499E+002	1.0789733110E+002	0.466	7.035	3.126		
42.753	5.710	204.912	0.026	3.2255815189E+003	4.1609671510E+002	9.7966903194E+001	0.480	6.068	3.295		
42.952	5.746	204.918	0.032	3.2447117975E+003	4.2070107763E+002	9.5723686491E+001	0.483	5.863	3.334		
43.742	5.876	204.944	0.035	3.3189477978E+003	4.3863672238E+002	9.2038892802E+001	0.495	5.205	3.481		
44.531	6.009	204.973	0.037	3.3900444115E+003	4.5588702589E+002	8.2349204333E+001	0.506	4.715	3.621		
44.617	6.023	204.977	0.038	3.3970714100E+003	4.5759034766E+002	8.0508194745E+001	0.507	4.672	3.635		
45.407	6.138	205.007	0.039	3.4534035033E+003	4.7130341542E+002	7.8789630838E+001	0.514	4.384	3.729		
45.500	6.152	205.011	0.052	3.4608231205E+003	4.7313692725E+002	7.9358070321E+001	0.515	4.353	3.739		
46.207	6.265	205.048	0.055	3.5152704750E+003	4.8673487169E+002	7.5204888591E+001	0.523	4.122	3.812		

46.997	6.374	205.093	0.061	3.5730534720E+003	5.0139685771E+002	7.2754581844E+001	0.532	3.917	3.874
47.786	6.490	205.145	0.065	3.6301524911E+003	5.1621332036E+002	6.6698410986E+001	0.540	3.742	3.917
47.825	6.495	205.147	0.072	3.6327717872E+003	5.1690124410E+002	6.6530245092E+001	0.541	3.734	3.919
48.615	6.597	205.205	0.078	3.6870800087E+003	5.3142939964E+002	6.7207179731E+001	0.550	3.593	3.938
49.393	6.706	205.269	0.087	3.7381528288E+003	5.4556961946E+002	6.4630700581E+001	0.558	3.478	3.930
50.182	6.803	205.341	0.092	3.7883624416E+003	5.5980949292E+002	5.9681457427E+001	0.566	3.379	3.902
50.972	6.903	205.415	0.094	3.8323919266E+003	5.7274273916E+002	5.1460552111E+001	0.574	3.303	3.851
51.012	6.908	205.419	0.092	3.8344328524E+003	5.7335282109E+002	5.0793332665E+001	0.574	3.299	3.848
51.500	6.957	205.464	0.095	3.8565374861E+003	5.8005880266E+002	4.4815304312E+001	0.577	3.266	3.807
52.290	7.042	205.541	0.107	3.8913290601E+003	5.9080381728E+002	4.7511257625E+001	0.582	3.214	3.731
52.689	7.095	205.591	0.123	3.9110010096E+003	5.9704051855E+002	4.7646607270E+001	0.585	3.183	3.677
53.478	7.183	205.688	0.118	3.9461106825E+003	6.0834794518E+002	4.0269103480E+001	0.591	3.128	3.571
54.268	7.264	205.777	0.112	3.9745873251E+003	6.1773135887E+002	3.2743471035E+001	0.595	3.081	3.472
54.519	7.289	205.804	0.112	3.9825549106E+003	6.2039241590E+002	3.1556661869E+001	0.596	3.066	3.442
55.309	7.356	205.894	0.119	4.0071526747E+003	6.2874456904E+002	3.0442416190E+001	0.599	3.019	3.345
56.000	7.424	205.981	0.125	4.0277590080E+003	6.3600614870E+002	2.7915301804E+001	0.602	2.974	3.255
56.211	7.444	206.007	0.124	4.0335254427E+003	6.3807758547E+002	2.6720719839E+001	0.603	2.960	3.228
57.000	7.505	206.105	0.126	4.0528086940E+003	6.4528126133E+002	2.1887768452E+001	0.607	2.907	3.131
57.790	7.570	206.206	0.129	4.0680869906E+003	6.5155965924E+002	1.8419198776E+001	0.610	2.853	3.035
57.845	7.574	206.213	0.127	4.0690951268E+003	6.5198238971E+002	1.6995056182E+001	0.610	2.849	3.029
57.900	7.577	206.220	0.131	4.0699561332E+003	6.5236542231E+002	1.5530913044E+001	0.610	2.846	3.023
58.690	7.628	206.324	0.143	4.0810744061E+003	6.5765399036E+002	1.3016550774E+001	0.611	2.792	2.933
59.433	7.694	206.440	0.158	4.0900048394E+003	6.6272659331E+002	1.0562916490E+001	0.612	2.732	2.839
60.222	7.752	206.567	0.166	4.0971285573E+003	6.6765569149E+002	6.8724199160E+000	0.613	2.671	2.744
61.012	7.818	206.702	0.171	4.1008566295E+003	6.7195907701E+002	2.7986350482E+000	0.613	2.609	2.652
61.057	7.822	206.709	0.174	4.1009779200E+003	6.7217407845E+002	2.5898349405E+000	0.613	2.605	2.647
61.847	7.875	206.847	0.178	4.1016559362E+003	6.7581344237E+002	-1.2403246404E+000	0.613	2.544	2.561
62.636	7.933	206.989	0.180	4.0990194042E+003	6.7868932771E+002	-5.3682248983E+000	0.613	2.485	2.479
62.646	7.933	206.991	0.190	4.0989640833E+003	6.7872058361E+002	-5.4153264454E+000	0.612	2.484	2.478
63.436	7.982	207.141	0.180	4.0934273285E+003	6.8103519388E+002	-9.0175885200E+000	0.612	2.425	2.400
64.225	8.017	207.276	0.172	4.0847249973E+003	6.8211082226E+002	-1.3490066076E+001	0.610	2.374	2.337
64.282	8.020	207.287	0.182	4.0839463544E+003	6.8215888741E+002	-1.3779355931E+001	0.610	2.370	2.332
65.072	8.048	207.430	0.189	4.0718502339E+003	6.8249611724E+002	-1.7351852683E+001	0.608	2.318	2.270
65.861	8.087	207.585	0.197	4.0565471753E+003	6.8217811495E+002	-2.1948237523E+001	0.606	2.264	2.209
65.978	8.093	207.609	0.210	4.0539356125E+003	6.8205037637E+002	-2.2627372306E+001	0.606	2.256	2.200
66.768	8.130	207.775	0.207	4.0344769834E+003	6.8084051168E+002	-2.5735871896E+001	0.603	2.200	2.141
67.557	8.162	207.935	0.202	4.0132977754E+003	6.7895506789E+002	-2.7411398063E+001	0.599	2.149	2.088
67.816	8.170	207.986	0.202	4.0061689159E+003	6.7824095073E+002	-2.8404365549E+001	0.598	2.132	2.072
68.605	8.185	208.147	0.212	3.9818091433E+003	6.7545496287E+002	-3.4217407546E+001	0.595	2.082	2.026
69.395	8.212	208.322	0.220	3.9521384388E+003	6.7143351329E+002	-3.7684558182E+001	0.590	2.030	1.980
69.490	8.214	208.342	0.218	3.9485429763E+003	6.7092966291E+002	-3.8064214086E+001	0.589	2.024	1.975
70.280	8.220	208.515	0.219	3.9160912991E+003	6.6605534914E+002	-4.2600556890E+001	0.585	1.974	1.934
71.069	8.226	208.688	0.220	3.8812752147E+003	6.6044456759E+002	-4.9638121807E+001	0.579	1.926	1.896
71.105	8.226	208.696	0.224	3.8794956863E+003	6.6014594136E+002	-4.9833750267E+001	0.579	1.924	1.895
71.894	8.213	208.872	0.238	3.8411065339E+003	6.5354190594E+002	-5.4013091631E+001	0.573	1.878	1.860
72.665	8.223	209.067	0.256	3.7954220440E+003	6.4522530187E+002	-6.1411439851E+001	0.566	1.831	1.825
73.455	8.217	209.272	0.258	3.7452082533E+003	6.3585359937E+002	-6.7417718166E+001	0.558	1.785	1.792
74.244	8.208	209.473	0.255	3.6889671213E+003	6.2505369485E+002	-6.6185093677E+001	0.550	1.742	1.761
74.281	8.207	209.483	0.270	3.6865406843E+003	6.2458350346E+002	-6.6433030160E+001	0.549	1.741	1.760
75.070	8.188	209.697	0.271	3.6259032330E+003	6.1278809934E+002	-7.8366276884E+001	0.540	1.700	1.732
75.835	8.170	209.904	0.280	3.5647976652E+003	6.0079016291E+002	-8.0544316301E+001	0.531	1.666	1.708
76.625	8.143	210.131	0.288	3.5006658095E+003	5.8820401965E+002	-7.9962050170E+001	0.521	1.635	1.686
77.414	8.116	210.359	0.288	3.4385348058E+003	5.7600646568E+002	-8.2969332875E+001	0.512	1.612	1.669
77.434	8.115	210.364	0.280	3.4368873412E+003	5.7568356475E+002	-8.3032936848E+001	0.512	1.611	1.669
78.224	8.061	210.585	0.278	3.3727068542E+003	5.6313171985E+002	-8.3479703174E+001	0.503	1.591	1.654
79.013	8.005	210.804	0.276	3.3050699854E+003	5.4987669001E+002	-8.5678390586E+001	0.493	1.574	1.641
79.076	8.000	210.821	0.288	3.2997217993E+003	5.4882781158E+002	-8.6060092534E+001	0.493	1.572	1.640
79.865	7.935	211.049	0.281	3.2279718897E+003	5.3473969187E+002	-8.7949125087E+001	0.482	1.558	1.629
80.500	7.871	211.221	0.276	3.1736330359E+003	5.2404891210E+002	-8.9178884590E+001	0.475	1.550	1.621
80.846	7.841	211.320	0.287	3.1421313214E+003	5.1782284055E+002	-9.1257257748E+001	0.470	1.546	1.616
81.635	7.771	211.546	0.296	3.0698543246E+003	5.0348898311E+002	-9.4330588430E+001	0.460	1.538	1.607
82.425	7.715	211.787	0.305	2.9931800402E+003	4.8821537135E+002	-9.6268526578E+001	0.449	1.530	1.597
82.557	7.705	211.827	0.303	2.9804899823E+003	4.8568264278E+002	-9.6110287137E+001	0.447	1.529	1.595
83.346	7.642	212.066	0.305	2.9046878010E+003	4.7053687214E+002	-9.6220572868E+001	0.436	1.523	1.585
84.136	7.582	212.308	0.306	2.8285543499E+003	4.5535514440E+002	-9.4967168105E+001	0.425	1.518	1.575
84.229	7.575	212.336	0.300	2.8197403591E+003	4.5360209324E+002	-9.4651275153E+001	0.424	1.517	1.574

85.000	7.507	212.568	0.302	2.7476579760E+003	4.3932267580E+002	-9.3739409907E+001	0.413	1.512	1.564
85.790	7.441	212.808	0.304	2.6734235210E+003	4.2472421122E+002	-9.2890116248E+001	0.402	1.507	1.554
85.882	7.433	212.836	0.304	2.6648359962E+003	4.2304234868E+002	-9.2769063833E+001	0.401	1.506	1.553
86.672	7.363	213.076	0.307	2.5915121481E+003	4.0877557712E+002	-9.3275367687E+001	0.390	1.501	1.542
87.461	7.297	213.321	0.309	2.5175509452E+003	3.9449132633E+002	-8.9953921881E+001	0.379	1.495	1.531
87.526	7.291	213.340	0.304	2.5117552937E+003	3.9337702610E+002	-8.9767036027E+001	0.378	1.494	1.530
88.315	7.216	213.580	0.303	2.4397435896E+003	3.7958755439E+002	-9.0486809133E+001	0.367	1.488	1.520
89.105	7.139	213.818	0.302	2.3688734737E+003	3.6609637722E+002	-8.9996344697E+001	0.356	1.482	1.509
89.180	7.131	213.841	0.308	2.3621317090E+003	3.6481465030E+002	-9.0127423453E+001	0.355	1.482	1.508
89.969	7.055	214.085	0.313	2.2900671326E+003	3.5112491355E+002	-9.2338801325E+001	0.344	1.475	1.498
90.759	6.986	214.335	0.320	2.2163255289E+003	3.3715902598E+002	-9.8916997906E+001	0.333	1.467	1.487
90.853	6.980	214.367	0.338	2.2069720925E+003	3.3539011975E+002	-9.9528842327E+001	0.332	1.465	1.486
91.642	6.923	214.634	0.328	2.1286873329E+003	3.2059791086E+002	-9.2730034105E+001	0.319	1.455	1.475
92.000	6.886	214.744	0.316	2.0965500891E+003	3.1454340825E+002	-9.1517368029E+001	0.315	1.450	1.470
92.567	6.836	214.926	0.318	2.0431357608E+003	3.0452649248E+002	-9.3339197316E+001	0.306	1.442	1.464
93.356	6.757	215.175	0.322	1.9704000624E+003	2.9097373849E+002	-9.3877396472E+001	0.295	1.429	1.455
94.146	6.688	215.435	0.325	1.8949000855E+003	2.7710854503E+002	-9.2242163252E+001	0.284	1.415	1.446
94.344	6.667	215.497	0.316	1.8767619993E+003	2.7379839309E+002	-9.1509837101E+001	0.281	1.411	1.445
95.134	6.566	215.747	0.324	1.8041402716E+003	2.6070287655E+002	-9.4223968459E+001	0.271	1.395	1.438
95.924	6.478	216.009	0.332	1.7279790747E+003	2.4713883998E+002	-9.3298670062E+001	0.259	1.378	1.431
95.980	6.471	216.027	0.328	1.7226841118E+003	2.4620090413E+002	-9.8711913141E+001	0.259	1.377	1.431
96.000	6.469	216.034	0.329	1.7207112738E+003	2.4585239881E+002	-1.0051981860E+002	0.258	1.377	1.431
96.790	6.352	216.294	0.332	1.6456627009E+003	2.3269393506E+002	-9.5723876172E+001	0.247	1.360	1.426
97.575	6.241	216.557	0.330	1.5699622484E+003	2.1952316844E+002	-9.4633441614E+001	0.236	1.344	1.421
98.364	6.094	216.813	0.347	1.4966400534E+003	2.0687981430E+002	-1.0022726529E+002	0.226	1.329	1.417
99.000	6.007	217.051	0.369	1.4291715809E+003	1.9529687673E+002	-9.8604377276E+001	0.215	1.316	1.413
99.123	5.987	217.093	0.379	1.4172678566E+003	1.9325348649E+002	-9.8650707174E+001	0.214	1.314	1.413
99.912	5.861	217.397	0.416	1.3317451451E+003	1.7861154606E+002	-1.1590521432E+002	0.201	1.299	1.409
100.702	5.784	217.750	0.446	1.2342494904E+003	1.6219965417E+002	-1.1388121237E+002	0.186	1.285	1.407
100.737	5.779	217.764	0.456	1.2302069448E+003	1.6152276466E+002	-1.1395097792E+002	0.185	1.284	1.407
101.527	5.683	218.126	0.435	1.1314358012E+003	1.4511871907E+002	-1.1759911869E+002	0.169	1.272	1.405
102.297	5.554	218.443	0.406	1.0464828921E+003	1.3132580992E+002	-1.0841506898E+002	0.156	1.265	1.406
103.087	5.386	218.760	0.401	9.6239401759E+002	1.1790482546E+002	-1.0588411995E+002	0.143	1.260	1.409
103.876	5.219	219.077	0.403	8.7928818264E+002	1.0486086859E+002	-1.1101594740E+002	0.131	1.257	1.414
103.910	5.212	219.091	0.400	8.7547350700E+002	1.0426650474E+002	-1.1092357876E+002	0.130	1.257	1.414
104.700	5.017	219.406	0.382	7.9411999100E+002	9.1763575204E+001	-9.8070288990E+001	0.117	1.258	1.423
105.489	4.795	219.694	0.365	7.2061710848E+002	8.0694536939E+001	-9.0410809141E+001	0.106	1.263	1.434
105.500	4.792	219.698	0.356	7.1966163869E+002	8.0552018827E+001	-9.0367163185E+001	0.106	1.263	1.434
105.585	4.768	219.728	0.371	7.1200018764E+002	7.9408030338E+001	-9.0696870980E+001	0.104	1.264	1.436
106.374	4.530	220.022	0.372	6.3751960014E+002	6.8317247561E+001	-9.3341993130E+001	0.093	1.274	1.452
107.164	4.292	220.316	0.368	5.6460993280E+002	5.7739279340E+001	-8.8146561877E+001	0.081	1.289	1.475
107.415	4.212	220.405	0.368	5.4282878144E+002	5.4612876652E+001	-8.7554753963E+001	0.077	1.294	1.483
108.204	3.955	220.699	0.390	4.7185664133E+002	4.4619464697E+001	-9.4630104794E+001	0.065	1.311	1.508
108.994	3.725	221.021	0.404	3.9340455346E+002	3.3381984902E+001	-9.1773642900E+001	0.060	1.335	1.541
109.111	3.688	221.065	0.417	3.8281803049E+002	3.1865937393E+001	-9.2072279194E+001	0.060	1.339	1.547
109.900	3.449	221.399	0.390	3.0253618542E+002	2.0511858381E+001	-9.2026143797E+001	0.060	1.369	1.587
110.690	3.158	221.681	0.349	2.3750554752E+002	1.1908934404E+001	-5.9169670486E+001	0.060	1.405	1.633
110.751	3.129	221.697	0.355	2.3399810484E+002	1.1492955652E+001	-5.8817131759E+001	0.060	1.407	1.636
111.540	2.819	221.983	0.353	1.7284040092E+002	4.9328059726E+000	-6.7913131543E+001	0.060	1.452	1.693
112.000	2.627	222.138	0.402	1.4417548796E+002	2.8866399426E+000	-7.3607662179E+001	0.060	1.485	1.735
112.347	2.535	222.307	0.583	1.1569833736E+002	1.3278797561E+000	-8.1945711396E+001	0.060	1.503	1.760
113.136	2.409	222.800	0.583	5.1277001437E+001	1.7072711341E-001	-7.3271556674E+001	0.060	1.614	1.893

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)
20.557	0.333	0.408	-35.427	-1.318	-0.538	100.018	40.844
20.890	0.790	0.969	-35.427	-5.990	-5.804	100.364	97.244
21.680	0.790	0.969	-35.427	-12.696	-12.302	101.865	98.698
22.469	0.531	0.652	-35.427	-18.304	-11.927	104.513	68.102
23.000	0.790	0.969	-35.427	-23.765	-23.026	106.272	102.968
23.790	0.790	0.969	-35.427	-30.176	-29.238	107.116	103.786
24.579	0.171	0.210	-35.427	-34.076	-7.150	107.957	22.651
24.750	0.790	0.969	-35.427	-38.318	-37.127	111.245	107.787
25.540	0.460	0.565	-35.427	-43.935	-24.828	112.300	63.462
26.000	0.644	0.790	-35.427	-48.568	-38.366	111.942	88.429
26.644	0.790	0.956	-34.304	-53.273	-50.917	112.452	107.478
27.433	0.567	0.686	-34.304	-58.407	-40.075	115.802	79.456
28.000	0.790	0.956	-34.304	-63.667	-60.851	116.844	111.676
28.790	0.540	0.654	-34.304	-68.913	-45.089	118.460	77.508
29.330	0.186	0.226	-34.304	-71.762	-16.196	118.872	26.829
29.516	0.790	0.928	-31.749	-71.963	-66.814	119.206	110.677
30.306	0.694	0.816	-31.749	-77.013	-62.856	121.070	98.815
31.000	0.431	0.507	-31.749	-80.713	-40.935	120.566	61.147
31.431	0.790	0.897	-28.372	-78.021	-70.008	119.778	107.477
32.221	0.790	0.897	-28.372	-82.063	-73.635	118.331	106.179
33.010	0.006	0.006	-28.372	-84.098	-0.535	116.605	0.742
33.016	0.790	0.863	-23.863	-74.781	-64.560	115.671	99.861
33.805	0.195	0.213	-23.863	-76.643	-16.307	116.402	24.766
34.000	0.579	0.634	-23.863	-78.522	-49.754	116.016	73.511
34.579	0.421	0.448	-20.096	-69.392	-31.074	113.315	50.742
35.000	0.790	0.841	-20.096	-72.149	-60.655	112.070	94.217
35.790	0.194	0.206	-20.096	-74.530	-15.360	111.979	23.078
35.983	0.017	0.018	-16.071	-60.092	-1.059	109.405	1.929
36.000	0.790	0.822	-16.071	-61.357	-50.413	109.776	90.195
36.790	0.210	0.219	-16.071	-62.922	-13.783	109.644	24.017
37.000	0.513	0.534	-16.071	-63.897	-34.103	109.775	58.590
37.513	0.607	0.622	-12.537	-49.823	-30.988	108.565	67.523
38.120	0.790	0.809	-12.537	-50.902	-41.170	108.758	87.964
38.910	0.190	0.195	-12.537	-51.607	-10.070	108.875	21.245
39.100	0.059	0.061	-12.537	-51.791	-3.155	109.815	6.690
39.159	0.790	0.801	-9.834	-39.416	-31.584	107.482	86.124
39.949	0.790	0.801	-9.834	-40.255	-32.256	108.202	86.701
40.739	0.436	0.442	-9.834	-40.906	-18.085	108.351	47.902
41.174	0.790	0.799	-8.770	-36.029	-28.782	107.034	85.505
41.964	0.790	0.799	-8.770	-36.721	-29.335	106.824	85.337
42.753	0.199	0.201	-8.770	-37.154	-7.480	106.291	21.398
42.952	0.790	0.796	-7.489	-30.573	-24.345	105.296	83.848
43.742	0.790	0.796	-7.489	-31.101	-24.766	105.093	83.687
44.531	0.086	0.087	-7.489	-31.395	-2.730	104.606	9.096
44.617	0.790	0.794	-6.091	-23.683	-18.804	103.306	82.025
45.407	0.093	0.094	-6.091	-23.888	-2.237	103.747	9.717
45.500	0.707	0.711	-6.091	-24.066	-17.111	103.661	73.705
46.207	0.790	0.792	-4.643	-15.789	-12.507	102.703	81.353
46.997	0.790	0.792	-4.643	-15.997	-12.671	102.732	81.375
47.786	0.039	0.040	-4.643	-16.106	-0.637	102.539	4.057
47.825	0.790	0.791	-3.244	-7.626	-6.031	101.875	80.561
48.615	0.778	0.779	-3.244	-7.714	-6.011	101.852	79.363
49.393	0.790	0.790	-1.843	1.020	0.806	101.046	79.819
50.182	0.790	0.790	-1.843	1.031	0.814	100.950	79.743
50.972	0.040	0.040	-1.843	1.036	0.041	100.888	4.020
51.012	0.488	0.488	-0.532	9.459	4.618	100.230	48.934
51.500	0.790	0.790	-0.532	9.533	7.527	100.228	79.135
52.290	0.399	0.399	-0.532	9.605	3.836	100.261	40.046
52.689	0.790	0.790	0.625	17.268	13.634	99.718	78.734
53.478	0.790	0.790	0.625	17.423	13.757	99.766	78.772

54.268	0.251	0.251	0.625	17.526	4.408	99.792	25.096
54.519	0.790	0.790	1.596	24.110	19.043	99.469	78.563
55.309	0.691	0.691	1.596	24.294	16.795	99.472	68.768
56.000	0.211	0.211	1.596	24.398	5.149	99.507	21.000
56.211	0.790	0.790	2.682	31.812	25.144	99.231	78.430
57.000	0.790	0.790	2.682	31.958	25.259	99.330	78.508
57.790	0.055	0.055	2.682	32.036	1.762	99.351	5.463
57.845	0.055	0.055	3.830	39.830	2.199	99.164	5.474
57.900	0.790	0.791	3.830	39.973	31.630	99.195	78.491
58.690	0.743	0.745	3.830	40.240	29.982	99.180	73.895
59.433	0.790	0.793	4.984	48.384	38.345	99.025	78.479
60.222	0.790	0.793	4.984	48.673	38.574	99.149	78.577
61.012	0.045	0.045	4.984	48.827	2.211	99.256	4.494
61.057	0.790	0.794	6.135	56.864	45.154	99.116	78.705
61.847	0.790	0.794	6.135	57.154	45.384	99.302	78.852
62.636	0.010	0.010	6.135	57.302	0.591	99.416	1.025
62.646	0.790	0.796	7.272	65.229	51.917	99.336	79.063
63.436	0.790	0.796	7.272	65.507	52.138	99.691	79.346
64.225	0.057	0.057	7.272	65.656	3.771	99.809	5.732
64.282	0.790	0.798	8.338	73.081	58.315	99.889	79.707
65.072	0.790	0.798	8.338	73.336	58.519	100.104	79.878
65.861	0.117	0.118	8.338	73.482	8.686	100.283	11.855
65.978	0.790	0.800	9.285	80.050	64.040	100.440	80.352
66.768	0.790	0.800	9.285	80.274	64.219	100.686	80.549
67.557	0.258	0.262	9.285	80.424	21.046	100.794	26.377
67.816	0.790	0.803	10.542	89.030	71.498	101.145	81.227
68.605	0.790	0.803	10.542	89.201	71.635	101.653	81.635
69.395	0.095	0.097	10.542	89.297	8.663	101.714	9.868
69.490	0.790	0.807	11.965	98.801	79.738	102.259	82.528
70.280	0.790	0.807	11.965	98.892	79.811	102.600	82.804
71.069	0.036	0.036	11.965	98.940	3.608	103.063	3.758
71.105	0.790	0.812	13.478	108.748	88.290	103.420	83.964
71.894	0.771	0.793	13.478	108.733	86.177	104.412	82.752
72.665	0.790	0.817	14.972	118.065	96.490	105.344	86.094
73.455	0.790	0.817	14.972	117.922	96.373	106.159	86.759
74.244	0.037	0.038	14.972	117.847	4.488	105.754	4.028
74.281	0.790	0.823	16.425	126.543	104.158	107.310	88.327
75.070	0.765	0.798	16.425	126.260	100.693	107.674	85.870
75.835	0.790	0.830	17.869	134.344	111.443	108.399	89.920
76.625	0.790	0.830	17.869	133.894	111.069	108.139	89.705
77.414	0.020	0.021	17.869	133.663	2.785	108.578	2.262
77.434	0.790	0.836	19.199	140.794	117.705	108.907	91.048
78.224	0.790	0.836	19.199	140.177	117.190	109.406	91.465
79.013	0.062	0.066	19.199	139.844	9.243	109.414	7.232
79.076	0.790	0.842	20.373	145.706	122.713	110.506	93.068
79.865	0.635	0.677	20.373	145.004	98.198	109.914	74.435
80.500	0.346	0.369	20.373	144.499	53.283	110.604	40.784
80.846	0.790	0.844	20.637	145.208	122.505	110.803	93.479
81.635	0.790	0.844	20.637	144.288	121.729	111.511	94.076
82.425	0.132	0.141	20.637	143.751	20.278	111.416	15.717
82.557	0.790	0.845	20.913	144.588	122.206	111.539	94.273
83.346	0.790	0.845	20.913	143.627	121.394	111.567	94.296
84.136	0.093	0.100	20.913	143.090	14.243	111.341	11.083
84.229	0.771	0.827	21.195	143.928	119.060	111.258	92.035
85.000	0.790	0.847	21.195	142.993	121.086	111.244	94.201
85.790	0.093	0.099	21.195	142.496	14.150	111.047	11.027
85.882	0.790	0.848	21.479	143.349	121.624	111.108	94.268
86.672	0.790	0.848	21.479	142.417	120.833	111.121	94.280
87.461	0.065	0.069	21.479	141.913	9.859	110.595	7.683
87.526	0.790	0.850	21.763	142.722	121.330	110.850	94.235
88.315	0.790	0.850	21.763	141.747	120.501	110.615	94.035
89.105	0.075	0.081	21.763	141.213	11.388	110.631	8.921
89.180	0.790	0.852	22.041	141.932	120.894	110.881	94.445
89.969	0.790	0.852	22.041	140.914	120.026	111.100	94.632
90.759	0.094	0.101	22.041	140.344	14.223	111.817	11.332
90.853	0.790	0.853	22.313	140.968	120.304	111.871	95.473

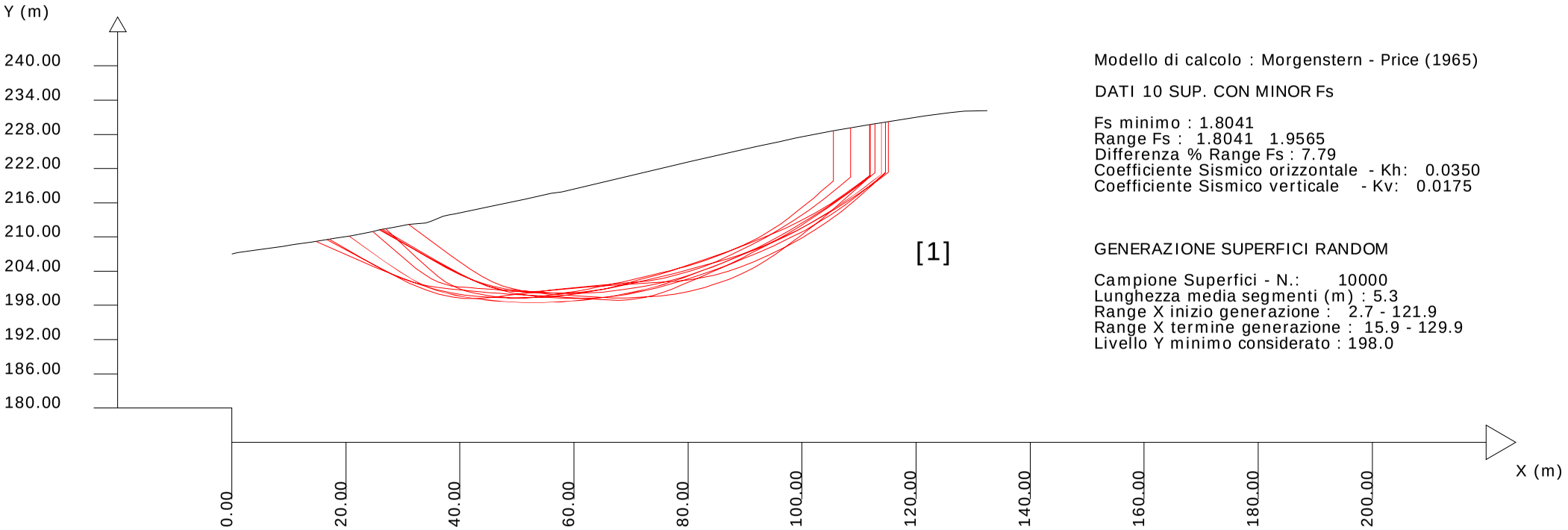
91.642	0.358	0.387	22.313	140.197	54.223	110.722	42.823
92.000	0.567	0.613	22.313	139.516	85.503	111.195	68.147
92.567	0.790	0.855	22.569	139.557	119.321	110.975	94.883
93.356	0.790	0.855	22.569	138.288	118.235	111.228	95.099
94.146	0.198	0.215	22.569	137.493	29.551	110.663	23.785
94.344	0.790	0.864	23.951	142.293	122.928	111.101	95.981
95.134	0.790	0.864	23.951	140.787	121.627	111.498	96.324
95.924	0.057	0.062	23.951	139.980	8.714	111.034	6.912
95.980	0.020	0.022	25.470	145.686	3.163	112.454	2.441
96.000	0.790	0.875	25.470	144.805	126.634	111.673	97.659
96.790	0.785	0.870	25.470	143.093	124.480	111.746	97.210
97.575	0.790	0.887	27.055	146.708	130.061	111.702	99.027
98.364	0.636	0.714	27.055	144.884	103.402	113.317	80.873
99.000	0.123	0.138	27.055	143.900	19.799	112.186	15.435
99.123	0.790	0.899	28.577	147.200	132.340	114.054	102.539
99.912	0.790	0.899	28.577	144.691	130.084	115.753	104.067
100.702	0.036	0.041	28.577	143.380	5.818	114.395	4.642
100.737	0.790	0.912	30.079	146.025	133.231	116.256	106.070
101.527	0.770	0.890	30.079	143.224	127.504	114.008	101.495
102.297	0.790	0.926	31.535	143.740	133.149	113.670	105.294
103.087	0.790	0.926	31.535	140.574	130.215	113.286	104.938
103.876	0.034	0.040	31.535	138.922	5.588	113.942	4.583
103.910	0.790	0.940	32.848	139.822	131.402	113.018	106.212
104.700	0.790	0.940	32.848	136.347	128.136	111.525	104.809
105.489	0.011	0.013	32.848	134.586	1.694	111.082	1.398
105.500	0.085	0.101	32.848	134.364	13.569	111.085	11.218
105.585	0.790	0.952	33.971	134.149	127.710	111.743	106.380
106.374	0.790	0.952	33.971	130.161	123.914	111.200	105.863
107.164	0.251	0.303	33.971	127.533	38.584	110.417	33.405
107.415	0.790	0.963	34.929	126.211	121.540	110.719	106.621
108.204	0.790	0.963	34.929	121.984	117.469	112.053	107.906
108.994	0.117	0.142	34.929	119.558	17.030	110.993	15.810
109.111	0.790	0.976	35.971	118.293	115.399	112.333	109.585
109.900	0.790	0.976	35.971	113.800	111.016	109.344	106.670
110.690	0.061	0.076	35.971	111.380	8.413	105.835	7.995
110.751	0.790	0.989	37.042	109.900	108.706	107.207	106.042
111.540	0.460	0.576	37.042	106.126	61.124	103.861	59.819
112.000	0.347	0.435	37.042	103.674	45.052	103.898	45.150
112.347	0.790	1.003	38.092	100.884	101.204	101.284	101.606
113.136	0.790	1.003	38.092	95.765	96.070	100.189	100.508

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

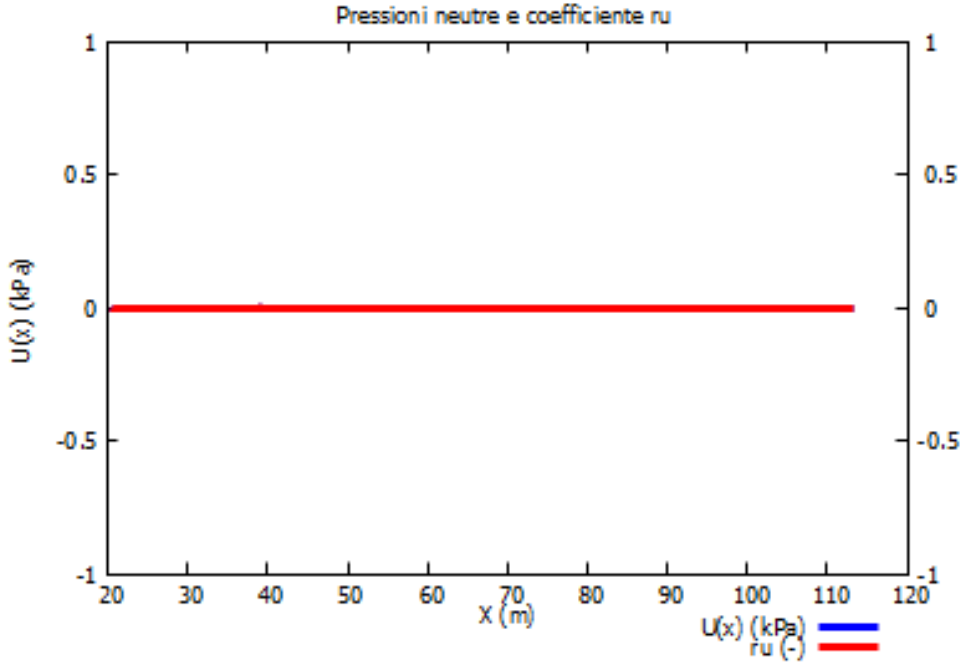
Fs minimo : 1.8041
Range Fs : 1.8041 1.9565
Differenza % Range Fs : 7.79
Coefficiente Sismico orizzontale - Kh: 0.0350
Coefficiente Sismico verticale - Kv: 0.0175

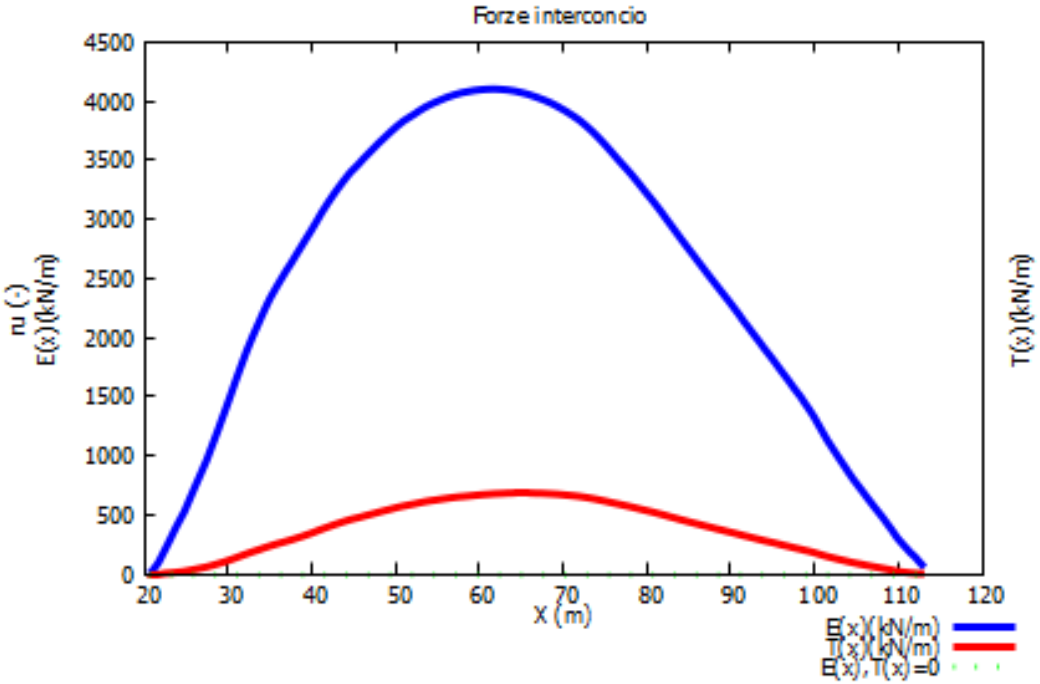
GENERAZIONE SUPERFICI RANDOM

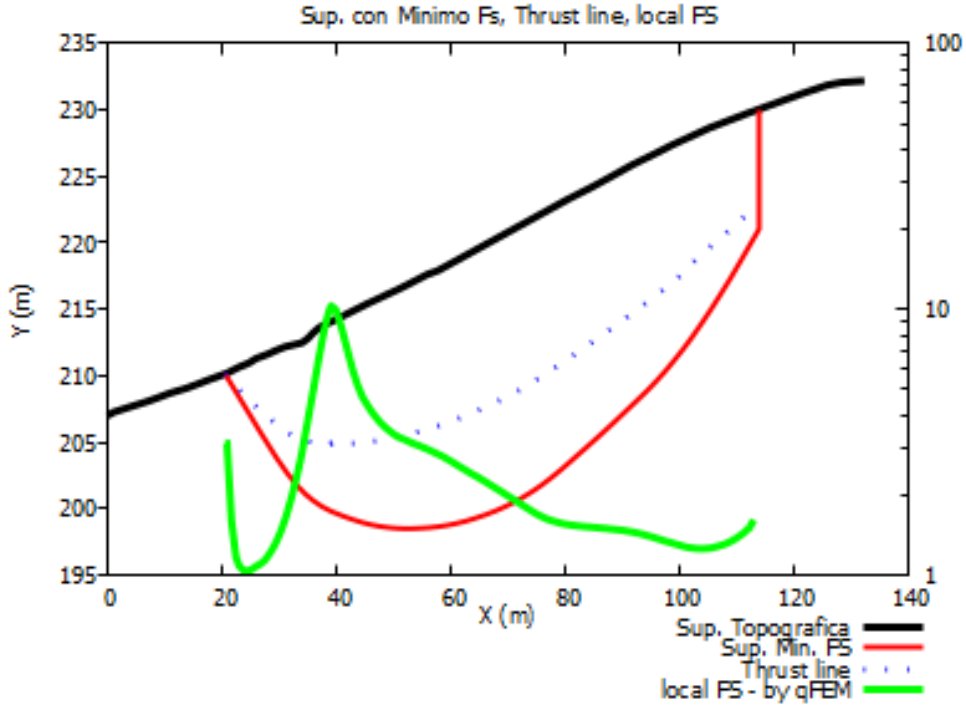
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 5.3
Range X inizio generazione : 2.7 - 121.9
Range X termine generazione : 15.9 - 129.9
Livello Y minimo considerato : 198.0

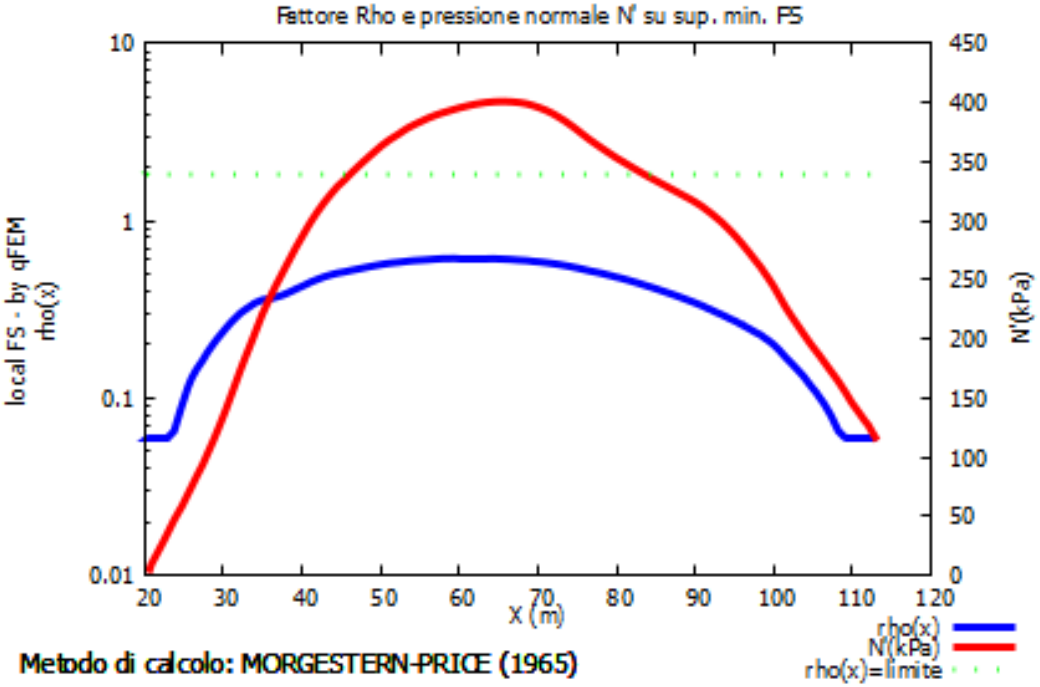
Parametri Geotecnici degli strati # ----------

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





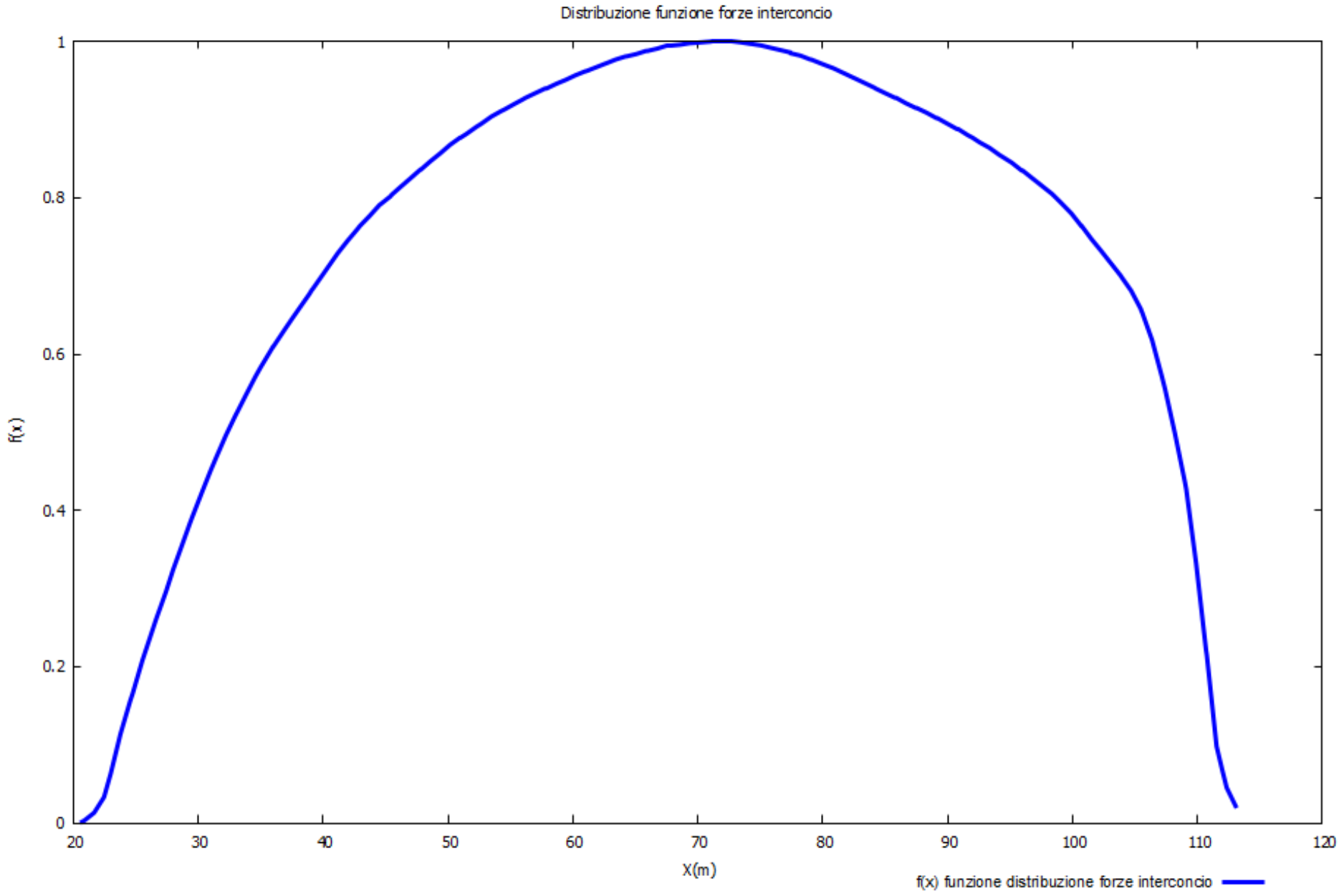


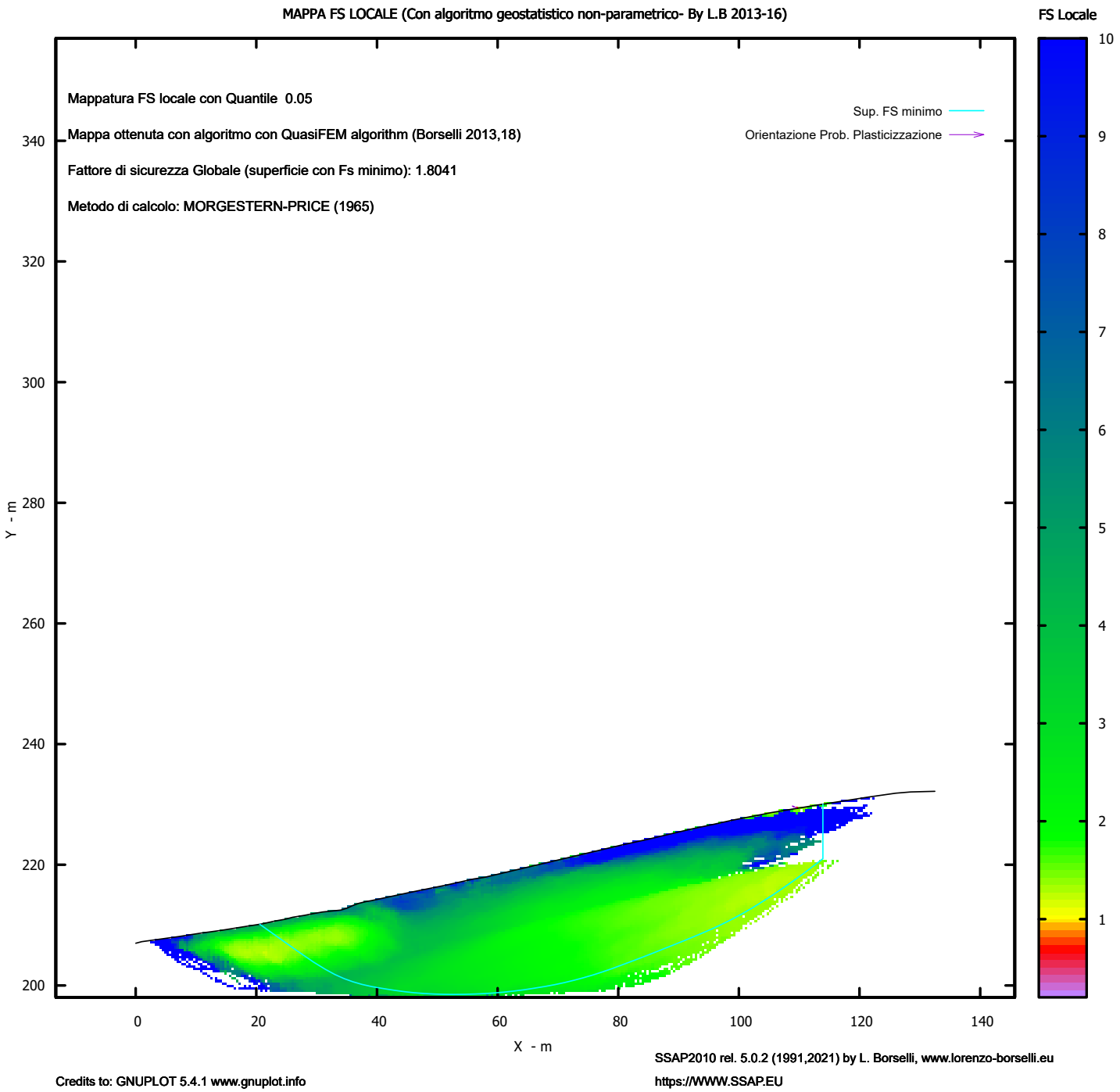


Metodo di calcolo: MORGESTERN-PRICE (1965)

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

18/11/21 12:55


Distribuzione funzione forze interconcio
1
0.8
0.6
0.4
0.2
0
f(x)
20
30
40
50
60
70
80
90
100
110
120
X(m)
f(x) funzione distribuzione forze interconcio



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 GUGLIELMO\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	206.99	-	-	-	-	-	-
1.00	207.25	-	-	-	-	-	-
4.00	207.67	-	-	-	-	-	-
7.12	208.09	-	-	-	-	-	-
9.00	208.38	-	-	-	-	-	-
10.89	208.69	-	-	-	-	-	-
14.00	209.09	-	-	-	-	-	-
18.00	209.74	-	-	-	-	-	-
20.89	210.19	-	-	-	-	-	-
23.00	210.65	-	-	-	-	-	-
24.75	210.96	-	-	-	-	-	-
26.00	211.30	-	-	-	-	-	-
28.00	211.62	-	-	-	-	-	-
29.33	211.88	-	-	-	-	-	-
31.00	212.17	-	-	-	-	-	-
34.00	212.48	-	-	-	-	-	-
35.00	212.79	-	-	-	-	-	-
36.00	213.24	-	-	-	-	-	-
37.00	213.61	-	-	-	-	-	-
38.12	213.88	-	-	-	-	-	-
39.10	214.05	-	-	-	-	-	-
45.50	215.43	-	-	-	-	-	-
51.50	216.63	-	-	-	-	-	-
56.00	217.63	-	-	-	-	-	-
57.90	217.93	-	-	-	-	-	-
80.50	223.26	-	-	-	-	-	-
85.00	224.24	-	-	-	-	-	-
92.00	225.90	-	-	-	-	-	-
96.00	226.74	-	-	-	-	-	-
99.00	227.40	-	-	-	-	-	-
105.50	228.67	-	-	-	-	-	-
112.00	229.74	-	-	-	-	-	-
121.50	231.22	-	-	-	-	-	-
126.00	231.86	-	-	-	-	-	-
128.50	232.07	-	-	-	-	-	-
132.50	232.18	-	-	-	-	-	-

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)*: 5.3 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 2.65 121.90
LIVELLO MINIMO CONSIDERATO (Ymin): 198.00
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 15.90 129.85
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) 1.8725 - Min. - X Y Lambda= 0.1385

X	Y
20.67	210.16
26.24	205.77
28.82	203.83
30.50	202.70
31.85	201.93
33.22	201.32
34.41	200.91
35.72	200.59
37.15	200.37
38.97	200.19
40.62	200.03
42.16	199.91
43.64	199.80

45.11 199.71
46.57 199.63
48.05 199.57
49.55 199.52
51.12 199.48
52.61 199.47
54.07 199.47
55.50 199.50
56.96 199.55
58.40 199.63
59.87 199.73
61.38 199.85
62.99 200.00
64.49 200.17
65.94 200.37
67.36 200.59
68.81 200.84
70.23 201.12
71.67 201.43
73.14 201.78
74.71 202.18
76.23 202.58
77.73 202.98
79.21 203.38
80.68 203.78
82.17 204.20
83.69 204.63
85.27 205.09
86.94 205.58
88.39 206.07
89.77 206.61
91.08 207.20
92.50 207.93
93.82 208.68
95.21 209.55
96.66 210.54
98.29 211.72
99.87 212.87
101.40 213.98
102.91 215.07
104.39 216.14
105.88 217.22
107.37 218.30
108.87 219.39
110.36 220.47
110.36 229.47

Fattore di sicurezza (FS) 1.9107 - N.2 -- X Y Lambda= 0.1324
16.59 209.51
26.33 205.11
30.98 203.11
34.11 201.92
36.74 201.07
39.30 200.43
41.66 199.97
44.19 199.62
46.90 199.39
50.11 199.23
52.94 199.15
55.60 199.15
58.14 199.22
60.75 199.37
63.28 199.60
65.92 199.91
68.71 200.31

71.85 200.83
74.56 201.37
77.14 201.99
79.57 202.68
82.15 203.54
84.60 204.47
87.19 205.57
89.94 206.85
93.11 208.43
95.88 209.92
98.50 211.44
100.98 213.00
103.58 214.78
106.35 216.84
109.56 219.40
111.16 220.75
111.16 229.60

Fattore di sicurezza (FS) 1.9380 - N.3 -- X Y Lambda= 0.1417
20.38 210.11
28.87 205.03
32.75 202.83
35.26 201.60
37.26 200.82
39.32 200.27
41.08 199.97
43.06 199.83
45.23 199.86
48.01 200.04
50.51 200.23
52.83 200.43
55.06 200.66
57.27 200.91
59.45 201.19
61.66 201.50
63.92 201.84
66.27 202.23
68.54 202.62
70.76 203.03
72.95 203.46
75.17 203.92
77.39 204.40
79.66 204.91
82.04 205.48
84.59 206.11
86.79 206.75
88.89 207.46
90.87 208.25
93.01 209.22
95.00 210.24
97.10 211.43
99.29 212.80
101.77 214.44
104.16 216.02
106.46 217.56
108.73 219.08
110.96 220.58
110.96 229.57

Fattore di sicurezza (FS) 1.9438 - N.4 -- X Y Lambda= 0.1372
20.11 210.07
24.99 205.90
27.22 204.08
28.66 203.03

29.80 202.33
30.98 201.78
31.97 201.43
33.08 201.17
34.31 201.00
35.90 200.88
37.35 200.78
38.69 200.69
40.00 200.62
41.27 200.55
42.54 200.50
43.82 200.45
45.11 200.42
46.44 200.38
47.73 200.37
49.00 200.36
50.26 200.37
51.53 200.39
52.78 200.42
54.05 200.46
55.33 200.52
56.66 200.59
57.95 200.66
59.24 200.75
60.51 200.83
61.79 200.92
63.06 201.02
64.34 201.13
65.63 201.24
66.94 201.36
68.23 201.47
69.51 201.57
70.77 201.66
72.04 201.74
73.32 201.81
74.63 201.88
75.97 201.94
77.38 202.00
78.65 202.08
79.87 202.20
81.04 202.37
82.29 202.58
83.48 202.83
84.73 203.15
86.07 203.53
87.61 204.00
88.92 204.46
90.15 204.95
91.30 205.48
92.53 206.12
93.69 206.78
94.91 207.55
96.20 208.43
97.66 209.49
99.01 210.50
100.30 211.49
101.55 212.49
102.81 213.54
104.05 214.60
105.30 215.71
106.58 216.88
107.92 218.13
109.23 219.35
110.52 220.54
110.52 229.50

Fattore di sicurezza (FS) 1.9594 - N.5 -- X Y Lambda= 0.1226

28.82	211.78
36.26	207.14
39.77	205.05
42.11	203.79
44.05	202.89
45.96	202.19
47.68	201.67
49.55	201.25
51.56	200.93
54.00	200.64
56.18	200.43
58.22	200.26
60.18	200.15
62.16	200.08
64.10	200.06
66.09	200.07
68.17	200.13
70.43	200.24
72.48	200.38
74.45	200.56
76.36	200.79
78.33	201.08
80.26	201.42
82.28	201.84
84.44	202.33
86.88	202.94
88.91	203.55
90.80	204.23
92.55	204.99
94.47	205.96
96.23	206.98
98.12	208.20
100.13	209.64
102.47	211.42
104.64	213.10
106.70	214.74
108.70	216.38
110.70	218.07
112.91	219.99
114.37	221.29
114.37	230.11

Fattore di sicurezza (FS) 1.9762 - N.6 -- X Y Lambda= 0.1300

25.02	211.03
31.59	206.43
34.65	204.39
36.65	203.19
38.29	202.36
39.93	201.72
41.36	201.28
42.93	200.95
44.63	200.71
46.73	200.53
48.67	200.38
50.51	200.24
52.29	200.12
54.04	200.01
55.80	199.90
57.59	199.81
59.42	199.72
61.34	199.64
63.08	199.61
64.76	199.64

66.38 199.71
68.09 199.85
69.74 200.03
71.47 200.28
73.31 200.61
75.41 201.03
77.20 201.45
78.88 201.93
80.46 202.46
82.15 203.11
83.73 203.81
85.41 204.63
87.17 205.57
89.18 206.73
91.03 207.83
92.80 208.91
94.52 210.01
96.25 211.15
97.95 212.31
99.67 213.52
101.42 214.78
103.24 216.14
105.04 217.48
106.82 218.81
108.59 220.14
108.59 229.18

Fattore di sicurezza (FS) 1.9773 - N.7 -- X Y Lambda= 0.1295
22.82 210.61
30.74 205.50
34.42 203.24
36.85 201.91
38.82 201.00
40.80 200.31
42.54 199.84
44.44 199.50
46.48 199.27
48.99 199.13
51.33 199.00
53.55 198.88
55.72 198.78
57.83 198.68
60.00 198.58
62.23 198.49
64.58 198.40
67.12 198.31
69.16 198.35
71.05 198.52
72.76 198.82
74.72 199.34
76.46 199.96
78.38 200.81
80.48 201.89
83.04 203.34
85.37 204.70
87.57 206.01
89.68 207.31
91.78 208.64
93.84 209.99
95.93 211.38
98.04 212.83
100.21 214.35
102.38 215.87
104.52 217.38
106.65 218.88

108.77 220.38
108.77 229.21

Fattore di sicurezza (FS) 1.9804 - N.8 -- X Y Lambda= 0.1342
31.02 212.17
39.78 206.89
43.90 204.52
46.64 203.11
48.90 202.12
51.14 201.35
53.17 200.81
55.41 200.38
57.89 200.06
61.01 199.80
63.52 199.69
65.79 199.71
67.86 199.86
70.11 200.17
72.15 200.57
74.36 201.15
76.72 201.89
79.52 202.89
82.06 203.84
84.47 204.78
86.80 205.74
89.14 206.74
91.46 207.77
93.83 208.88
96.30 210.08
98.96 211.41
101.34 212.68
103.62 214.01
105.80 215.40
108.11 216.97
110.56 218.81
113.40 221.08
113.40 229.96

Fattore di sicurezza (FS) 1.9826 - N.9 -- X Y Lambda= 0.1364
31.49 212.22
38.94 206.70
42.33 204.31
44.50 202.96
46.21 202.10
47.98 201.45
49.48 201.08
51.19 200.85
53.11 200.77
55.64 200.81
57.82 200.89
59.82 201.01
61.71 201.16
63.61 201.37
65.45 201.62
67.33 201.92
69.26 202.27
71.33 202.69
73.34 203.11
75.32 203.52
77.27 203.93
79.21 204.35
81.19 204.78
83.20 205.22
85.30 205.69

87.52 206.19
89.41 206.70
91.20 207.29
92.89 207.96
94.74 208.81
96.45 209.71
98.28 210.80
100.22 212.06
102.46 213.63
104.54 215.11
106.52 216.57
108.45 218.02
110.38 219.51
111.79 220.64
111.79 229.71

Fattore di sicurezza (FS) 1.9857 - N.10 -- X Y Lambda= 0.1562
31.03 212.17
35.18 208.20
37.21 206.32
38.59 205.10
39.78 204.14
40.90 203.31
41.97 202.59
43.12 201.89
44.38 201.19
45.87 200.43
47.06 199.87
48.14 199.45
49.10 199.15
50.18 198.91
51.13 198.78
52.19 198.73
53.37 198.75
54.87 198.85
56.13 198.98
57.29 199.13
58.37 199.32
59.49 199.57
60.54 199.84
61.64 200.18
62.78 200.57
64.05 201.04
65.27 201.49
66.47 201.94
67.65 202.38
68.81 202.81
69.98 203.24
71.16 203.68
72.37 204.12
73.59 204.57
74.74 204.97
75.86 205.33
76.96 205.66
78.10 205.97
79.20 206.25
80.33 206.50
81.49 206.73
82.74 206.95
83.94 207.18
85.10 207.41
86.25 207.64
87.40 207.89
88.55 208.15
89.73 208.43

90.96	208.73
92.26	209.07
93.41	209.40
94.51	209.77
95.56	210.17
96.68	210.66
97.74	211.16
98.85	211.75
100.01	212.41
101.33	213.21
102.54	213.97
103.71	214.73
104.85	215.49
105.99	216.28
107.12	217.09
108.27	217.93
109.44	218.82
110.67	219.78
111.85	220.72
111.85	229.72

---------- 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	1.872	10532.4	5624.9	4345.0	Surplus
2	1.911	10935.7	5723.2	4640.1	Surplus
3	1.938	10429.2	5381.4	4509.7	Surplus
4	1.944	10723.8	5517.0	4655.1	Surplus
5	1.959	10336.1	5275.2	4533.4	Surplus
6	1.976	10062.3	5091.8	4461.3	Surplus
7	1.977	10538.0	5329.4	4675.7	Surplus
8	1.980	9982.0	5040.3	4437.7	Surplus
9	1.983	9640.6	4862.7	4291.7	Surplus
10	1.986	10087.2	5079.9	4499.3	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 4291.7

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)
20.668	0.222	-38.19	0.47	0.00	0.00	0.00	100.00
20.890	0.795	-38.19	9.85	0.00	0.00	0.00	100.00
21.685	0.795	-38.19	22.79	0.00	0.00	0.00	100.00
22.481	0.519	-38.19	21.85	0.00	0.00	0.00	100.00
23.000	0.795	-38.19	43.90	0.00	0.00	0.00	100.00
23.795	0.795	-38.19	56.31	0.00	0.00	0.00	100.00
24.591	0.159	-38.19	12.76	0.00	0.00	0.00	100.00
24.750	0.795	-38.19	71.81	0.00	0.00	0.00	100.00
25.545	0.455	-38.19	47.16	0.00	0.00	0.00	100.00
26.000	0.241	-38.19	26.72	0.00	0.00	0.00	100.00

26.241	0.795	-36.96	95.98	0.00	0.00	0.00	100.00
27.036	0.795	-36.96	107.73	0.00	0.00	0.00	100.00
27.832	0.168	-36.96	24.32	0.00	0.00	0.00	100.00
28.000	0.795	-36.96	122.19	0.00	0.00	0.00	100.00
28.795	0.023	-36.96	3.71	0.00	0.00	0.00	100.00
28.818	0.512	-33.98	85.06	0.00	0.00	0.00	100.00
29.330	0.795	-33.98	141.30	0.00	0.00	0.00	100.00
30.125	0.374	-33.98	70.16	0.00	0.00	0.00	100.00
30.499	0.501	-29.74	97.54	0.00	0.00	0.00	100.00
31.000	0.795	-29.74	162.27	0.00	0.00	0.00	100.00
31.795	0.057	-29.74	12.06	0.00	0.00	0.00	100.00
31.853	0.795	-23.91	170.76	0.00	0.00	0.00	100.00
32.648	0.577	-23.91	128.18	0.00	0.00	0.00	100.00
33.225	0.775	-18.99	177.55	0.00	0.00	0.00	100.00
34.000	0.406	-18.99	95.54	0.00	0.00	0.00	100.00
34.406	0.594	-13.57	143.33	0.00	0.00	0.00	100.00
35.000	0.722	-13.57	180.43	0.00	0.00	0.00	100.00
35.722	0.278	-8.99	71.19	0.00	0.00	0.00	100.00
36.000	0.795	-8.99	208.81	0.00	0.00	0.00	100.00
36.795	0.205	-8.99	54.81	0.00	0.00	0.00	100.00
37.000	0.153	-8.99	41.38	0.00	0.00	0.00	100.00
37.153	0.795	-5.70	217.15	0.00	0.00	0.00	100.00
37.949	0.171	-5.70	47.29	0.00	0.00	0.00	100.00
38.120	0.795	-5.70	222.05	0.00	0.00	0.00	100.00
38.915	0.055	-5.70	15.62	0.00	0.00	0.00	100.00
38.971	0.129	-5.24	36.41	0.00	0.00	0.00	100.00
39.100	0.795	-5.24	226.58	0.00	0.00	0.00	100.00
39.895	0.720	-5.24	208.41	0.00	0.00	0.00	100.00
40.615	0.795	-4.71	234.06	0.00	0.00	0.00	100.00
41.410	0.745	-4.71	222.71	0.00	0.00	0.00	100.00
42.155	0.795	-4.15	241.43	0.00	0.00	0.00	100.00
42.951	0.693	-4.15	213.45	0.00	0.00	0.00	100.00
43.644	0.795	-3.56	248.30	0.00	0.00	0.00	100.00
44.440	0.672	-3.56	212.63	0.00	0.00	0.00	100.00
45.112	0.388	-3.00	123.96	0.00	0.00	0.00	100.00
45.500	0.795	-3.00	256.42	0.00	0.00	0.00	100.00
46.295	0.274	-3.00	89.15	0.00	0.00	0.00	100.00
46.570	0.795	-2.45	260.73	0.00	0.00	0.00	100.00
47.365	0.682	-2.45	226.04	0.00	0.00	0.00	100.00
48.047	0.795	-1.91	266.47	0.00	0.00	0.00	100.00
48.842	0.712	-1.91	241.12	0.00	0.00	0.00	100.00
49.555	0.795	-1.40	272.11	0.00	0.00	0.00	100.00
50.350	0.774	-1.40	267.39	0.00	0.00	0.00	100.00
51.123	0.377	-0.60	131.12	0.00	0.00	0.00	100.00
51.500	0.795	-0.60	279.14	0.00	0.00	0.00	100.00
52.295	0.317	-0.60	112.07	0.00	0.00	0.00	100.00
52.612	0.795	0.26	283.24	0.00	0.00	0.00	100.00
53.408	0.663	0.26	238.19	0.00	0.00	0.00	100.00
54.071	0.795	1.15	288.28	0.00	0.00	0.00	100.00
54.866	0.637	1.15	232.61	0.00	0.00	0.00	100.00
55.503	0.497	2.04	182.83	0.00	0.00	0.00	100.00
56.000	0.795	2.04	293.95	0.00	0.00	0.00	100.00
56.795	0.168	2.04	62.17	0.00	0.00	0.00	100.00
56.963	0.795	2.95	295.75	0.00	0.00	0.00	100.00
57.758	0.142	2.95	52.76	0.00	0.00	0.00	100.00
57.900	0.501	2.95	187.18	0.00	0.00	0.00	100.00
58.401	0.795	3.84	299.26	0.00	0.00	0.00	100.00
59.196	0.674	3.84	255.33	0.00	0.00	0.00	100.00
59.870	0.795	4.69	303.18	0.00	0.00	0.00	100.00
60.666	0.717	4.69	274.86	0.00	0.00	0.00	100.00
61.382	0.795	5.47	306.85	0.00	0.00	0.00	100.00
62.178	0.795	5.47	308.66	0.00	0.00	0.00	100.00
62.973	0.019	5.47	7.43	0.00	0.00	0.00	100.00
62.992	0.795	6.49	310.39	0.00	0.00	0.00	100.00
63.787	0.701	6.49	275.04	0.00	0.00	0.00	100.00
64.489	0.795	7.61	313.22	0.00	0.00	0.00	100.00

65.284	0.659	7.61	260.43	0.00	0.00	0.00	100.00
65.943	0.795	8.79	315.49	0.00	0.00	0.00	100.00
66.739	0.621	8.79	247.17	0.00	0.00	0.00	100.00
67.360	0.795	9.97	317.22	0.00	0.00	0.00	100.00
68.155	0.659	9.97	263.47	0.00	0.00	0.00	100.00
68.814	0.795	11.12	318.50	0.00	0.00	0.00	100.00
69.610	0.617	11.12	247.28	0.00	0.00	0.00	100.00
70.227	0.795	12.27	319.26	0.00	0.00	0.00	100.00
71.022	0.648	12.27	260.16	0.00	0.00	0.00	100.00
71.670	0.795	13.36	319.56	0.00	0.00	0.00	100.00
72.465	0.679	13.36	272.63	0.00	0.00	0.00	100.00
73.144	0.795	14.34	319.40	0.00	0.00	0.00	100.00
73.939	0.771	14.34	309.23	0.00	0.00	0.00	100.00
74.710	0.795	14.59	318.87	0.00	0.00	0.00	100.00
75.505	0.727	14.59	291.29	0.00	0.00	0.00	100.00
76.232	0.795	14.85	318.24	0.00	0.00	0.00	100.00
77.028	0.698	14.85	279.01	0.00	0.00	0.00	100.00
77.726	0.795	15.11	317.50	0.00	0.00	0.00	100.00
78.521	0.685	15.11	272.96	0.00	0.00	0.00	100.00
79.206	0.795	15.38	316.65	0.00	0.00	0.00	100.00
80.002	0.498	15.38	198.18	0.00	0.00	0.00	100.00
80.500	0.179	15.38	71.28	0.00	0.00	0.00	100.00
80.679	0.795	15.65	315.51	0.00	0.00	0.00	100.00
81.475	0.698	15.65	276.15	0.00	0.00	0.00	100.00
82.173	0.795	15.91	313.97	0.00	0.00	0.00	100.00
82.968	0.725	15.91	285.23	0.00	0.00	0.00	100.00
83.693	0.795	16.17	312.29	0.00	0.00	0.00	100.00
84.488	0.512	16.17	200.53	0.00	0.00	0.00	100.00
85.000	0.272	16.17	106.34	0.00	0.00	0.00	100.00
85.272	0.795	16.40	310.62	0.00	0.00	0.00	100.00
86.067	0.795	16.40	309.89	0.00	0.00	0.00	100.00
86.863	0.078	16.40	30.41	0.00	0.00	0.00	100.00
86.941	0.795	18.66	308.80	0.00	0.00	0.00	100.00
87.736	0.650	18.66	251.52	0.00	0.00	0.00	100.00
88.387	0.795	21.36	306.10	0.00	0.00	0.00	100.00
89.182	0.589	21.36	225.38	0.00	0.00	0.00	100.00
89.771	0.795	24.28	302.27	0.00	0.00	0.00	100.00
90.566	0.513	24.28	193.60	0.00	0.00	0.00	100.00
91.080	0.795	27.01	297.36	0.00	0.00	0.00	100.00
91.875	0.125	27.01	46.38	0.00	0.00	0.00	100.00
92.000	0.499	27.01	184.34	0.00	0.00	0.00	100.00
92.499	0.795	29.61	290.32	0.00	0.00	0.00	100.00
93.294	0.524	29.61	188.58	0.00	0.00	0.00	100.00
93.818	0.795	32.13	282.29	0.00	0.00	0.00	100.00
94.613	0.593	32.13	206.98	0.00	0.00	0.00	100.00
95.206	0.794	34.25	271.94	0.00	0.00	0.00	100.00
96.000	0.657	34.25	220.61	0.00	0.00	0.00	100.00
96.657	0.795	35.95	261.38	0.00	0.00	0.00	100.00
97.452	0.795	35.95	254.88	0.00	0.00	0.00	100.00
98.248	0.044	35.95	13.99	0.00	0.00	0.00	100.00
98.292	0.708	35.94	221.06	0.00	0.00	0.00	100.00
99.000	0.795	35.94	242.07	0.00	0.00	0.00	100.00
99.795	0.077	35.94	22.93	0.00	0.00	0.00	100.00
99.872	0.795	35.94	234.59	0.00	0.00	0.00	100.00
100.667	0.735	35.94	210.65	0.00	0.00	0.00	100.00
101.402	0.795	35.94	221.47	0.00	0.00	0.00	100.00
102.198	0.716	35.94	193.54	0.00	0.00	0.00	100.00
102.914	0.795	35.94	208.52	0.00	0.00	0.00	100.00
103.709	0.683	35.94	173.58	0.00	0.00	0.00	100.00
104.392	0.795	35.94	195.84	0.00	0.00	0.00	100.00
105.187	0.313	35.94	75.14	0.00	0.00	0.00	100.00
105.500	0.382	35.94	90.38	0.00	0.00	0.00	100.00
105.882	0.795	35.94	182.68	0.00	0.00	0.00	100.00
106.678	0.693	35.94	153.30	0.00	0.00	0.00	100.00
107.371	0.795	35.94	169.18	0.00	0.00	0.00	100.00
108.166	0.702	35.94	143.22	0.00	0.00	0.00	100.00

108.868	0.795	35.94	155.60	0.00	0.00	0.00	100.00
109.663	0.699	35.94	130.77	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 (--)		
20.668	0.000	210.155	-0.536	0.0000000000E+000	0.0000000000E+000	8.7505523586E+001	0.062	3.068	3.564		
20.890	0.052	210.033	-0.536	2.2162829817E+001	5.4637596268E-003	1.1224983760E+002	0.062	3.068	3.564		
21.685	0.255	209.610	-0.537	1.4672176025E+002	3.5389281754E-001	1.4124295186E+002	0.062	1.538	1.786		
22.481	0.449	209.178	-0.546	2.4685351438E+002	2.1031850702E+000	1.3690356205E+002	0.062	1.074	1.246		
23.000	0.572	208.893	-0.552	3.2166568170E+002	4.9989104072E+000	1.5157472347E+002	0.062	0.987	1.143		
23.795	0.758	208.453	-0.506	4.5134477411E+002	1.1611216529E+001	1.5808192144E+002	0.070	0.946	1.093		
24.591	1.019	208.088	-0.450	5.7314396559E+002	1.8985817060E+001	1.4618367634E+002	0.092	0.954	1.098		
24.750	1.079	208.024	-0.468	5.9619369913E+002	2.0486668774E+001	1.5167604533E+002	0.096	0.959	1.102		
25.545	1.322	207.641	-0.466	7.4418986208E+002	3.0774427242E+001	1.8452062270E+002	0.119	1.003	1.143		
26.000	1.480	207.441	-0.423	8.2767105555E+002	3.6953087134E+001	1.6962075651E+002	0.130	1.035	1.171		
26.241	1.575	207.347	-0.401	8.6672475148E+002	3.9825686521E+001	1.6394789806E+002	0.134	1.048	1.182		
27.036	1.852	207.025	-0.392	1.0017327655E+003	4.9952890621E+001	1.6972221617E+002	0.149	1.100	1.223		
27.832	2.149	206.724	-0.379	1.1367205313E+003	6.0670131926E+001	1.7636071143E+002	0.162	1.173	1.280		
28.000	2.212	206.660	-0.344	1.1666584844E+003	6.3138218580E+001	1.7547750478E+002	0.165	1.193	1.294		
28.795	2.543	206.392	-0.336	1.2976257712E+003	7.4469775464E+001	1.6312947052E+002	0.176	1.293	1.363		
28.818	2.553	206.385	-0.336	1.3013734375E+003	7.4813181127E+001	1.6367558962E+002	0.176	1.296	1.365		
29.330	2.725	206.213	-0.330	1.3918348870E+003	8.3559989847E+001	1.7840218271E+002	0.186	1.383	1.417		
30.125	3.003	205.954	-0.312	1.5356991233E+003	9.8614783792E+001	1.7307694768E+002	0.204	1.555	1.506		
30.499	3.149	205.848	-0.287	1.5990180132E+003	1.0590828775E+002	1.7566114824E+002	0.211	1.649	1.547		
31.000	3.290	205.703	-0.268	1.6911890407E+003	1.1737774696E+002	1.8165390252E+002	0.225	1.814	1.610		
31.795	3.542	205.501	-0.251	1.8326750873E+003	1.3680409073E+002	1.7250526731E+002	0.249	2.149	1.711		
31.853	3.563	205.489	-0.204	1.8425626210E+003	1.3833963783E+002	1.7212297877E+002	0.251	2.179	1.719		
32.648	3.753	205.327	-0.194	1.9795343810E+003	1.6032788827E+002	1.7496457171E+002	0.279	2.685	1.828		
33.225	3.904	205.222	-0.155	2.0815685828E+003	1.7810523084E+002	1.7251594139E+002	0.301	3.232	1.918		
34.000	4.065	205.117	-0.124	2.2106599045E+003	2.0279019301E+002	1.5743772441E+002	0.332	4.235	2.040		
34.406	4.164	205.075	-0.075	2.2726535366E+003	2.1510610361E+002	1.4217730556E+002	0.344	4.929	2.104		
35.000	4.274	205.042	-0.043	2.3479805365E+003	2.3094543026E+002	1.2111712025E+002	0.360	5.987	2.187		
35.722	4.425	205.019	-0.028	2.4304704747E+003	2.4865579807E+002	1.0441956774E+002	0.372	7.523	2.286		
36.000	4.465	205.014	-0.001	2.4584079759E+003	2.5474360148E+002	9.7112382332E+001	0.376	8.088	2.321		
36.795	4.594	205.018	0.006	2.5275344062E+003	2.7001947719E+002	8.3108701717E+001	0.386	9.254	2.417		
37.000	4.629	205.021	0.014	2.5443381342E+003	2.7373120231E+002	8.1753443492E+001	0.388	9.466	2.442		
37.153	4.656	205.023	0.023	2.5568418914E+003	2.7647695928E+002	7.9432373865E+001	0.390	9.602	2.461		
37.949	4.755	205.043	0.026	2.6116243138E+003	2.8838624588E+002	6.7363170370E+001	0.398	9.542	2.550		
38.120	4.777	205.048	0.034	2.6230957422E+003	2.9086817069E+002	6.6309606805E+001	0.400	9.487	2.570		
38.915	4.884	205.076	0.035	2.6731448425E+003	3.0142285278E+002	5.9188704297E+001	0.408	8.854	2.663		
38.971	4.892	205.078	0.040	2.6764148106E+003	3.0209917574E+002	6.0235137698E+001	0.409	8.806	2.670		
39.100	4.909	205.083	0.045	2.6845839976E+003	3.0380967245E+002	6.3632339903E+001	0.410	8.685	2.686		
39.895	5.019	205.119	0.050	2.7369444223E+003	3.1483326985E+002	6.8216221968E+001	0.417	7.888	2.799		
40.615	5.124	205.159	0.061	2.7875904135E+003	3.2569543852E+002	7.4544803557E+001	0.425	7.122	2.920		
41.410	5.242	205.212	0.069	2.8505483385E+003	3.3951260794E+002	8.0592937793E+001	0.436	6.353	3.087		
42.155	5.358	205.266	0.075	2.9115950031E+003	3.5324789543E+002	8.1408814493E+001	0.447	5.784	3.266		
42.951	5.476	205.327	0.078	2.9758947452E+003	3.6806924731E+002	7.9253044022E+001	0.459	5.332	3.470		
43.644	5.581	205.381	0.078	3.0298806130E+003	3.8072319726E+002	7.5585990144E+001	0.468	5.016	3.652		
44.440	5.693	205.443	0.072	3.0879170843E+003	3.9451472250E+002	6.3866482595E+001	0.478	4.727	3.854		
45.112	5.778	205.487	0.065	3.1256803116E+003	4.0357222453E+002	5.5191033163E+001	0.483	4.568	3.977		
45.500	5.824	205.513	0.068	3.1468871739E+003	4.0867135751E+002	5.4662798831E+001	0.486	4.486	4.043		

46.295	5.921	205.568	0.070	3.1904337965E+003	4.1926125093E+002	5.3519282508E+001	0.492	4.339	4.161
46.570	5.955	205.587	0.076	3.2049931370E+003	4.2284220478E+002	5.3759285915E+001	0.495	4.293	4.197
47.365	6.050	205.649	0.080	3.2492844077E+003	4.3391674610E+002	5.5645700717E+001	0.501	4.168	4.287
48.047	6.136	205.705	0.086	3.2872126175E+003	4.4359153012E+002	5.5750027977E+001	0.507	4.073	4.345
48.842	6.232	205.775	0.089	3.3316836511E+003	4.5519542738E+002	5.4591496499E+001	0.515	3.972	4.387
49.555	6.320	205.840	0.094	3.3697189192E+003	4.6534410045E+002	5.3319834763E+001	0.521	3.895	4.401
50.350	6.417	205.917	0.099	3.4120486882E+003	4.7689663772E+002	5.1842043639E+001	0.528	3.815	4.388
51.123	6.514	205.996	0.101	3.4511150079E+003	4.8778747465E+002	4.7019508556E+001	0.535	3.746	4.345
51.500	6.556	206.033	0.105	3.4681800124E+003	4.9261823381E+002	4.5203025276E+001	0.538	3.717	4.316
52.295	6.650	206.118	0.109	3.5039324443E+003	5.0283158054E+002	4.3583652686E+001	0.543	3.656	4.230
52.612	6.689	206.155	0.117	3.5175746492E+003	5.0679933302E+002	4.2538576076E+001	0.545	3.633	4.187
53.408	6.779	206.248	0.115	3.5504098469E+003	5.1646562687E+002	3.8622665860E+001	0.550	3.573	4.070
54.071	6.851	206.323	0.114	3.5745432012E+003	5.2370173786E+002	3.5102341229E+001	0.553	3.526	3.972
54.866	6.926	206.414	0.113	3.6012183979E+003	5.3194819192E+002	3.1250253091E+001	0.557	3.469	3.854
55.503	6.984	206.484	0.111	3.6199481595E+003	5.3798064817E+002	2.8271928968E+001	0.559	3.425	3.763
56.000	7.022	206.540	0.113	3.6335621183E+003	5.4256157741E+002	2.6428429277E+001	0.561	3.391	3.693
56.795	7.084	206.630	0.114	3.6533793965E+003	5.4970427620E+002	2.3191880468E+001	0.565	3.333	3.580
56.963	7.097	206.650	0.118	3.6572071788E+003	5.5119797643E+002	2.2348791773E+001	0.566	3.320	3.556
57.758	7.150	206.744	0.119	3.6731727122E+003	5.5803211836E+002	1.8810321391E+001	0.571	3.260	3.444
57.900	7.161	206.762	0.127	3.6758029020E+003	5.5930103054E+002	1.8071440339E+001	0.571	3.248	3.423
58.401	7.198	206.825	0.134	3.6839383430E+003	5.6353913323E+002	1.5760796978E+001	0.573	3.207	3.351
59.196	7.256	206.936	0.143	3.6958537828E+003	5.7060985150E+002	1.3755715478E+001	0.576	3.136	3.229
59.870	7.309	207.035	0.155	3.7044270919E+003	5.7653285765E+002	1.1815997483E+001	0.578	3.074	3.127
60.666	7.374	207.164	0.166	3.7129792171E+003	5.8368329880E+002	9.3959573460E+000	0.582	2.995	3.002
61.382	7.437	207.286	0.176	3.7188373074E+003	5.8985838779E+002	6.5667506926E+000	0.584	2.922	2.892
62.178	7.504	207.430	0.178	3.7226414074E+003	5.9619361571E+002	2.9532376396E+000	0.587	2.839	2.775
62.973	7.568	207.570	0.176	3.7235353471E+003	6.0143689282E+002	-8.0580582688E-001	0.589	2.760	2.671
62.992	7.570	207.574	0.177	3.7235190769E+003	6.0155267930E+002	-9.1407879772E-001	0.589	2.758	2.668
63.787	7.620	207.714	0.174	3.7207392540E+003	6.0554721325E+002	-5.5018470475E+000	0.590	2.681	2.574
64.489	7.660	207.834	0.178	3.7156382623E+003	6.0799952895E+002	-9.1703019151E+000	0.590	2.615	2.501
65.284	7.701	207.981	0.186	3.7066318976E+003	6.1012975266E+002	-1.3261247794E+001	0.589	2.539	2.420
65.943	7.736	208.104	0.195	3.6968374237E+003	6.1120368860E+002	-1.6875043997E+001	0.588	2.478	2.358
66.739	7.773	208.264	0.203	3.6814862809E+003	6.1181902242E+002	-2.1393009161E+001	0.587	2.403	2.285
67.360	7.805	208.392	0.214	3.6671782871E+003	6.1171277937E+002	-2.5155205258E+001	0.585	2.346	2.232
68.155	7.840	208.568	0.217	3.6450038014E+003	6.1086835298E+002	-2.9561251983E+001	0.583	2.273	2.166
68.814	7.864	208.707	0.212	3.6245982895E+003	6.0954421578E+002	-3.2250233598E+001	0.581	2.219	2.118
69.610	7.877	208.876	0.212	3.5977041287E+003	6.0721266466E+002	-3.5451352808E+001	0.577	2.160	2.067
70.227	7.887	209.007	0.219	3.5750581874E+003	6.0492050041E+002	-3.8676201993E+001	0.574	2.118	2.031
71.022	7.892	209.186	0.225	3.5422904983E+003	6.0117383161E+002	-4.2551021183E+001	0.571	2.067	1.986
71.670	7.897	209.332	0.231	3.5140148171E+003	5.9761878114E+002	-4.5823085147E+001	0.567	2.029	1.952
72.465	7.896	209.519	0.235	3.4754484745E+003	5.9234548457E+002	-4.9388335172E+001	0.562	1.986	1.911
73.144	7.894	209.678	0.241	3.4414097714E+003	5.8736637215E+002	-5.2249811431E+001	0.557	1.953	1.879
73.939	7.887	209.875	0.247	3.3978997240E+003	5.8061349741E+002	-5.5412573769E+001	0.551	1.918	1.842
74.710	7.880	210.064	0.251	3.3546642237E+003	5.7354276287E+002	-5.9972442522E+001	0.545	1.888	1.808
75.505	7.876	210.268	0.253	3.3037838772E+003	5.6478825946E+002	-6.4083631790E+001	0.537	1.859	1.771
76.232	7.869	210.450	0.252	3.2571000108E+003	5.5647233331E+002	-6.4108133166E+001	0.530	1.836	1.740
77.028	7.860	210.652	0.253	3.2061788618E+003	5.4722557421E+002	-6.2077147071E+001	0.521	1.813	1.709
77.726	7.851	210.829	0.255	3.1640307438E+003	5.3945944083E+002	-6.0188521818E+001	0.515	1.796	1.685
78.521	7.841	211.033	0.256	3.1163233459E+003	5.3061960546E+002	-5.8117841967E+001	0.507	1.779	1.659
79.206	7.831	211.208	0.255	3.0776263759E+003	5.2343118755E+002	-5.8199732163E+001	0.501	1.765	1.640
80.002	7.814	211.410	0.246	3.0297781758E+003	5.1457133595E+002	-5.9544528546E+001	0.493	1.750	1.618
80.500	7.794	211.527	0.235	3.0002887791E+003	5.0913539700E+002	-5.9381571120E+001	0.488	1.741	1.605
80.679	7.787	211.569	0.236	2.9896200140E+003	5.0717200689E+002	-5.9610732458E+001	0.487	1.737	1.601
81.475	7.752	211.757	0.247	2.9416766524E+003	4.9836285758E+002	-6.3503563389E+001	0.479	1.723	1.581
82.173	7.737	211.938	0.258	2.8953853486E+003	4.8980723393E+002	-6.6377584533E+001	0.472	1.708	1.562
82.968	7.715	212.142	0.254	2.8425503353E+003	4.7999421834E+002	-6.5716328833E+001	0.464	1.690	1.542
83.693	7.691	212.324	0.254	2.7954062212E+003	4.7116059340E+002	-6.6214368923E+001	0.457	1.671	1.524
84.488	7.665	212.529	0.253	2.7417401559E+003	4.6096348356E+002	-6.6049393373E+001	0.448	1.647	1.506
85.000	7.642	212.655	0.250	2.7083899086E+003	4.5454452541E+002	-6.7366697585E+001	0.443	1.629	1.494
85.272	7.633	212.725	0.265	2.6897521905E+003	4.5092203365E+002	-6.9543039035E+001	0.439	1.619	1.489
86.067	7.612	212.938	0.263	2.6321306546E+003	4.3960520874E+002	-7.2211932001E+001	0.429	1.583	1.472
86.863	7.583	213.143	0.260	2.5748767349E+003	4.2824993116E+002	-7.9428605263E+001	0.419	1.543	1.457
86.941	7.582	213.165	0.285	2.5686114424E+003	4.2701005703E+002	-8.0409699033E+001	0.418	1.539	1.456
87.736	7.540	213.392	0.291	2.5026355949E+003	4.1395964768E+002	-8.6301696103E+001	0.407	1.492	1.443
88.387	7.515	213.586	0.307	2.4447246148E+003	4.0255953373E+002	-9.2225627875E+001	0.397	1.453	1.433
89.182	7.454	213.836	0.318	2.3682740038E+003	3.8762893338E+002	-9.8930214691E+001	0.385	1.407	1.423

89.771	7.414	214.026	0.332	2.3087792108E+003	3.7610922193E+002	-1.0410568810E+002	0.375	1.375	1.416
90.566	7.324	214.296	0.331	2.2226525554E+003	3.5958046966E+002	-1.0594863004E+002	0.362	1.335	1.409
91.080	7.257	214.459	0.326	2.1690417117E+003	3.4940710821E+002	-1.0649737229E+002	0.354	1.314	1.407
91.875	7.114	214.723	0.330	2.0818022275E+003	3.3295343873E+002	-1.0893411812E+002	0.341	1.286	1.404
92.000	7.092	214.763	0.346	2.0682100677E+003	3.3039508132E+002	-1.1062945602E+002	0.339	1.282	1.404
92.499	7.013	214.939	0.361	2.0093940796E+003	3.1933204393E+002	-1.2002774525E+002	0.331	1.268	1.404
93.294	6.852	215.230	0.380	1.9111871296E+003	3.0102389132E+002	-1.3004044974E+002	0.317	1.251	1.406
93.818	6.764	215.439	0.416	1.8408403079E+003	2.8797878575E+002	-1.3749911435E+002	0.306	1.242	1.408
94.613	6.603	215.779	0.440	1.7276873855E+003	2.6717057027E+002	-1.4737979890E+002	0.290	1.233	1.414
95.206	6.503	216.051	0.467	1.6380161289E+003	2.5087198180E+002	-1.5217882761E+002	0.276	1.229	1.419
96.000	6.338	216.426	0.471	1.5162083896E+003	2.2900340951E+002	-1.5167574288E+002	0.258	1.227	1.428
96.657	6.199	216.734	0.471	1.4175456442E+003	2.1152966125E+002	-1.4924213350E+002	0.242	1.228	1.435
97.452	5.998	217.110	0.443	1.2997343876E+003	1.9099328131E+002	-1.3691556777E+002	0.224	1.231	1.446
98.248	5.751	217.440	0.414	1.1997390051E+003	1.7400713339E+002	-1.2420830937E+002	0.210	1.237	1.455
98.292	5.737	217.458	0.415	1.1942443237E+003	1.7308369452E+002	-1.2401319498E+002	0.209	1.238	1.456
99.000	5.517	217.752	0.409	1.1077104580E+003	1.5864396325E+002	-1.1910396009E+002	0.196	1.245	1.465
99.795	5.262	218.073	0.405	1.0157728237E+003	1.4348521629E+002	-1.1950140825E+002	0.182	1.255	1.476
99.872	5.239	218.105	0.455	1.0065993897E+003	1.4196928100E+002	-1.2043008205E+002	0.181	1.256	1.477
100.667	5.026	218.469	0.457	9.0624509123E+002	1.2537746096E+002	-1.2432171881E+002	0.164	1.269	1.490
101.402	4.828	218.804	0.461	8.1614813842E+002	1.1049851121E+002	-1.2258256930E+002	0.149	1.283	1.504
102.198	4.622	219.174	0.462	7.1867461869E+002	9.4397795540E+001	-1.2045131866E+002	0.131	1.299	1.520
102.914	4.431	219.503	0.462	6.3377715312E+002	8.0401148705E+001	-1.1819566633E+002	0.115	1.316	1.536
103.709	4.224	219.873	0.439	5.4009081945E+002	6.5093723149E+001	-1.0829767332E+002	0.096	1.338	1.559
104.392	4.009	220.152	0.408	4.7169820422E+002	5.4156034945E+001	-9.9147728076E+001	0.082	1.357	1.578
105.187	3.755	220.476	0.393	3.9376692792E+002	4.1807484733E+001	-8.9336864421E+001	0.066	1.379	1.600
105.500	3.641	220.588	0.350	3.6688946370E+002	3.7546241900E+001	-8.3737088175E+001	0.062	1.387	1.609
105.882	3.495	220.719	0.340	3.3590365125E+002	3.2785383262E+001	-7.9925770151E+001	0.062	1.399	1.620
106.678	3.187	220.988	0.353	2.7418145091E+002	2.3950511853E+001	-7.9683449166E+001	0.062	1.429	1.653
107.371	2.941	221.245	0.412	2.1769607888E+002	1.6658782207E+001	-8.6495090249E+001	0.062	1.471	1.699
108.166	2.721	221.601	0.444	1.4433786227E+002	8.1533028197E+000	-8.1444637439E+001	0.062	1.547	1.783
108.868	2.520	221.909	0.492	9.3874641085E+001	3.8399530071E+000	-6.9168756711E+001	0.062	1.612	1.853
109.663	2.372	222.337	0.492	4.1351850356E+001	1.4938283141E+000	-6.2377359465E+001	0.062	1.703	1.949

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)
20.668	0.222	0.282	-38.191	-0.988	-0.279	100.022	28.239
20.890	0.795	1.012	-38.191	-5.751	-5.820	100.399	101.605
21.685	0.795	1.012	-38.191	-13.302	-13.462	102.001	103.227
22.481	0.519	0.661	-38.191	-19.542	-12.909	105.075	69.411
23.000	0.795	1.012	-38.191	-25.628	-25.936	107.564	108.857
23.795	0.795	1.012	-38.191	-32.872	-33.267	108.436	109.740
24.591	0.159	0.203	-38.191	-37.218	-7.538	108.579	21.992
24.750	0.795	1.012	-38.191	-41.922	-42.426	111.769	113.112
25.545	0.455	0.578	-38.191	-48.174	-27.863	112.367	64.993
26.000	0.241	0.306	-38.191	-51.524	-15.785	110.855	33.961
26.241	0.795	0.995	-36.958	-55.277	-55.023	111.453	110.942
27.036	0.795	0.995	-36.958	-62.042	-61.757	112.121	111.606
27.832	0.168	0.211	-36.958	-66.141	-13.940	113.184	23.854
28.000	0.795	0.995	-36.958	-70.371	-70.048	112.816	112.297

28.795	0.023	0.029	-36.958	-73.987	-2.128	113.443	3.262
28.818	0.512	0.617	-33.978	-73.052	-45.070	114.836	70.849
29.330	0.795	0.959	-33.978	-78.055	-74.868	116.425	111.672
30.125	0.374	0.451	-33.978	-82.485	-37.176	116.934	52.703
30.499	0.501	0.577	-29.742	-78.750	-45.426	118.470	68.338
31.000	0.795	0.916	-29.742	-82.493	-75.571	119.699	109.654
31.795	0.057	0.066	-29.742	-84.861	-5.615	121.559	8.043
31.853	0.795	0.870	-23.906	-73.253	-63.734	119.176	103.689
32.648	0.577	0.631	-23.906	-75.857	-47.842	121.388	76.557
33.225	0.775	0.820	-18.986	-63.295	-51.887	118.344	97.014
34.000	0.406	0.429	-18.986	-65.017	-27.919	117.471	50.444
34.406	0.594	0.611	-13.570	-47.059	-28.753	111.389	68.059
35.000	0.722	0.743	-13.570	-48.700	-36.196	110.469	82.105
35.722	0.278	0.281	-8.994	-30.851	-8.668	106.343	29.878
36.000	0.795	0.805	-8.994	-31.572	-25.425	105.553	85.002
36.795	0.205	0.207	-8.994	-32.219	-6.674	105.245	21.801
37.000	0.153	0.155	-8.994	-32.426	-5.039	105.173	16.343
37.153	0.795	0.799	-5.703	-17.533	-14.015	102.772	82.152
37.949	0.171	0.172	-5.703	-17.748	-3.052	102.685	17.659
38.120	0.795	0.799	-5.703	-17.928	-14.331	102.457	81.900
38.915	0.055	0.056	-5.703	-18.080	-1.008	102.257	5.703
38.971	0.129	0.130	-5.241	-15.863	-2.057	102.256	13.257
39.100	0.795	0.799	-5.241	-16.023	-12.798	102.360	81.760
39.895	0.720	0.723	-5.241	-16.289	-11.772	102.571	74.124
40.615	0.795	0.798	-4.706	-13.832	-11.039	102.660	81.932
41.410	0.745	0.748	-4.706	-14.051	-10.504	102.823	76.861
42.155	0.795	0.797	-4.145	-11.316	-9.024	102.516	81.755
42.951	0.693	0.695	-4.145	-11.478	-7.979	102.464	71.222
43.644	0.795	0.797	-3.556	-8.439	-6.726	102.010	81.295
44.440	0.672	0.674	-3.556	-8.551	-5.759	101.562	68.403
45.112	0.388	0.389	-2.999	-5.536	-2.152	101.285	39.378
45.500	0.795	0.796	-2.999	-5.589	-4.452	101.302	80.687
46.295	0.274	0.275	-2.999	-5.637	-1.548	101.277	27.809
46.570	0.795	0.796	-2.445	-2.520	-2.006	101.111	80.498
47.365	0.682	0.683	-2.445	-2.548	-1.739	101.132	69.035
48.047	0.795	0.796	-1.907	0.572	0.455	100.908	80.307
48.842	0.712	0.713	-1.907	0.578	0.412	100.887	71.884
49.555	0.795	0.796	-1.399	3.619	2.880	100.664	80.092
50.350	0.774	0.774	-1.399	3.657	2.830	100.643	77.874
51.123	0.377	0.377	-0.603	8.522	3.209	100.253	37.749
51.500	0.795	0.795	-0.603	8.588	6.831	100.253	79.746
52.295	0.317	0.317	-0.603	8.652	2.743	100.247	31.777
52.612	0.795	0.795	0.255	14.048	11.174	99.899	79.461
53.408	0.663	0.663	0.255	14.176	9.397	99.909	66.228
54.071	0.795	0.796	1.150	19.953	15.874	99.610	79.247
54.866	0.637	0.637	1.150	20.115	12.808	99.644	63.449
55.503	0.497	0.498	2.044	25.952	12.915	99.385	49.457
56.000	0.795	0.796	2.044	26.089	20.764	99.401	79.114
56.795	0.168	0.168	2.044	26.173	4.391	99.406	16.678
56.963	0.795	0.796	2.946	32.064	25.538	99.174	78.988
57.758	0.142	0.142	2.946	32.152	4.556	99.138	14.048
57.900	0.501	0.501	2.946	32.246	16.163	99.186	49.717
58.401	0.795	0.797	3.841	38.255	30.497	98.888	78.833
59.196	0.674	0.676	3.841	38.512	26.020	98.900	66.821
59.870	0.795	0.798	4.694	44.337	35.384	98.627	78.713
60.666	0.717	0.719	4.694	44.612	32.079	98.684	70.960
61.382	0.795	0.799	5.471	49.995	39.948	98.585	78.773
62.178	0.795	0.799	5.471	50.289	40.183	98.829	78.968
62.973	0.019	0.019	5.471	50.439	0.967	98.922	1.897
62.992	0.795	0.801	6.487	57.291	45.863	98.944	79.208
63.787	0.701	0.706	6.487	57.564	40.640	99.265	70.081
64.489	0.795	0.802	7.610	65.231	52.346	99.342	79.719
65.284	0.659	0.665	7.610	65.482	43.524	99.599	66.201
65.943	0.795	0.805	8.792	73.471	59.134	99.781	80.310
66.739	0.621	0.629	8.792	73.688	46.329	100.048	62.902
67.360	0.795	0.808	9.967	81.523	65.838	100.339	81.033

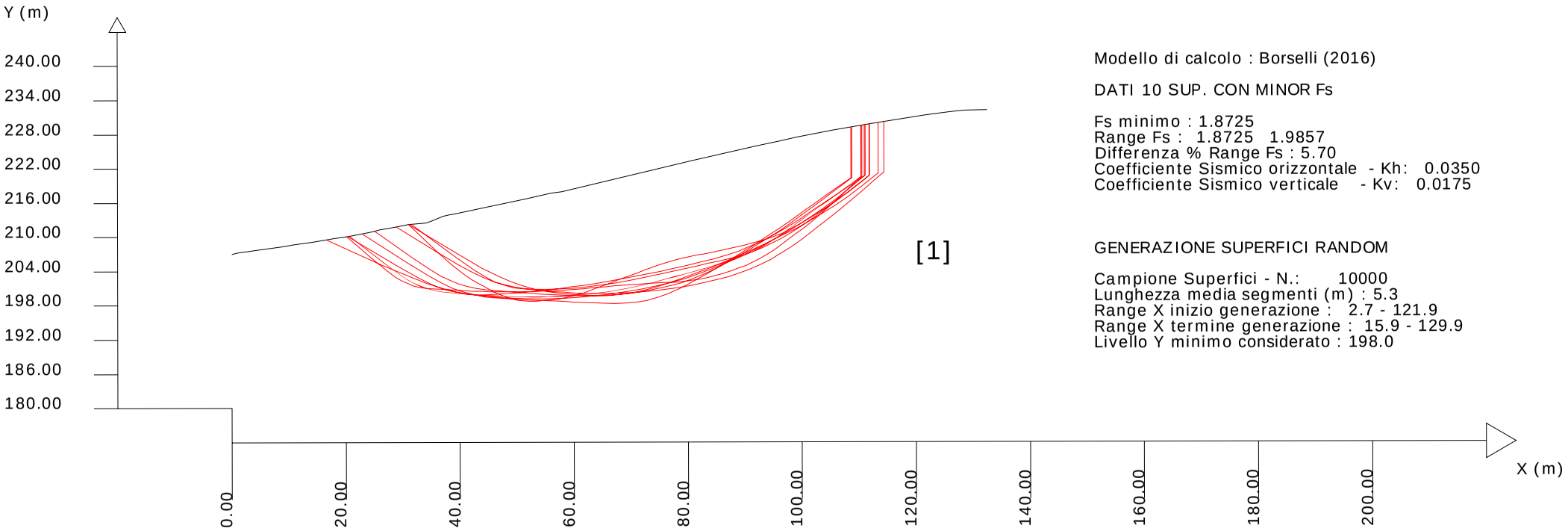
68.155	0.659	0.669	9.967	81.705	54.683	100.641	67.357
68.814	0.795	0.811	11.120	89.273	72.367	101.039	81.905
69.610	0.617	0.628	11.120	89.399	56.185	101.317	63.676
70.227	0.795	0.814	12.273	96.784	78.783	101.832	82.892
71.022	0.648	0.663	12.273	96.849	64.198	102.135	67.702
71.670	0.795	0.818	13.357	103.614	84.707	102.790	84.033
72.465	0.679	0.697	13.357	103.608	72.266	103.088	71.904
73.144	0.795	0.821	14.342	109.561	89.949	103.815	85.231
73.939	0.771	0.795	14.342	109.475	87.083	104.123	82.825
74.710	0.795	0.822	14.590	110.870	91.126	105.024	86.320
75.505	0.727	0.752	14.590	110.766	83.242	105.219	79.074
76.232	0.795	0.823	14.849	112.191	92.321	105.392	86.726
77.028	0.698	0.722	14.849	112.067	80.940	105.160	75.952
77.726	0.795	0.824	15.111	113.482	93.497	105.237	86.704
78.521	0.685	0.709	15.111	113.336	80.382	104.947	74.432
79.206	0.795	0.825	15.377	114.734	94.648	105.332	86.892
80.002	0.498	0.517	15.377	114.586	59.236	105.221	54.395
80.500	0.179	0.186	15.377	114.498	21.307	105.239	19.583
80.679	0.795	0.826	15.648	115.899	95.735	105.386	87.051
81.475	0.698	0.725	15.648	115.622	83.791	105.962	76.790
82.173	0.795	0.827	15.910	116.841	96.638	106.090	87.746
82.968	0.725	0.753	15.910	116.533	87.792	106.019	79.871
83.693	0.795	0.828	16.166	117.664	97.443	106.419	88.131
84.488	0.512	0.533	16.166	117.376	62.573	106.277	56.656
85.000	0.272	0.283	16.166	117.220	33.181	106.671	30.195
85.272	0.795	0.829	16.401	118.359	98.137	107.216	88.898
86.067	0.795	0.829	16.401	118.079	97.904	107.241	88.918
86.863	0.078	0.081	16.401	117.925	9.608	108.046	8.803
86.941	0.795	0.840	18.664	129.903	109.061	109.314	91.776
87.736	0.650	0.686	18.664	129.408	88.832	109.951	75.476
88.387	0.795	0.854	21.358	142.212	121.457	111.921	95.587
89.182	0.589	0.632	21.358	141.411	89.429	112.422	71.096
89.771	0.795	0.873	24.280	153.492	133.935	114.584	99.985
90.566	0.513	0.563	24.280	152.341	85.784	113.910	64.144
91.080	0.795	0.893	27.008	161.641	144.308	115.671	103.268
91.875	0.125	0.140	27.008	160.537	22.507	115.517	16.195
92.000	0.499	0.560	27.008	159.730	89.460	116.796	65.414
92.499	0.795	0.915	29.614	166.461	152.297	118.515	108.431
93.294	0.524	0.602	29.614	164.267	98.923	120.043	72.291
93.818	0.795	0.939	32.130	168.750	158.500	122.062	114.648
94.613	0.593	0.700	32.130	165.941	116.214	123.176	86.264
95.206	0.794	0.960	34.252	167.610	160.920	124.005	119.055
96.000	0.657	0.795	34.252	164.243	130.546	123.168	97.899
96.657	0.795	0.982	35.945	163.706	160.840	122.975	120.822
97.452	0.795	0.982	35.945	159.634	156.839	119.003	116.919
98.248	0.044	0.055	35.945	157.484	8.611	118.562	6.483
98.292	0.708	0.874	35.944	155.557	136.024	118.150	103.314
99.000	0.795	0.982	35.944	151.609	148.953	116.958	114.910
99.795	0.077	0.095	35.944	149.268	14.109	117.628	11.118
99.872	0.795	0.982	35.944	146.926	144.351	118.561	116.483
100.667	0.735	0.908	35.944	142.818	129.621	118.018	107.113
101.402	0.795	0.982	35.943	138.709	136.276	118.012	115.942
102.198	0.716	0.884	35.943	134.651	119.089	117.394	103.826
102.914	0.795	0.982	35.942	130.592	128.300	117.124	115.069
103.709	0.683	0.843	35.942	126.624	106.803	114.252	96.368
104.392	0.795	0.982	35.941	122.655	120.501	113.814	111.815
105.187	0.313	0.386	35.941	119.680	46.231	112.124	43.312
105.500	0.382	0.472	35.941	117.755	55.608	111.080	52.456
105.882	0.795	0.982	35.940	114.409	112.398	109.883	107.952
106.678	0.693	0.856	35.940	110.181	94.319	109.361	93.617
107.371	0.795	0.982	35.939	105.953	104.090	109.515	107.589
108.166	0.702	0.866	35.939	101.702	88.120	105.471	91.386
108.868	0.795	0.982	35.938	97.450	95.736	102.624	100.819
109.663	0.699	0.863	35.938	93.206	80.459	101.902	87.965

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

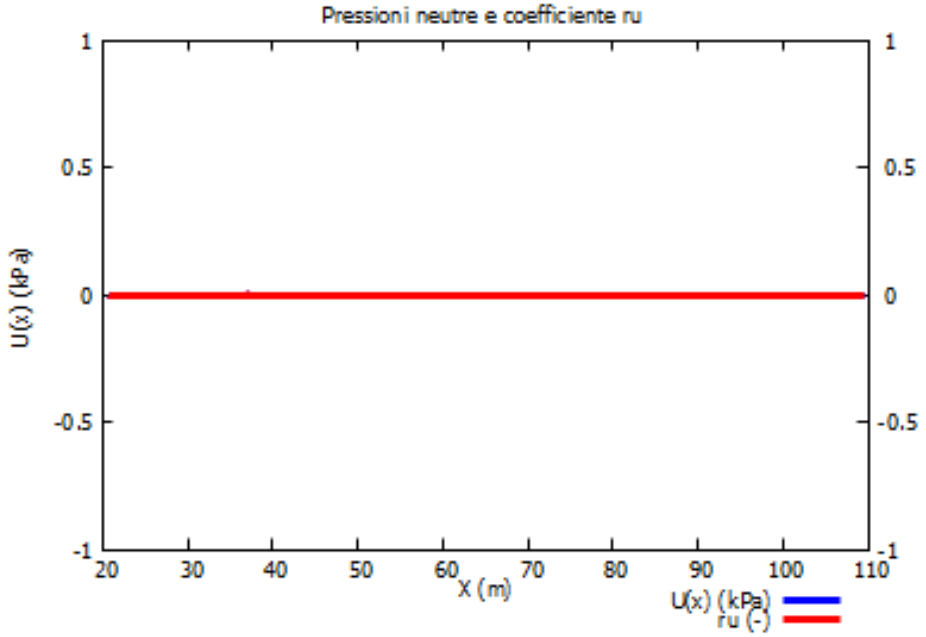
Fs minimo : 1.8725
Range Fs : 1.8725 1.9857
Differenza % Range Fs : 5.70
Coefficiente Sismico orizzontale - Kh: 0.0350
Coefficiente Sismico verticale - Kv: 0.0175

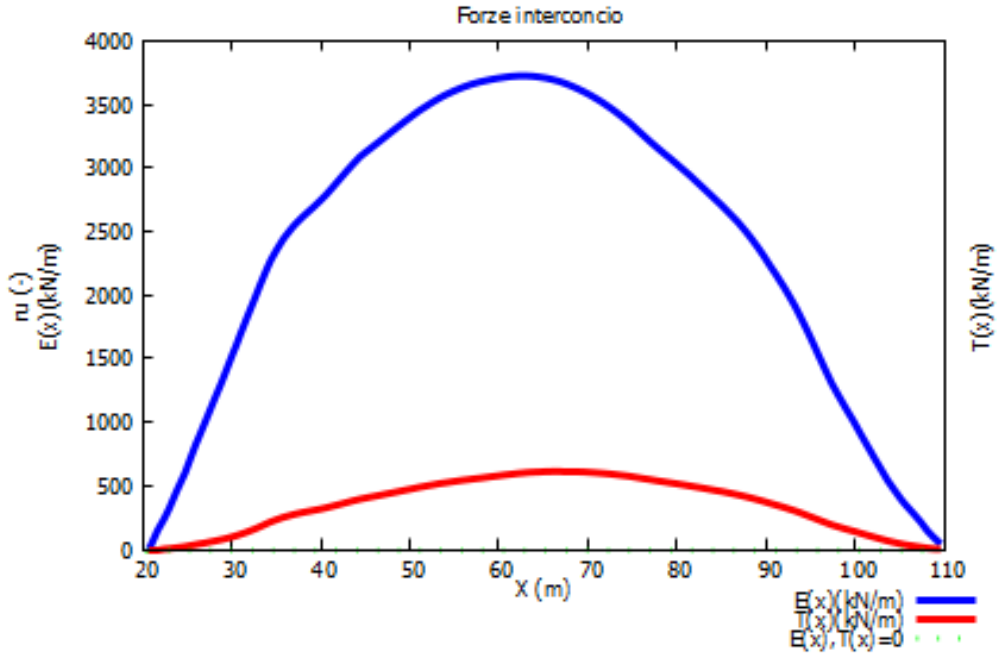
GENERAZIONE SUPERFICI RANDOM

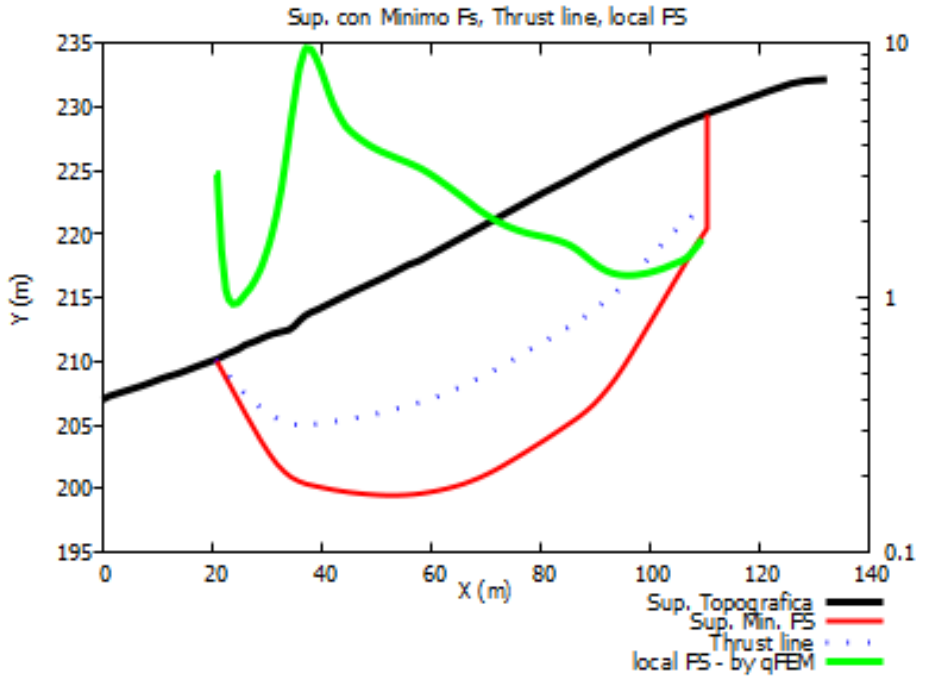
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 5.3
Range X inizio generazione : 2.7 - 121.9
Range X termine generazione : 15.9 - 129.9
Livello Y minimo considerato : 198.0

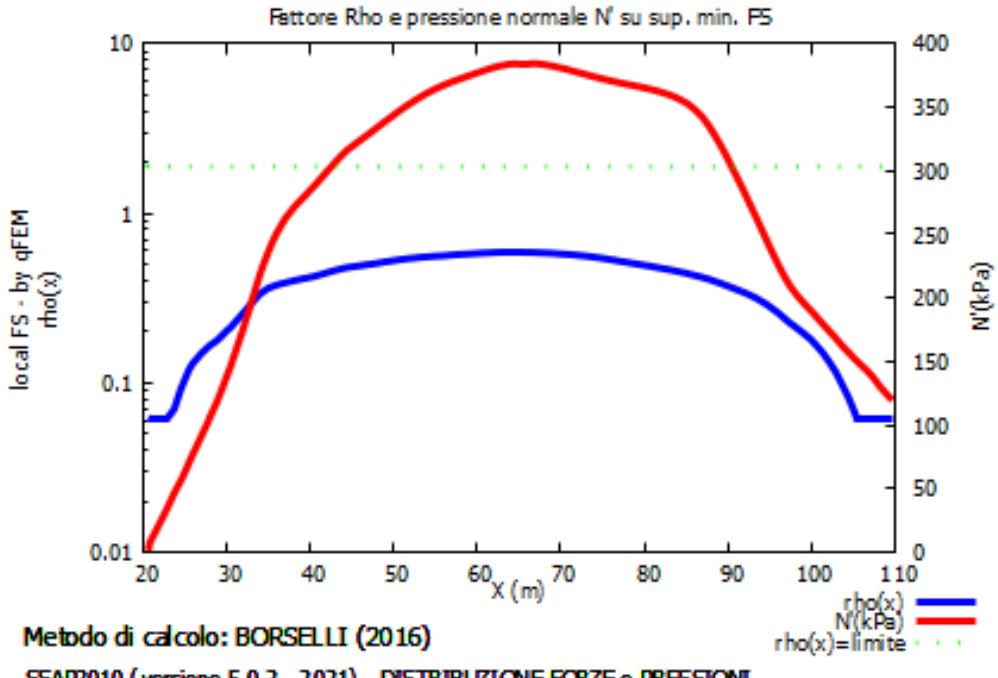
Parametri Geotecnici degli strati # ----------

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





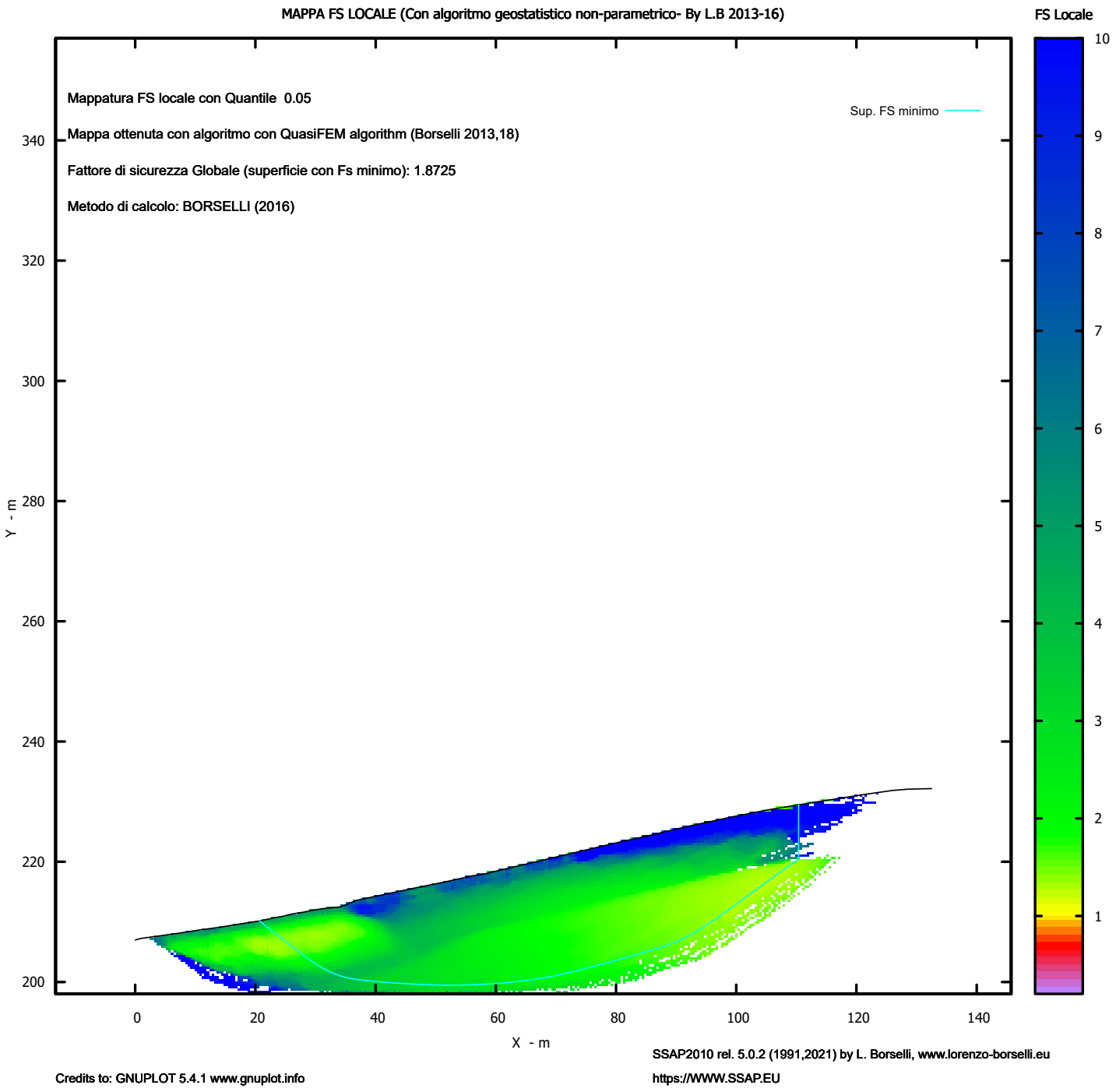




Metodo di calcolo: BORSELLI (2016)

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

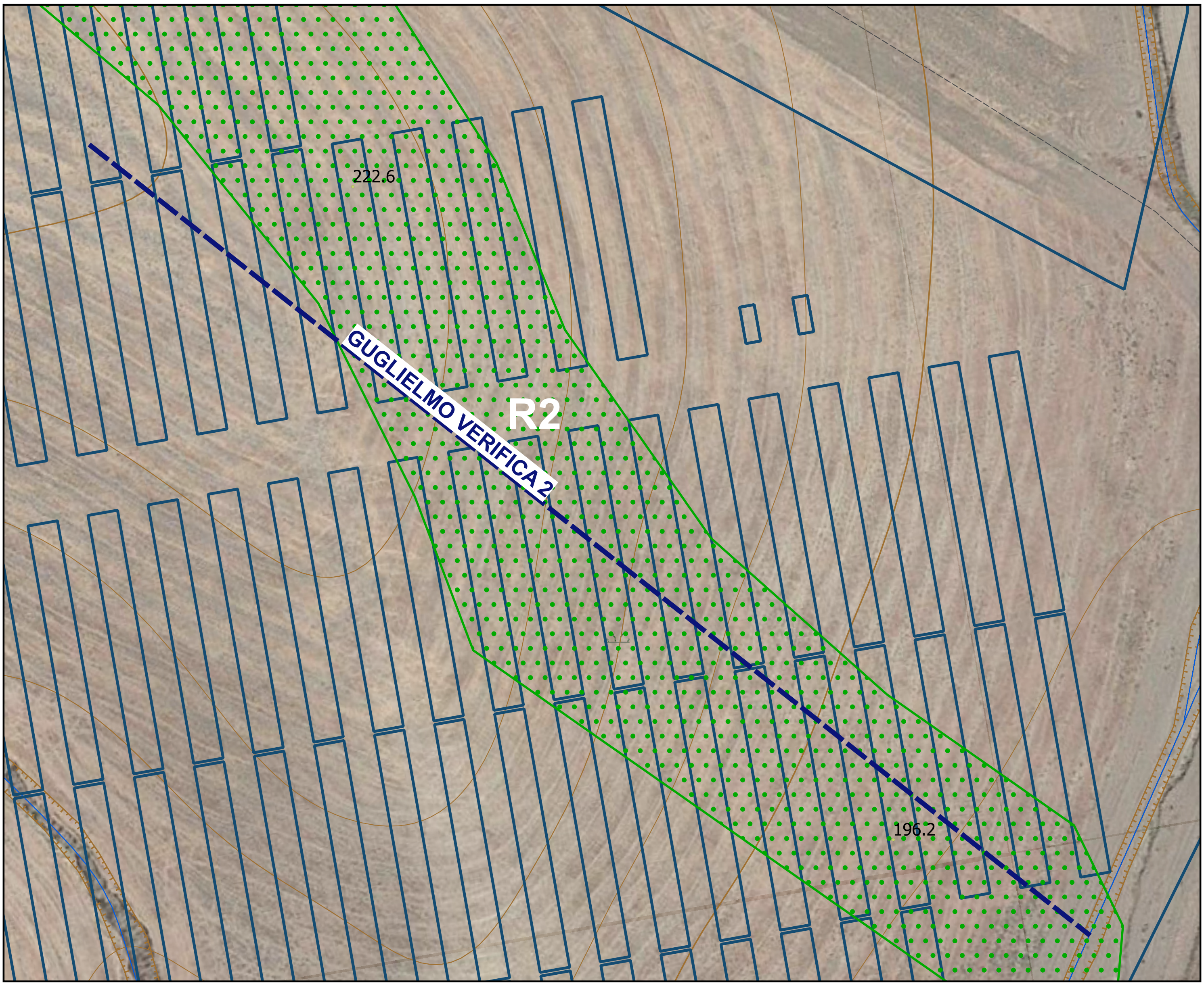
18/11/21 12:59


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): 1.8725
Metodo di calcolo: BORSELLI (2016)
Sup. FS minimo
Y - m
X - m
340
320
300
280
260
240
220
200
0
20
40
60
80
100
120
140
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

VERIFICA DI STABILITA' SEZIONE 2

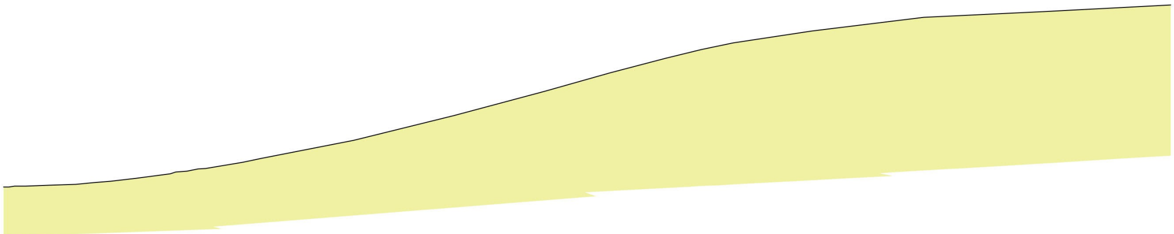
CONDIZIONE DRENATA

SEZIONE DI VERIFICA N. 2



0 10 20 m

N



PICCHETTO	DISTANZE PROGRESSIVE	DISTANZE PARZIALI	QUOTE
1	0		193.05
2	1	1	193.07
3	2	1	193.18
4	3	1	193.21
5	4	1	193.17
6	8.15	4.15	193.38
7	13	4.85	193.51
8	16.23	3.23	193.82
9	19.26	3.03	194.07
10	24	4.74	194.59
11	30	6	195.4
12	31	1	195.69
13	33	2	195.85
14	35	2	196.26
15	36.37	1.37	196.37
16	43	6.63	197.49
17	46.39	3.39	198.16
18	63	16.61	201.42
19	80.94	17.94	205.87
20	97.25	16.3	210.2
21	109.09	11.85	213.57
22	119	9.91	216.15
23	125.5	6.5	217.74
24	131.23	5.73	218.96
25	145.37	14.14	221.07
26	165.5	20.13	223.54
27	187.1	21.6	224.58
28	209.89	22.79	225.75

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 GUGLIELMO\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	193.05	-	-	-	-	-	-
1.00	193.07	-	-	-	-	-	-
2.00	193.18	-	-	-	-	-	-
3.00	193.21	-	-	-	-	-	-
4.00	193.17	-	-	-	-	-	-
8.15	193.38	-	-	-	-	-	-
13.00	193.51	-	-	-	-	-	-
16.23	193.82	-	-	-	-	-	-
19.26	194.07	-	-	-	-	-	-
24.00	194.59	-	-	-	-	-	-
30.00	195.40	-	-	-	-	-	-
31.00	195.69	-	-	-	-	-	-
33.00	195.85	-	-	-	-	-	-
35.00	196.26	-	-	-	-	-	-
36.37	196.37	-	-	-	-	-	-
43.00	197.49	-	-	-	-	-	-
46.39	198.16	-	-	-	-	-	-
63.00	201.42	-	-	-	-	-	-
80.94	205.87	-	-	-	-	-	-
97.25	210.20	-	-	-	-	-	-
109.09	213.57	-	-	-	-	-	-
119.00	216.15	-	-	-	-	-	-
125.50	217.74	-	-	-	-	-	-
131.23	218.96	-	-	-	-	-	-
145.37	221.07	-	-	-	-	-	-
165.50	223.54	-	-	-	-	-	-
187.10	224.58	-	-	-	-	-	-
209.89	225.75	-	-	-	-	-	-

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)*: 8.4 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 4.20 193.10
LIVELLO MINIMO CONSIDERATO (Ymin): 163.62
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 25.19 205.69
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) 2.2939 - Min. - X Y Lambda= 0.2883
47.42 198.36
55.82 193.56
59.66 191.49
62.15 190.33
64.13 189.60
66.17 189.10
67.93 188.84
69.91 188.74
72.10 188.80
74.93 189.03
77.38 189.28
79.63 189.56
81.77 189.88
83.93 190.27
86.02 190.70
88.18 191.20
90.40 191.77
92.80 192.44
95.08 193.10
97.30 193.77
99.47 194.46

101.66 195.18
103.83 195.92
106.03 196.70
108.28 197.52
110.63 198.41
112.86 199.29
115.05 200.19
117.19 201.11
119.37 202.09
121.52 203.10
123.71 204.16
125.95 205.28
128.31 206.50
130.55 207.70
132.75 208.91
134.90 210.14
137.09 211.42
139.51 212.90
142.23 214.61
146.10 217.10
148.47 218.66
148.47 221.45

Fattore di sicurezza (FS) 2.2943 - N.2 -- X Y Lambda= 0.2886
48.69 198.61
54.15 195.68
56.72 194.36
58.44 193.59
59.86 193.05
61.26 192.64
62.53 192.35
63.91 192.15
65.40 192.01
67.23 191.92
68.82 191.88
70.30 191.89
71.69 191.94
73.14 192.04
74.51 192.17
75.93 192.36
77.40 192.59
79.01 192.89
80.55 193.19
82.06 193.48
83.54 193.78
85.02 194.08
86.50 194.39
87.99 194.71
89.50 195.04
91.06 195.39
92.54 195.75
93.99 196.13
95.41 196.52
96.88 196.95
98.30 197.39
99.75 197.87
101.22 198.38
102.75 198.94
104.28 199.49
105.77 200.03
107.27 200.57
108.75 201.10
110.25 201.64
111.76 202.18
113.30 202.73

114.86	203.29
116.32	203.85
117.75	204.44
119.15	205.06
120.60	205.74
122.00	206.44
123.45	207.21
124.94	208.05
126.56	208.99
128.08	209.90
129.56	210.82
131.01	211.75
132.47	212.72
134.08	213.83
135.90	215.12
138.49	217.02
139.21	217.55
139.21	220.15

Fattore di sicurezza (FS) 2.2950 - N.3 -- X Y Lambda= 0.2820

46.16	198.11
54.69	193.66
58.60	191.74
61.15	190.66
63.19	189.99
65.28	189.54
67.09	189.31
69.11	189.25
71.34	189.34
74.16	189.60
76.65	189.87
78.97	190.16
81.18	190.49
83.40	190.86
85.56	191.26
87.77	191.72
90.03	192.23
92.44	192.81
94.75	193.39
97.01	193.98
99.24	194.59
101.47	195.21
103.71	195.86
105.98	196.54
108.30	197.26
110.74	198.04
113.00	198.81
115.19	199.62
117.32	200.47
119.52	201.41
121.66	202.39
123.86	203.46
126.13	204.63
128.58	205.95
130.90	207.23
133.16	208.51
135.37	209.81
137.61	211.15
140.08	212.69
142.86	214.46
146.80	217.05
150.03	219.19
150.03	221.64

Fattore di sicurezza (FS) 2.2974 - N.4 -- X Y Lambda= 0.2817

X	Y
44.29	197.75
52.52	193.54
56.22	191.76
58.58	190.82
60.42	190.29
62.36	189.99
63.98	189.92
65.83	190.04
67.89	190.34
70.55	190.89
72.97	191.40
75.23	191.89
77.41	192.38
79.53	192.86
81.65	193.36
83.78	193.87
85.94	194.41
88.15	194.97
90.29	195.53
92.40	196.10
94.50	196.70
96.61	197.32
98.71	197.96
100.83	198.63
102.99	199.34
105.23	200.09
107.38	200.84
109.50	201.61
111.58	202.39
113.70	203.20
115.79	204.04
117.93	204.92
120.12	205.86
122.43	206.86
124.57	207.85
126.65	208.87
128.68	209.92
130.77	211.06
133.05	212.39
135.64	213.98
139.37	216.37
141.67	217.87
141.67	220.52

Fattore di sicurezza (FS) 2.2991 - N.5 -- X Y Lambda= 0.2920

X	Y
47.07	198.29
53.00	195.29
55.77	193.96
57.62	193.19
59.14	192.66
60.65	192.27
61.99	192.02
63.46	191.86
65.03	191.78
66.94	191.77
68.68	191.78
70.32	191.81
71.91	191.86
73.49	191.93
75.06	192.01
76.65	192.12
78.29	192.25
80.01	192.41
81.62	192.59

83.19	192.79
84.73	193.01
86.30	193.27
87.84	193.56
89.42	193.89
91.05	194.25
92.81	194.67
94.43	195.10
96.01	195.54
97.54	196.00
99.11	196.51
100.64	197.04
102.20	197.62
103.80	198.24
105.49	198.94
107.14	199.60
108.75	200.25
110.35	200.87
111.94	201.49
113.53	202.10
115.14	202.70
116.76	203.30
118.42	203.90
120.02	204.51
121.60	205.12
123.16	205.75
124.75	206.41
126.32	207.09
127.93	207.81
129.58	208.57
131.34	209.40
132.94	210.20
134.49	211.03
135.99	211.89
137.55	212.85
139.23	213.96
141.17	215.31
143.96	217.36
145.37	218.42
145.37	221.07

Fattore di sicurezza (FS) 2.3030 - N.6 -- X Y Lambda= 0.2984

56.65	200.17
61.64	197.12
63.93	195.80
65.41	195.05
66.59	194.57
67.81	194.23
68.84	194.04
70.00	193.94
71.27	193.93
72.88	194.00
74.35	194.08
75.73	194.16
77.07	194.24
78.38	194.33
79.69	194.42
81.00	194.52
82.32	194.63
83.65	194.74
84.97	194.86
86.29	194.98
87.61	195.10
88.92	195.22
90.25	195.34

91.59 195.47
92.96 195.61
94.36 195.74
95.66 195.90
96.93 196.09
98.16 196.31
99.45 196.56
100.69 196.85
101.96 197.17
103.27 197.54
104.68 197.97
106.05 198.39
107.38 198.81
108.69 199.23
110.00 199.66
111.31 200.11
112.64 200.56
114.00 201.03
115.41 201.53
116.72 202.03
118.00 202.55
119.24 203.09
120.53 203.69
121.77 204.30
123.04 204.97
124.34 205.69
125.73 206.49
127.10 207.27
128.44 208.05
129.77 208.82
131.08 209.58
132.40 210.35
133.72 211.12
135.04 211.89
136.36 212.66
137.68 213.43
138.99 214.21
140.31 214.99
141.62 215.78
143.09 216.67
144.74 217.67
146.08 218.49
146.08 221.16

Fattore di sicurezza (FS) 2.3032 - N.7 -- X Y Lambda= 0.2927
50.96 199.06
57.93 195.74
61.13 194.31
63.22 193.52
64.90 193.03
66.62 192.72
68.10 192.58
69.75 192.56
71.53 192.67
73.75 192.92
75.80 193.15
77.74 193.36
79.63 193.56
81.47 193.74
83.33 193.93
85.20 194.10
87.12 194.28
89.09 194.46
90.92 194.66
92.70 194.90

94.44 195.18
96.25 195.52
97.99 195.90
99.79 196.34
101.65 196.83
103.67 197.42
105.57 197.99
107.42 198.58
109.22 199.17
111.05 199.81
112.84 200.46
114.66 201.14
116.50 201.86
118.41 202.63
120.29 203.40
122.15 204.16
124.01 204.92
125.85 205.68
127.72 206.45
129.61 207.23
131.54 208.04
133.53 208.88
135.35 209.70
137.12 210.56
138.82 211.47
140.63 212.50
142.55 213.71
144.77 215.19
147.99 217.46
150.32 219.14
150.32 221.68

Fattore di sicurezza (FS) 2.3032 - N.8 -- X Y Lambda= 0.2968
56.31 200.11
63.60 196.46
66.89 194.92
69.00 194.10
70.65 193.63
72.38 193.37
73.84 193.29
75.50 193.39
77.33 193.64
79.69 194.10
81.83 194.51
83.83 194.87
85.77 195.22
87.65 195.54
89.55 195.85
91.47 196.15
93.43 196.45
95.48 196.75
97.36 197.07
99.20 197.43
100.98 197.83
102.83 198.30
104.63 198.80
106.48 199.37
108.41 200.01
110.51 200.76
112.46 201.49
114.34 202.24
116.17 203.01
118.04 203.84
119.86 204.68
121.73 205.59

123.65 206.57
125.69 207.65
127.63 208.71
129.52 209.77
131.37 210.84
133.24 211.97
135.31 213.26
137.65 214.76
140.97 216.95
142.35 217.87
142.35 220.62

Fattore di sicurezza (FS) 2.3066 - N.9 -- X Y Lambda= 0.2762
43.96 197.68
50.34 194.00
53.27 192.40
55.17 191.50
56.70 190.93
58.26 190.53
59.60 190.30
61.10 190.20
62.74 190.21
64.81 190.34
66.69 190.47
68.45 190.61
70.14 190.76
71.81 190.93
73.47 191.12
75.15 191.32
76.87 191.55
78.66 191.80
80.36 192.06
82.02 192.35
83.65 192.65
85.32 192.99
86.95 193.35
88.61 193.74
90.29 194.16
92.06 194.63
93.78 195.10
95.48 195.57
97.16 196.04
98.84 196.52
100.51 197.01
102.20 197.51
103.90 198.03
105.63 198.56
107.32 199.07
109.00 199.56
110.67 200.04
112.35 200.51
114.03 200.97
115.73 201.42
117.46 201.87
119.27 202.32
120.95 202.78
122.59 203.27
124.19 203.78
125.84 204.36
127.45 204.96
129.09 205.62
130.79 206.33
132.61 207.14
134.34 207.93
136.03 208.73

137.69 209.53
139.36 210.36
141.02 211.20
142.69 212.07
144.39 212.98
146.14 213.94
147.85 214.86
149.54 215.75
151.20 216.62
152.88 217.47
154.75 218.40
156.84 219.41
157.74 219.84
157.74 222.59

Fattore di sicurezza (FS) 2.3073 - N.10 -- X Y Lambda= 0.2870
46.40 198.16
56.17 193.11
60.51 191.01
63.25 189.92
65.35 189.34
67.60 189.05
69.45 189.04
71.59 189.27
73.99 189.76
77.15 190.59
80.03 191.35
82.70 192.07
85.28 192.77
87.78 193.46
90.29 194.16
92.81 194.88
95.38 195.61
98.00 196.37
100.50 197.14
102.95 197.94
105.36 198.76
107.83 199.66
110.26 200.59
112.75 201.59
115.33 202.66
118.09 203.86
120.62 205.03
123.06 206.24
125.43 207.48
127.89 208.85
130.54 210.44
133.57 212.36
137.95 215.27
141.70 217.82
141.70 220.52

---------- 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	2.294	14665.7	6393.3	7633.1	Surplus
2	2.294	10991.2	4790.7	5721.4	Surplus
3	2.295	14810.6	6453.4	7711.9	Surplus
4	2.297	11836.9	5152.4	6169.3	Surplus
5	2.299	12384.8	5386.7	6459.5	Surplus
6	2.303	11108.8	4823.5	5802.9	Surplus
7	2.303	12587.0	5465.1	6575.4	Surplus

8	2.303	10377.8	4505.9	5421.3	Surplus
9	2.307	14766.5	6402.0	7724.3	Surplus
10	2.307	12658.5	5486.4	6623.5	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 5421.3

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)
47.424	0.793	-29.75	4.91	0.00	0.00	26.00	19.50
48.217	0.793	-29.75	14.73	0.00	0.00	26.00	19.50
49.009	0.793	-29.75	24.54	0.00	0.00	26.00	19.50
49.802	0.793	-29.75	34.36	0.00	0.00	26.00	19.50
50.594	0.793	-29.75	44.18	0.00	0.00	26.00	19.50
51.387	0.793	-29.75	54.00	0.00	0.00	26.00	19.50
52.180	0.793	-29.75	63.81	0.00	0.00	26.00	19.50
52.972	0.793	-29.75	73.63	0.00	0.00	26.00	19.50
53.765	0.793	-29.75	83.45	0.00	0.00	26.00	19.50
54.558	0.793	-29.75	93.27	0.00	0.00	26.00	19.50
55.350	0.474	-29.75	60.53	0.00	0.00	26.00	19.50
55.825	0.793	-28.37	108.76	0.00	0.00	26.00	19.50
56.617	0.793	-28.37	118.17	0.00	0.00	26.00	19.50
57.410	0.793	-28.37	127.59	0.00	0.00	26.00	19.50
58.203	0.793	-28.37	137.00	0.00	0.00	26.00	19.50
58.995	0.669	-28.37	123.01	0.00	0.00	26.00	19.50
59.665	0.793	-24.98	153.89	0.00	0.00	26.00	19.50
60.457	0.793	-24.98	162.36	0.00	0.00	26.00	19.50
61.250	0.793	-24.98	170.82	0.00	0.00	26.00	19.50
62.042	0.109	-24.98	24.22	0.00	0.00	26.00	19.50
62.152	0.793	-20.18	179.83	0.00	0.00	26.00	19.50
62.944	0.056	-20.18	12.89	0.00	0.00	26.00	19.50
63.000	0.793	-20.18	187.88	0.00	0.00	26.00	19.50
63.793	0.340	-20.18	82.89	0.00	0.00	26.00	19.50
64.132	0.793	-13.78	198.34	0.00	0.00	26.00	19.50
64.925	0.793	-13.78	204.65	0.00	0.00	26.00	19.50
65.717	0.454	-13.78	120.11	0.00	0.00	26.00	19.50
66.172	0.793	-8.45	213.95	0.00	0.00	26.00	19.50
66.964	0.793	-8.45	219.02	0.00	0.00	26.00	19.50
67.757	0.169	-8.45	47.36	0.00	0.00	26.00	19.50
67.926	0.793	-2.88	224.55	0.00	0.00	26.00	19.50
68.719	0.793	-2.88	228.36	0.00	0.00	26.00	19.50
69.511	0.396	-2.88	115.63	0.00	0.00	26.00	19.50
69.908	0.793	1.59	233.58	0.00	0.00	26.00	19.50
70.700	0.793	1.59	236.40	0.00	0.00	26.00	19.50
71.493	0.611	1.59	184.18	0.00	0.00	26.00	19.50
72.104	0.793	4.63	241.05	0.00	0.00	26.00	19.50
72.897	0.793	4.63	243.18	0.00	0.00	26.00	19.50
73.689	0.793	4.63	245.32	0.00	0.00	26.00	19.50
74.482	0.449	4.63	139.92	0.00	0.00	26.00	19.50
74.931	0.793	5.75	248.54	0.00	0.00	26.00	19.50
75.724	0.793	5.75	250.42	0.00	0.00	26.00	19.50
76.516	0.793	5.75	252.30	0.00	0.00	26.00	19.50
77.309	0.068	5.75	21.74	0.00	0.00	26.00	19.50

77.377	0.793	7.13	254.19	0.00	0.00	26.00	19.50
78.169	0.793	7.13	255.76	0.00	0.00	26.00	19.50
78.962	0.672	7.13	218.00	0.00	0.00	26.00	19.50
79.634	0.793	8.64	258.50	0.00	0.00	26.00	19.50
80.426	0.514	8.64	168.12	0.00	0.00	26.00	19.50
80.940	0.793	8.64	260.63	0.00	0.00	26.00	19.50
81.733	0.037	8.64	12.09	0.00	0.00	26.00	19.50
81.769	0.793	10.19	261.98	0.00	0.00	26.00	19.50
82.562	0.793	10.19	263.07	0.00	0.00	26.00	19.50
83.355	0.580	10.19	193.19	0.00	0.00	26.00	19.50
83.935	0.793	11.64	264.80	0.00	0.00	26.00	19.50
84.727	0.793	11.64	265.56	0.00	0.00	26.00	19.50
85.520	0.503	11.64	168.85	0.00	0.00	26.00	19.50
86.023	0.793	13.07	266.64	0.00	0.00	26.00	19.50
86.815	0.793	13.07	267.07	0.00	0.00	26.00	19.50
87.608	0.567	13.07	191.38	0.00	0.00	26.00	19.50
88.175	0.793	14.40	267.64	0.00	0.00	26.00	19.50
88.968	0.793	14.40	267.75	0.00	0.00	26.00	19.50
89.760	0.635	14.40	214.50	0.00	0.00	26.00	19.50
90.395	0.793	15.56	267.81	0.00	0.00	26.00	19.50
91.188	0.793	15.56	267.65	0.00	0.00	26.00	19.50
91.980	0.793	15.56	267.48	0.00	0.00	26.00	19.50
92.773	0.031	15.56	10.44	0.00	0.00	26.00	19.50
92.804	0.793	16.17	267.23	0.00	0.00	26.00	19.50
93.597	0.793	16.17	266.92	0.00	0.00	26.00	19.50
94.389	0.694	16.17	233.51	0.00	0.00	26.00	19.50
95.083	0.793	16.83	266.25	0.00	0.00	26.00	19.50
95.876	0.793	16.83	265.78	0.00	0.00	26.00	19.50
96.669	0.581	16.83	194.61	0.00	0.00	26.00	19.50
97.250	0.049	16.83	16.54	0.00	0.00	26.00	19.50
97.299	0.793	17.50	264.98	0.00	0.00	26.00	19.50
98.092	0.793	17.50	264.59	0.00	0.00	26.00	19.50
98.885	0.589	17.50	196.28	0.00	0.00	26.00	19.50
99.473	0.793	18.18	263.82	0.00	0.00	26.00	19.50
100.266	0.793	18.18	263.26	0.00	0.00	26.00	19.50
101.059	0.604	18.18	200.28	0.00	0.00	26.00	19.50
101.663	0.793	18.85	262.19	0.00	0.00	26.00	19.50
102.455	0.793	18.85	261.47	0.00	0.00	26.00	19.50
103.248	0.582	18.85	191.54	0.00	0.00	26.00	19.50
103.830	0.793	19.51	260.13	0.00	0.00	26.00	19.50
104.623	0.793	19.51	259.24	0.00	0.00	26.00	19.50
105.415	0.616	19.51	200.75	0.00	0.00	26.00	19.50
106.031	0.793	20.14	257.57	0.00	0.00	26.00	19.50
106.824	0.793	20.14	256.52	0.00	0.00	26.00	19.50
107.616	0.664	20.14	214.09	0.00	0.00	26.00	19.50
108.280	0.793	20.72	254.52	0.00	0.00	26.00	19.50
109.073	0.017	20.72	5.43	0.00	0.00	26.00	19.50
109.090	0.793	20.72	253.14	0.00	0.00	26.00	19.50
109.883	0.752	20.72	238.63	0.00	0.00	26.00	19.50
110.634	0.793	21.53	250.10	0.00	0.00	26.00	19.50
111.427	0.793	21.53	248.38	0.00	0.00	26.00	19.50
112.219	0.645	21.53	200.94	0.00	0.00	26.00	19.50
112.865	0.793	22.39	245.16	0.00	0.00	26.00	19.50
113.657	0.793	22.39	243.22	0.00	0.00	26.00	19.50
114.450	0.598	22.39	182.16	0.00	0.00	26.00	19.50
115.048	0.793	23.28	239.70	0.00	0.00	26.00	19.50
115.840	0.793	23.28	237.53	0.00	0.00	26.00	19.50
116.633	0.558	23.28	165.86	0.00	0.00	26.00	19.50
117.191	0.793	24.15	233.72	0.00	0.00	26.00	19.50
117.984	0.793	24.15	231.31	0.00	0.00	26.00	19.50
118.776	0.224	24.15	64.90	0.00	0.00	26.00	19.50
119.000	0.374	24.15	107.94	0.00	0.00	26.00	19.50
119.374	0.793	25.02	226.78	0.00	0.00	26.00	19.50
120.167	0.793	25.02	223.95	0.00	0.00	26.00	19.50
120.959	0.561	25.02	156.76	0.00	0.00	26.00	19.50
121.520	0.793	25.87	218.98	0.00	0.00	26.00	19.50

122.313	0.793	25.87	215.91	0.00	0.00	26.00	19.50
123.105	0.602	25.87	161.81	0.00	0.00	26.00	19.50
123.707	0.793	26.67	210.40	0.00	0.00	26.00	19.50
124.500	0.793	26.67	207.10	0.00	0.00	26.00	19.50
125.292	0.208	26.67	53.76	0.00	0.00	26.00	19.50
125.500	0.445	26.67	114.37	0.00	0.00	26.00	19.50
125.945	0.793	27.40	200.56	0.00	0.00	26.00	19.50
126.738	0.793	27.40	196.65	0.00	0.00	26.00	19.50
127.531	0.777	27.40	188.89	0.00	0.00	26.00	19.50
128.307	0.793	28.11	188.82	0.00	0.00	26.00	19.50
129.100	0.793	28.11	184.71	0.00	0.00	26.00	19.50
129.893	0.659	28.11	150.51	0.00	0.00	26.00	19.50
130.552	0.678	28.87	151.78	0.00	0.00	26.00	19.50
131.230	0.793	28.87	172.97	0.00	0.00	26.00	19.50
132.023	0.724	28.87	153.55	0.00	0.00	26.00	19.50
132.747	0.793	29.64	163.02	0.00	0.00	26.00	19.50
133.539	0.793	29.64	157.66	0.00	0.00	26.00	19.50
134.332	0.572	29.64	110.42	0.00	0.00	26.00	19.50
134.904	0.793	30.40	148.30	0.00	0.00	26.00	19.50
135.697	0.793	30.40	142.71	0.00	0.00	26.00	19.50
136.489	0.603	30.40	104.87	0.00	0.00	26.00	19.50
137.093	0.793	31.38	132.71	0.00	0.00	26.00	19.50
137.885	0.793	31.38	126.82	0.00	0.00	26.00	19.50
138.678	0.793	31.38	120.94	0.00	0.00	26.00	19.50
139.470	0.036	31.38	5.32	0.00	0.00	26.00	19.50
139.506	0.793	32.15	114.66	0.00	0.00	26.00	19.50
140.299	0.793	32.15	108.53	0.00	0.00	26.00	19.50
141.091	0.793	32.15	102.41	0.00	0.00	26.00	19.50
141.884	0.344	32.15	42.49	0.00	0.00	26.00	19.50
142.228	0.793	32.85	93.51	0.00	0.00	26.00	19.50
143.020	0.793	32.85	87.17	0.00	0.00	26.00	19.50
143.813	0.793	32.85	80.82	0.00	0.00	26.00	19.50
144.606	0.764	32.85	71.92	0.00	0.00	26.00	19.50
145.370	0.726	32.85	62.68	0.00	0.00	26.00	19.50
146.096	0.793	33.22	62.00	0.00	0.00	26.00	19.50
146.888	0.793	33.22	55.19	0.00	0.00	26.00	19.50
147.681	0.793	33.22	48.39	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 (--)
47.424	0.000	198.363	-0.377	0.0000000000E+000	0.0000000000E+000	1.1034948981E+000	0.076	7.486	6.670
48.217	0.153	198.063	-0.377	2.1213828175E+000	3.5583130014E-003	4.2492555085E+000	0.076	7.486	6.670
49.009	0.308	197.765	-0.370	6.7361987301E+000	5.8682761889E-002	9.0308632574E+000	0.076	4.883	4.297
49.802	0.472	197.476	-0.357	1.6437699990E+001	3.8590441091E-001	1.5334524845E+001	0.076	4.146	3.667
50.594	0.649	197.199	-0.342	3.1045493989E+001	1.3598874747E+000	1.9564074337E+001	0.076	3.889	3.494
51.387	0.836	196.933	-0.345	4.7451954709E+001	3.4950445029E+000	2.4229092338E+001	0.097	3.866	3.526
52.180	1.008	196.652	-0.335	6.9455041429E+001	7.8455943288E+000	3.5423724152E+001	0.171	3.985	3.652
52.972	1.212	196.403	-0.304	1.0360796725E+002	1.4176939121E+001	5.2147699368E+001	0.243	4.161	3.774
53.765	1.432	196.170	-0.295	1.5212299716E+002	2.2982720342E+001	6.2508277635E+001	0.312	4.352	3.851
54.558	1.651	195.936	-0.287	2.0270019167E+002	3.2211657888E+001	7.1220493168E+001	0.359	4.501	3.894
55.350	1.883	195.715	-0.273	2.6502639745E+002	4.3699158971E+001	8.6346219072E+001	0.404	4.664	3.925

55.825	2.030	195.591	-0.271	3.0818843281E+002	5.1589354778E+001	1.0289653127E+002	0.429	4.763	3.934
56.617	2.239	195.372	-0.276	4.0554683390E+002	6.9773548622E+001	1.3673282098E+002	0.478	4.913	3.913
57.410	2.449	195.153	-0.269	5.2494627503E+002	9.2706853418E+001	1.5866873147E+002	0.526	5.006	3.856
58.203	2.669	194.946	-0.250	6.5707892119E+002	1.1869965701E+002	1.6981528573E+002	0.567	5.027	3.776
58.995	2.909	194.757	-0.225	7.9414861172E+002	1.4625068032E+002	1.7105528335E+002	0.601	4.967	3.686
59.665	3.130	194.617	-0.200	9.0757272393E+002	1.6953349581E+002	1.7171491177E+002	0.624	4.870	3.610
60.457	3.348	194.466	-0.177	1.0457844672E+003	1.9884235619E+002	1.7030605528E+002	0.650	4.703	3.517
61.250	3.588	194.336	-0.149	1.1775530607E+003	2.2761261194E+002	1.6264142751E+002	0.673	4.512	3.431
62.042	3.850	194.229	-0.132	1.3036143330E+003	2.5636933388E+002	1.4721438286E+002	0.694	4.300	3.350
62.152	3.889	194.217	-0.099	1.3195248352E+003	2.6016599922E+002	1.4556746565E+002	0.697	4.268	3.339
62.944	4.103	194.140	-0.097	1.4348130009E+003	2.8818799226E+002	1.3526843083E+002	0.717	4.042	3.264
63.000	4.119	194.135	-0.072	1.4422998672E+003	2.9006141770E+002	1.3476587065E+002	0.719	4.026	3.258
63.793	4.354	194.079	-0.066	1.5515151847E+003	3.1802494719E+002	1.3981093792E+002	0.738	3.811	3.187
64.132	4.460	194.061	-0.043	1.5992812649E+003	3.3084279873E+002	1.3887652558E+002	0.747	3.715	3.155
64.925	4.625	194.030	-0.028	1.7060269656E+003	3.6043746711E+002	1.3231254310E+002	0.769	3.515	3.083
65.717	4.805	194.016	-0.010	1.8090317925E+003	3.9033472201E+002	1.2543027233E+002	0.790	3.338	3.014
66.172	4.918	194.018	0.014	1.8648267053E+003	4.0731856140E+002	1.2198146544E+002	0.802	3.245	2.976
66.964	5.051	194.033	0.030	1.9603275085E+003	4.3752144997E+002	1.1809742300E+002	0.824	3.096	2.909
67.757	5.200	194.065	0.042	2.0520424916E+003	4.6791949470E+002	1.1331216240E+002	0.846	2.964	2.844
67.926	5.235	194.074	0.066	2.0711087284E+003	4.7444598607E+002	1.1105347935E+002	0.851	2.937	2.830
68.719	5.329	194.128	0.081	2.1526378910E+003	5.0351326221E+002	9.7091163342E+001	0.873	2.829	2.769
69.511	5.443	194.203	0.099	2.2250240131E+003	5.3110254429E+002	8.5924129946E+001	0.893	2.737	2.711
69.908	5.507	194.246	0.115	2.2580125316E+003	5.4426388468E+002	7.8747942737E+001	0.903	2.696	2.683
70.700	5.577	194.339	0.128	2.3133363108E+003	5.6743888344E+002	6.7849571811E+001	0.922	2.628	2.633
71.493	5.665	194.449	0.147	2.3655721261E+003	5.9027394894E+002	6.4656153002E+001	0.939	2.564	2.585
72.104	5.745	194.545	0.161	2.4044965329E+003	6.0782138449E+002	6.0051186076E+001	0.953	2.516	2.548
72.897	5.810	194.675	0.169	2.4483479528E+003	6.2826850544E+002	5.3390929505E+001	0.969	2.464	2.505
73.689	5.884	194.813	0.173	2.4891353386E+003	6.4763357621E+002	4.7792065847E+001	0.984	2.417	2.465
74.482	5.956	194.949	0.173	2.5241110724E+003	6.6442177732E+002	4.1922436698E+001	0.997	2.378	2.430
74.931	5.998	195.028	0.179	2.5423750329E+003	6.7323492465E+002	3.9543659374E+001	1.003	2.358	2.413
75.724	6.061	195.171	0.183	2.5721369827E+003	6.8767027369E+002	3.5631181306E+001	1.014	2.326	2.384
76.516	6.129	195.318	0.183	2.5988599201E+003	7.0062952056E+002	3.1736335762E+001	1.023	2.299	2.359
77.309	6.192	195.461	0.181	2.6224475051E+003	7.1206854179E+002	2.8594165665E+001	1.030	2.275	2.337
77.377	6.198	195.474	0.187	2.6243860963E+003	7.1301434826E+002	2.8344458095E+001	1.031	2.273	2.335
78.169	6.247	195.622	0.186	2.6454698233E+003	7.2334200432E+002	2.4908476819E+001	1.038	2.251	2.315
78.962	6.294	195.769	0.185	2.6638726486E+003	7.3241446176E+002	2.1797200154E+001	1.044	2.232	2.298
79.634	6.335	195.893	0.192	2.6777069628E+003	7.3935352182E+002	1.9722660586E+001	1.048	2.216	2.285
80.426	6.371	196.050	0.199	2.6925252675E+003	7.4706829958E+002	1.7267976921E+001	1.054	2.198	2.270
80.940	6.396	196.153	0.197	2.7009176953E+003	7.5160021920E+002	1.5055928041E+001	1.057	2.186	2.261
81.733	6.430	196.307	0.195	2.7112762376E+003	7.5752311436E+002	1.2250158253E+001	1.061	2.170	2.248
81.769	6.432	196.314	0.210	2.7117241039E+003	7.5779078396E+002	1.2117775980E+001	1.061	2.170	2.247
82.562	6.456	196.481	0.217	2.7197098213E+003	7.6298849522E+002	8.9348655615E+000	1.065	2.153	2.235
83.355	6.491	196.659	0.221	2.7258882392E+003	7.6761511123E+002	5.8094959098E+000	1.068	2.137	2.223
83.935	6.513	196.785	0.224	2.7284151457E+003	7.7016924758E+002	3.2020963192E+000	1.070	2.127	2.215
84.727	6.531	196.966	0.234	2.7297024367E+003	7.7290838687E+002	2.9023260243E-001	1.073	2.113	2.204
85.520	6.557	197.155	0.240	2.7288752414E+003	7.7488407699E+002	-2.4875637230E+000	1.076	2.099	2.193
86.023	6.575	197.277	0.254	2.7271639470E+003	7.7566717736E+002	-4.5265561620E+000	1.077	2.090	2.187
86.815	6.598	197.484	0.265	2.7221727858E+003	7.7612177494E+002	-8.3650093400E+000	1.079	2.077	2.177
87.608	6.628	197.698	0.260	2.7139031851E+003	7.7537545524E+002	-1.1527748067E+001	1.080	2.065	2.166
88.175	6.636	197.837	0.254	2.7069198279E+003	7.7429382360E+002	-1.3230170879E+001	1.081	2.057	2.160
88.968	6.638	198.044	0.260	2.6954152491E+003	7.7193432688E+002	-1.5597811546E+001	1.081	2.047	2.151
89.760	6.641	198.250	0.260	2.6821931533E+003	7.6883147264E+002	-1.7494819299E+001	1.081	2.039	2.144
90.395	6.643	198.415	0.267	2.6706749780E+003	7.6587390339E+002	-1.9034914403E+001	1.080	2.033	2.138
91.188	6.639	198.632	0.273	2.6547077596E+003	7.6153443466E+002	-2.2119278623E+001	1.079	2.026	2.132
91.980	6.635	198.848	0.273	2.6356100457E+003	7.5606264269E+002	-2.3923747896E+001	1.078	2.020	2.126
92.773	6.631	199.065	0.273	2.6167822642E+003	7.5048671979E+002	-2.5714022600E+001	1.076	2.016	2.121
92.804	6.631	199.073	0.280	2.6159839237E+003	7.5024729707E+002	-2.5783948364E+001	1.076	2.016	2.121
93.597	6.623	199.296	0.280	2.5956814814E+003	7.4408814483E+002	-2.6065253055E+001	1.074	2.012	2.116
94.389	6.615	199.518	0.280	2.5746635738E+003	7.3762045480E+002	-2.6629100420E+001	1.072	2.009	2.112
95.083	6.608	199.712	0.284	2.5561091820E+003	7.3184186837E+002	-2.7545885085E+001	1.070	2.006	2.109
95.876	6.597	199.940	0.281	2.5335348923E+003	7.2475459965E+002	-2.8612198067E+001	1.068	2.003	2.105
96.669	6.574	200.157	0.270	2.5107512477E+003	7.1754359840E+002	-2.8820326302E+001	1.065	2.001	2.102
97.250	6.552	200.310	0.266	2.4939663240E+003	7.1218797982E+002	-3.1408934784E+001	1.063	1.999	2.100
97.299	6.551	200.325	0.283	2.4924031995E+003	7.1168636887E+002	-3.1635966246E+001	1.063	1.999	2.099
98.092	6.525	200.549	0.290	2.4671793439E+003	7.0353641300E+002	-3.3019096624E+001	1.059	1.996	2.096
98.885	6.510	200.784	0.289	2.4400591604E+003	6.9467208493E+002	-3.3356494782E+001	1.056	1.994	2.091

99.473	6.488	200.947	0.288	2.4207954677E+003	6.8829376946E+002	-3.3970820006E+001	1.053	1.992	2.088
100.266	6.462	201.181	0.300	2.3925328130E+003	6.7882570137E+002	-3.6618171895E+001	1.048	1.990	2.083
101.059	6.443	201.423	0.306	2.3627459382E+003	6.6873263168E+002	-3.8064422745E+001	1.043	1.987	2.078
101.663	6.430	201.608	0.318	2.3395268022E+003	6.6078566192E+002	-3.9838279089E+001	1.039	1.985	2.074
102.455	6.418	201.867	0.340	2.3064891887E+003	6.4939697783E+002	-4.3837206292E+001	1.033	1.983	2.068
103.248	6.427	202.147	0.347	2.2700331856E+003	6.3677581381E+002	-4.5499188445E+001	1.027	1.980	2.061
103.830	6.425	202.344	0.334	2.2437613530E+003	6.2766806966E+002	-4.5076179941E+001	1.022	1.979	2.056
104.623	6.407	202.606	0.329	2.2080972313E+003	6.1534075194E+002	-4.5021002277E+001	1.015	1.977	2.051
105.415	6.385	202.865	0.319	2.1723911052E+003	6.0305419500E+002	-4.4022882509E+001	1.008	1.975	2.046
106.031	6.357	203.055	0.312	2.1457771536E+003	5.9394573241E+002	-4.3925687636E+001	1.003	1.974	2.042
106.824	6.315	203.304	0.313	2.1102472495E+003	5.8184910790E+002	-4.4924127441E+001	0.996	1.974	2.039
107.616	6.271	203.551	0.303	2.0745604782E+003	5.6974217972E+002	-4.4026570153E+001	0.989	1.973	2.036
108.280	6.223	203.746	0.298	2.0458801784E+003	5.6002740882E+002	-4.4036905976E+001	0.983	1.973	2.034
109.073	6.163	203.986	0.302	2.0101754354E+003	5.4785952930E+002	-4.6642095571E+001	0.976	1.973	2.032
109.090	6.161	203.991	0.304	2.0093842253E+003	5.4758806102E+002	-4.6666185586E+001	0.976	1.973	2.032
109.883	6.103	204.232	0.303	1.9727675240E+003	5.3497837619E+002	-4.6429682660E+001	0.968	1.973	2.030
110.634	6.046	204.459	0.314	1.9377067039E+003	5.2277644129E+002	-4.8595823267E+001	0.961	1.973	2.029
111.427	5.990	204.716	0.327	1.8975622531E+003	5.0865945136E+002	-5.1458818366E+001	0.951	1.973	2.027
112.219	5.939	204.978	0.329	1.8561308075E+003	4.9397050520E+002	-5.2400012412E+001	0.941	1.973	2.026
112.865	5.896	205.190	0.358	1.8222501460E+003	4.8188864131E+002	-5.6700820709E+001	0.932	1.973	2.024
113.657	5.872	205.493	0.381	1.7732223279E+003	4.6449069364E+002	-6.1866921004E+001	0.918	1.974	2.023
114.450	5.846	205.793	0.374	1.7241746422E+003	4.4715851742E+002	-6.0937578177E+001	0.905	1.975	2.022
115.048	5.819	206.012	0.358	1.6881706300E+003	4.3454092845E+002	-5.9385605315E+001	0.894	1.976	2.022
115.840	5.757	206.291	0.342	1.6419841495E+003	4.1860590370E+002	-5.6912243862E+001	0.882	1.977	2.022
116.633	5.679	206.554	0.327	1.5979496056E+003	4.0366220835E+002	-5.4459849237E+001	0.869	1.979	2.023
117.191	5.618	206.733	0.324	1.5680017232E+003	3.9365496862E+002	-5.4311243928E+001	0.861	1.981	2.025
117.984	5.522	206.992	0.324	1.5242523474E+003	3.7925112556E+002	-5.4734591131E+001	0.849	1.983	2.028
118.776	5.420	207.246	0.319	1.4812328568E+003	3.6528340944E+002	-5.3446185599E+001	0.837	1.987	2.031
119.000	5.390	207.316	0.310	1.4693204644E+003	3.6143823571E+002	-5.2952780329E+001	0.834	1.988	2.032
119.374	5.337	207.431	0.344	1.4496835099E+003	3.5516010951E+002	-5.5396174538E+001	0.829	1.989	2.034
120.167	5.253	207.717	0.362	1.4009406038E+003	3.3966059494E+002	-6.1787196138E+001	0.815	1.995	2.040
120.959	5.172	208.005	0.359	1.3517343912E+003	3.2412840316E+002	-6.1040303521E+001	0.801	2.000	2.047
121.520	5.108	208.204	0.359	1.3179083967E+003	3.1352455410E+002	-6.0938132154E+001	0.791	2.005	2.051
122.313	5.011	208.491	0.366	1.2688976079E+003	2.9826683222E+002	-6.2289312786E+001	0.776	2.011	2.059
123.105	4.919	208.783	0.364	1.2191632897E+003	2.8289821119E+002	-6.1555050286E+001	0.760	2.019	2.067
123.707	4.843	208.998	0.367	1.1826784495E+003	2.7171035614E+002	-6.1738662354E+001	0.748	2.025	2.073
124.500	4.741	209.294	0.377	1.1326068273E+003	2.5649396330E+002	-6.3532356477E+001	0.731	2.033	2.081
125.292	4.644	209.595	0.375	1.0819627881E+003	2.4126706977E+002	-6.0062376505E+001	0.713	2.043	2.089
125.500	4.613	209.669	0.335	1.0696883505E+003	2.3762053909E+002	-5.7568566782E+001	0.709	2.045	2.091
125.945	4.535	209.814	0.345	1.0454701778E+003	2.3049722530E+002	-5.5934588307E+001	0.701	2.050	2.095
126.738	4.405	210.095	0.362	9.9893772038E+002	2.1691786750E+002	-5.9664280612E+001	0.684	2.059	2.103
127.531	4.287	210.388	0.369	9.5088644416E+002	2.0301670507E+002	-6.0330147825E+001	0.666	2.070	2.111
128.307	4.171	210.675	0.382	9.0425649719E+002	1.8966220435E+002	-6.1669932375E+001	0.648	2.080	2.118
129.100	4.060	210.988	0.399	8.5405938024E+002	1.7543240224E+002	-6.3640424280E+001	0.627	2.091	2.125
129.893	3.957	211.308	0.401	8.0336951961E+002	1.6120747941E+002	-6.3064786608E+001	0.604	2.103	2.132
130.552	3.867	211.570	0.409	7.6227681147E+002	1.4982187907E+002	-6.3489767022E+001	0.584	2.113	2.138
131.230	3.777	211.855	0.415	7.1840759725E+002	1.3784735123E+002	-6.3624907191E+001	0.562	2.124	2.144
132.023	3.667	212.181	0.395	6.6895883176E+002	1.2459047478E+002	-5.8977109124E+001	0.537	2.137	2.151
132.747	3.541	212.454	0.386	6.2850118242E+002	1.1404034314E+002	-5.6210784405E+001	0.516	2.149	2.157
133.539	3.402	212.766	0.407	5.8364486860E+002	1.0268972074E+002	-5.7591021246E+001	0.492	2.163	2.165
134.332	3.284	213.099	0.414	5.3720411558E+002	9.1359943894E+001	-5.6431276618E+001	0.466	2.181	2.176
134.904	3.190	213.330	0.408	5.0582189793E+002	8.3917737564E+001	-5.4605576387E+001	0.448	2.193	2.184
135.697	3.050	213.656	0.421	4.6283388749E+002	7.4028908440E+001	-5.4470478190E+001	0.423	2.213	2.197
136.489	2.927	213.998	0.425	4.1947172076E+002	6.4463092679E+001	-5.2471247955E+001	0.396	2.235	2.213
137.093	2.824	214.248	0.410	3.8884424316E+002	5.7949128939E+001	-4.9515231668E+001	0.376	2.252	2.226
137.885	2.662	214.570	0.403	3.5090366875E+002	5.0170627455E+001	-4.6502879421E+001	0.351	2.275	2.243
138.678	2.496	214.888	0.396	3.1512482650E+002	4.3099514185E+001	-4.3543891676E+001	0.326	2.299	2.259
139.470	2.323	215.198	0.392	2.8187503369E+002	3.6785055014E+001	-4.2017024569E+001	0.301	2.321	2.273
139.506	2.316	215.212	0.399	2.8037250772E+002	3.6505531148E+001	-4.1937914362E+001	0.300	2.322	2.274
140.299	2.134	215.528	0.405	2.4857541086E+002	3.0760471368E+001	-3.9510228513E+001	0.275	2.340	2.282
141.091	1.961	215.854	0.411	2.1773830025E+002	2.5433233974E+001	-3.7542643139E+001	0.250	2.352	2.282
141.884	1.788	216.179	0.406	1.8906034886E+002	2.0755913439E+001	-3.4044852803E+001	0.224	2.363	2.280
142.228	1.709	216.316	0.419	1.7767920226E+002	1.8980594320E+001	-3.4295880156E+001	0.214	2.369	2.279
143.020	1.537	216.655	0.456	1.4834333941E+002	1.4277031009E+001	-3.7909220696E+001	0.180	2.376	2.268
143.813	1.408	217.038	0.480	1.1758301746E+002	9.5942499372E+000	-3.6628318242E+001	0.139	2.369	2.236
144.606	1.273	217.416	0.498	9.0277725251E+001	5.7787384961E+000	-3.3974841873E+001	0.096	2.335	2.171

145.370	1.177	217.813	0.487	6.4658598716E+001	2.6496357791E+000	-2.9171456710E+001	0.076	2.265	2.064
146.096	1.037	218.142	0.474	4.6483060387E+001	1.0774850458E+000	-2.4095427638E+001	0.076	2.163	1.938
146.888	0.909	218.532	0.512	2.8206113070E+001	2.9913929870E-001	-2.1747056527E+001	0.076	2.048	1.804
147.681	0.810	218.953	0.512	1.2008199022E+001	5.4609275822E-002	-1.7792673010E+001	0.076	2.131	1.866

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)
47.424	0.793	0.913	-29.753	-2.505	-2.287	21.828	19.929
48.217	0.793	0.913	-29.753	-7.515	-6.861	26.561	24.250
49.009	0.793	0.913	-29.753	-12.524	-11.435	31.671	28.915
49.802	0.793	0.913	-29.753	-17.534	-16.008	37.422	34.166
50.594	0.793	0.913	-29.753	-22.544	-20.582	44.052	40.220
51.387	0.793	0.913	-29.753	-27.554	-25.156	52.487	47.920
52.180	0.793	0.913	-29.753	-32.563	-29.730	60.520	55.254
52.972	0.793	0.913	-29.753	-37.573	-34.304	69.397	63.359
53.765	0.793	0.913	-29.753	-42.583	-38.878	74.765	68.260
54.558	0.793	0.913	-29.753	-47.593	-43.452	83.273	76.028
55.350	0.474	0.547	-29.753	-51.597	-28.200	89.882	49.124
55.825	0.793	0.901	-28.370	-53.650	-48.330	102.959	92.748
56.617	0.793	0.901	-28.370	-58.294	-52.513	115.537	104.079
57.410	0.793	0.901	-28.370	-62.938	-56.696	125.266	112.843
58.203	0.793	0.901	-28.370	-67.581	-60.879	132.463	119.326
58.995	0.669	0.761	-28.370	-71.864	-54.662	136.716	103.990
59.665	0.793	0.874	-24.984	-68.746	-60.115	145.861	127.549
60.457	0.793	0.874	-24.984	-72.528	-63.423	149.342	130.593
61.250	0.793	0.874	-24.984	-76.310	-66.730	153.670	134.378
62.042	0.109	0.121	-24.984	-78.462	-9.460	154.176	18.589
62.152	0.793	0.844	-20.184	-66.478	-56.140	159.689	134.856
62.944	0.056	0.059	-20.184	-67.904	-4.026	159.832	9.475
63.000	0.793	0.844	-20.184	-69.452	-58.652	164.020	138.514
63.793	0.340	0.362	-20.184	-71.530	-25.877	170.004	61.501
64.132	0.793	0.816	-13.784	-49.641	-40.514	172.599	140.865
64.925	0.793	0.816	-13.784	-51.220	-41.803	176.670	144.187
65.717	0.454	0.468	-13.784	-52.462	-24.535	179.250	83.832
66.172	0.793	0.801	-8.453	-30.005	-24.045	179.868	144.135
66.964	0.793	0.801	-8.453	-30.717	-24.615	183.137	146.755
67.757	0.169	0.171	-8.453	-31.148	-5.323	185.211	31.649
67.926	0.793	0.794	-2.876	-4.305	-3.417	179.621	142.553
68.719	0.793	0.794	-2.876	-4.378	-3.475	180.844	143.524
69.511	0.396	0.397	-2.876	-4.433	-1.759	181.638	72.089
69.908	0.793	0.793	1.590	18.478	14.652	175.369	139.057
70.700	0.793	0.793	1.590	18.701	14.829	176.918	140.285
71.493	0.611	0.611	1.590	18.898	11.553	178.410	109.068
72.104	0.793	0.795	4.629	35.038	27.863	174.179	138.512
72.897	0.793	0.795	4.629	35.348	28.110	175.071	139.221
73.689	0.793	0.795	4.629	35.659	28.357	175.398	139.481
74.482	0.449	0.451	4.629	35.902	16.174	175.952	79.267
74.931	0.793	0.797	5.753	42.135	33.567	174.990	139.405
75.724	0.793	0.797	5.753	42.454	33.821	175.660	139.939

76.516	0.793	0.797	5.753	42.774	34.075	176.316	140.461
77.309	0.068	0.068	5.753	42.947	2.937	176.802	12.090
77.377	0.793	0.799	7.133	50.566	40.393	175.401	140.113
78.169	0.793	0.799	7.133	50.878	40.642	176.036	140.620
78.962	0.672	0.677	7.133	51.167	34.641	176.691	119.623
79.634	0.793	0.802	8.635	59.568	47.757	175.475	140.682
80.426	0.514	0.519	8.635	59.801	31.060	175.958	91.391
80.940	0.793	0.802	8.635	60.061	48.152	176.446	141.461
81.733	0.037	0.037	8.635	60.236	2.234	176.877	6.561
81.769	0.793	0.805	10.190	68.758	55.374	175.153	141.057
82.562	0.793	0.805	10.190	69.046	55.605	175.750	141.538
83.355	0.580	0.589	10.190	69.295	40.835	176.207	103.837
83.935	0.793	0.809	11.636	77.213	62.486	174.738	141.409
84.727	0.793	0.809	11.636	77.435	62.665	175.170	141.759
85.520	0.503	0.513	11.636	77.616	39.844	175.521	90.104
86.023	0.793	0.814	13.072	85.285	69.398	173.890	141.498
86.815	0.793	0.814	13.072	85.421	69.509	174.201	141.751
87.608	0.567	0.582	13.072	85.538	49.811	174.454	101.589
88.175	0.793	0.818	14.399	92.415	75.626	172.898	141.489
88.968	0.793	0.818	14.399	92.453	75.658	173.051	141.614
89.760	0.635	0.655	14.399	92.488	60.609	173.180	113.489
90.395	0.793	0.823	15.565	98.312	80.891	171.707	141.282
91.188	0.793	0.823	15.565	98.250	80.841	171.813	141.369
91.980	0.793	0.823	15.565	98.189	80.791	171.737	141.306
92.773	0.031	0.032	15.565	98.157	3.154	171.786	5.520
92.804	0.793	0.825	16.174	101.079	83.420	170.912	141.053
93.597	0.793	0.825	16.174	100.960	83.322	170.799	140.960
94.389	0.694	0.723	16.174	100.849	72.895	170.661	123.355
95.083	0.793	0.828	16.829	103.855	86.002	169.700	140.528
95.876	0.793	0.828	16.829	103.671	85.850	169.466	140.334
96.669	0.581	0.607	16.829	103.511	62.860	169.259	102.788
97.250	0.049	0.052	16.829	103.441	5.342	169.335	8.744
97.299	0.793	0.831	17.504	106.538	88.545	168.370	139.935
98.092	0.793	0.831	17.504	106.379	88.414	168.346	139.915
98.885	0.589	0.617	17.504	106.242	65.589	168.081	103.766
99.473	0.793	0.834	18.183	109.192	91.098	167.211	139.503
100.266	0.793	0.834	18.183	108.960	90.904	167.093	139.404
101.059	0.604	0.636	18.183	108.756	69.156	166.923	106.143
101.663	0.793	0.838	18.850	111.509	93.395	166.069	139.092
102.455	0.793	0.838	18.850	111.201	93.136	166.086	139.105
103.248	0.582	0.615	18.850	110.933	68.228	165.670	101.894
103.830	0.793	0.841	19.507	113.503	95.445	164.442	138.279
104.623	0.793	0.841	19.507	113.115	95.118	163.946	137.863
105.415	0.616	0.653	19.507	112.769	73.658	163.315	106.673
106.031	0.793	0.844	20.138	115.065	97.143	162.169	136.910
106.824	0.793	0.844	20.138	114.596	96.748	161.611	136.439
107.616	0.664	0.707	20.138	114.166	80.745	160.894	113.794
108.280	0.793	0.847	20.724	116.110	98.400	159.794	135.421
109.073	0.017	0.018	20.724	115.831	2.099	159.690	2.894
109.090	0.793	0.847	20.724	115.481	97.867	159.247	134.957
109.883	0.752	0.804	20.724	114.811	92.256	158.575	127.423
110.634	0.793	0.852	21.530	117.273	99.927	157.259	133.999
111.427	0.793	0.852	21.530	116.469	99.241	156.619	133.453
112.219	0.645	0.694	21.530	115.739	80.286	155.871	108.125
112.865	0.793	0.857	22.390	118.190	101.320	155.188	133.037
113.657	0.793	0.857	22.390	117.255	100.518	154.151	132.148
114.450	0.598	0.647	22.390	116.435	75.281	152.972	98.903
115.048	0.793	0.863	23.276	118.710	102.430	150.558	129.910
115.840	0.793	0.863	23.276	117.634	101.502	148.921	128.498
116.633	0.558	0.607	23.276	116.718	70.874	147.590	89.620
117.191	0.793	0.869	24.151	118.673	103.087	145.544	126.429
117.984	0.793	0.869	24.151	117.452	102.026	144.084	125.161
118.776	0.224	0.245	24.151	116.669	28.624	143.106	35.109
119.000	0.374	0.410	24.151	116.185	47.609	142.451	58.372
119.374	0.793	0.875	25.015	117.860	103.090	141.580	123.838
120.167	0.793	0.875	25.015	116.385	101.800	140.189	122.621

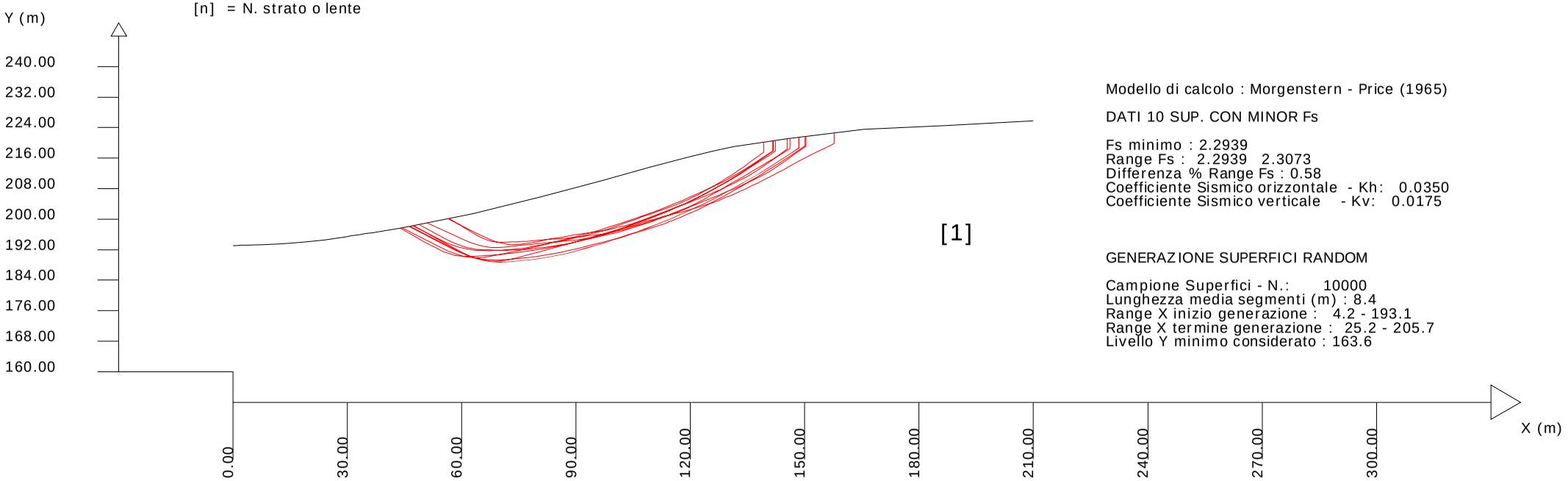
120.959	0.561	0.619	25.015	115.126	71.260	138.654	85.824
121.520	0.793	0.881	25.865	116.281	102.429	136.482	120.224
122.313	0.793	0.881	25.865	114.650	100.993	135.049	118.962
123.105	0.602	0.669	25.865	113.216	75.687	133.326	89.131
123.707	0.793	0.887	26.669	113.884	101.015	131.252	116.420
124.500	0.793	0.887	26.669	112.101	99.433	129.668	115.015
125.292	0.208	0.233	26.669	110.976	25.811	127.781	29.719
125.500	0.445	0.498	26.669	110.179	54.913	126.248	62.921
125.945	0.793	0.893	27.403	110.369	98.539	124.477	111.135
126.738	0.793	0.893	27.403	108.219	96.620	122.842	109.675
127.531	0.777	0.875	27.403	106.092	92.804	120.811	105.680
128.307	0.793	0.899	28.113	105.494	94.802	118.504	106.494
129.100	0.793	0.899	28.113	103.199	92.740	116.570	104.756
129.893	0.659	0.747	28.113	101.097	75.569	114.414	85.523
130.552	0.678	0.774	28.866	100.625	77.925	112.119	86.826
131.230	0.793	0.905	28.866	98.118	88.805	109.518	99.124
132.023	0.724	0.827	28.866	95.328	78.834	105.957	87.624
132.747	0.793	0.912	29.637	93.837	85.573	102.616	93.579
133.539	0.793	0.912	29.637	90.748	82.756	100.155	91.335
134.332	0.572	0.658	29.637	88.090	57.961	97.260	63.995
134.904	0.793	0.919	30.399	86.533	79.522	93.959	86.346
135.697	0.793	0.919	30.399	83.270	76.523	91.192	83.802
136.489	0.603	0.699	30.399	80.396	56.230	88.172	61.669
137.093	0.793	0.928	31.376	78.699	73.064	84.273	78.238
137.885	0.793	0.928	31.376	75.207	69.822	81.095	75.288
138.678	0.793	0.928	31.376	71.715	66.580	77.876	72.300
139.470	0.036	0.042	31.376	69.890	2.927	76.426	3.201
139.506	0.793	0.936	32.147	68.800	64.408	73.923	69.204
140.299	0.793	0.936	32.147	65.124	60.966	70.919	66.392
141.091	0.793	0.936	32.147	61.448	57.525	67.716	63.392
141.884	0.344	0.406	32.147	58.813	23.870	65.318	26.511
142.228	0.793	0.944	32.851	56.679	53.477	63.353	59.774
143.020	0.793	0.944	32.851	52.831	49.847	60.640	57.215
143.813	0.793	0.944	32.851	48.984	46.217	57.178	53.949
144.606	0.764	0.910	32.851	45.205	41.129	54.027	49.157
145.370	0.726	0.864	32.851	41.494	35.846	50.077	43.260
146.096	0.793	0.948	33.222	37.766	35.783	46.283	43.853
146.888	0.793	0.948	33.222	33.621	31.856	42.942	40.687
147.681	0.793	0.948	33.222	29.476	27.928	39.908	37.813

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

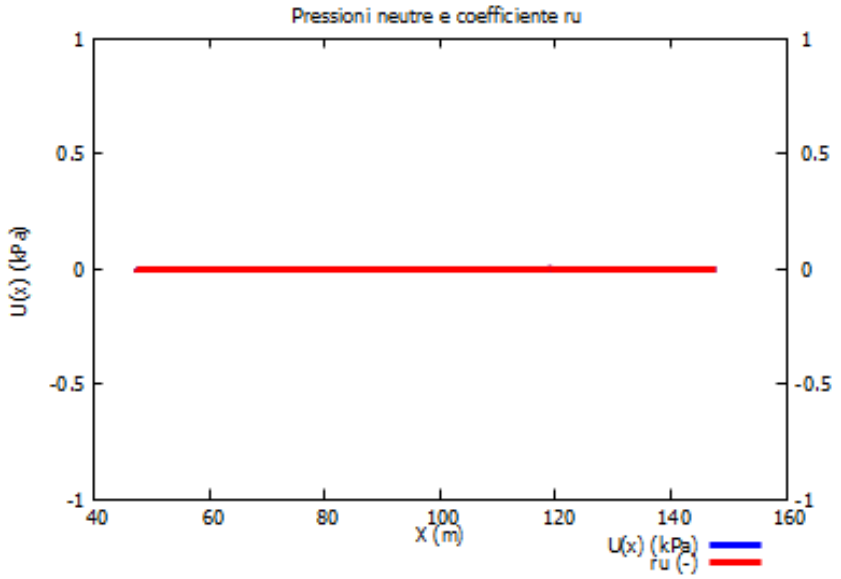
Fs minimo : 2.2939
Range Fs : 2.2939 2.3073
Differenza % Range Fs : 0.58
Coefficiente Sismico orizzontale - Kh: 0.0350
Coefficiente Sismico verticale - Kv: 0.0175

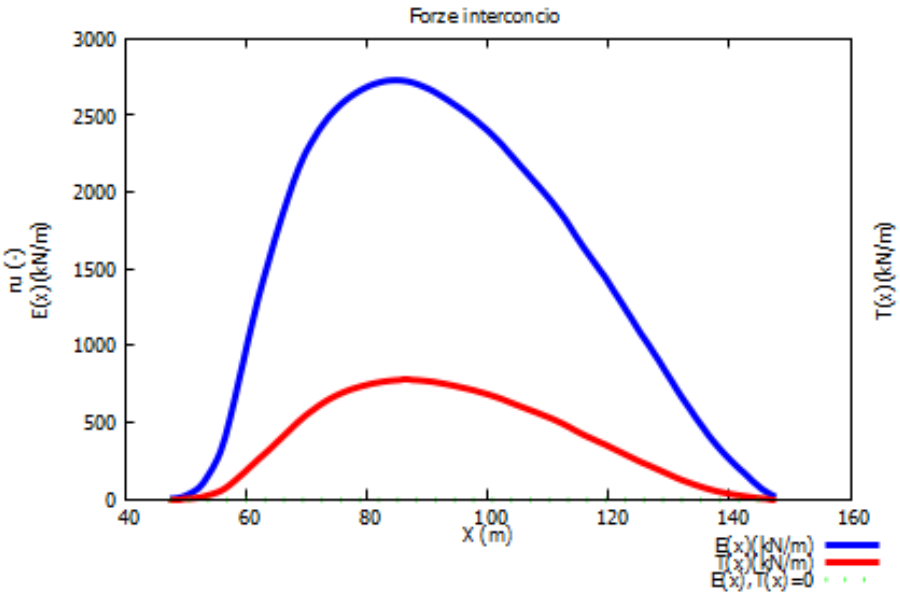
GENERAZIONE SUPERFICI RANDOM

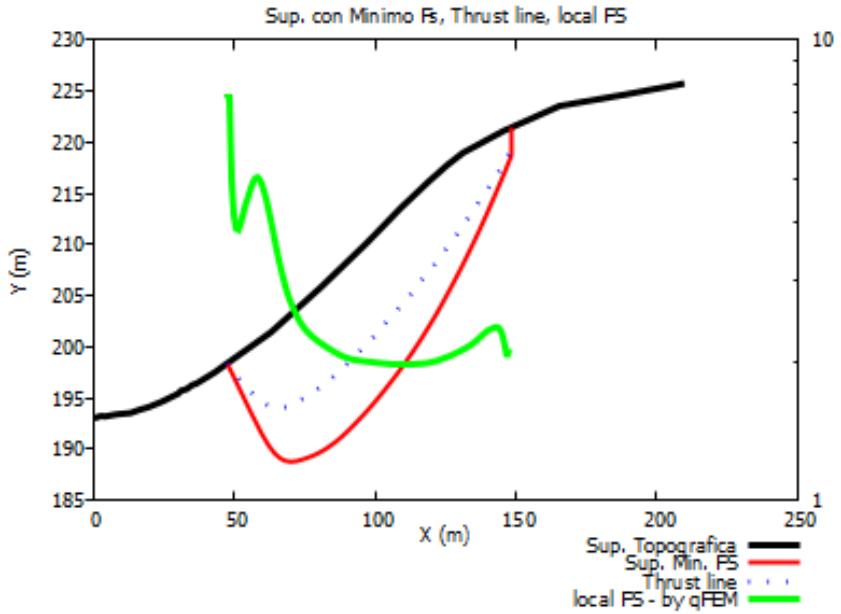
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 8.4
Range X inizio generazione : 4.2 - 193.1
Range X termine generazione : 25.2 - 205.7
Livello Y minimo considerato : 163.6

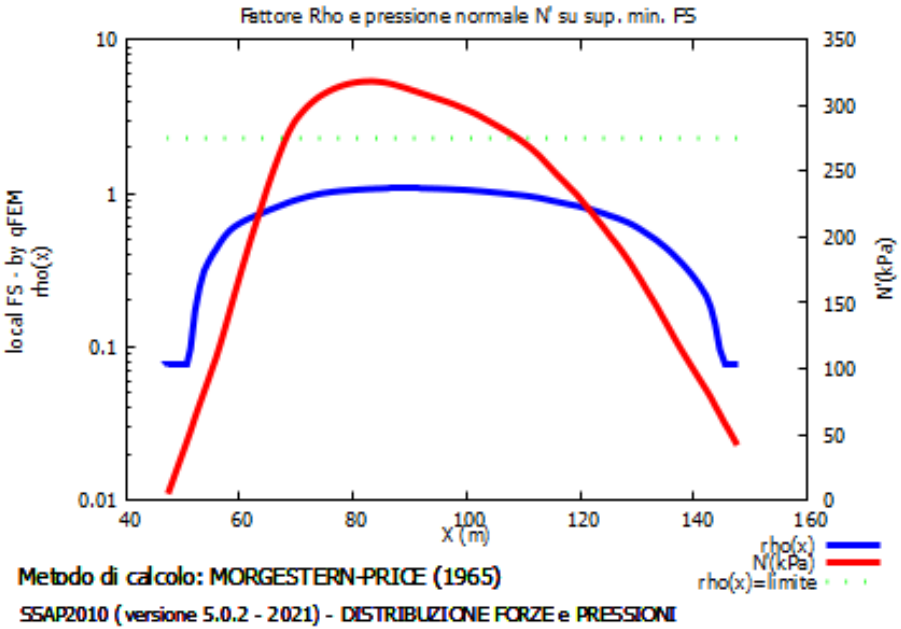
Parametri Geotecnici degli strati # ----------

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





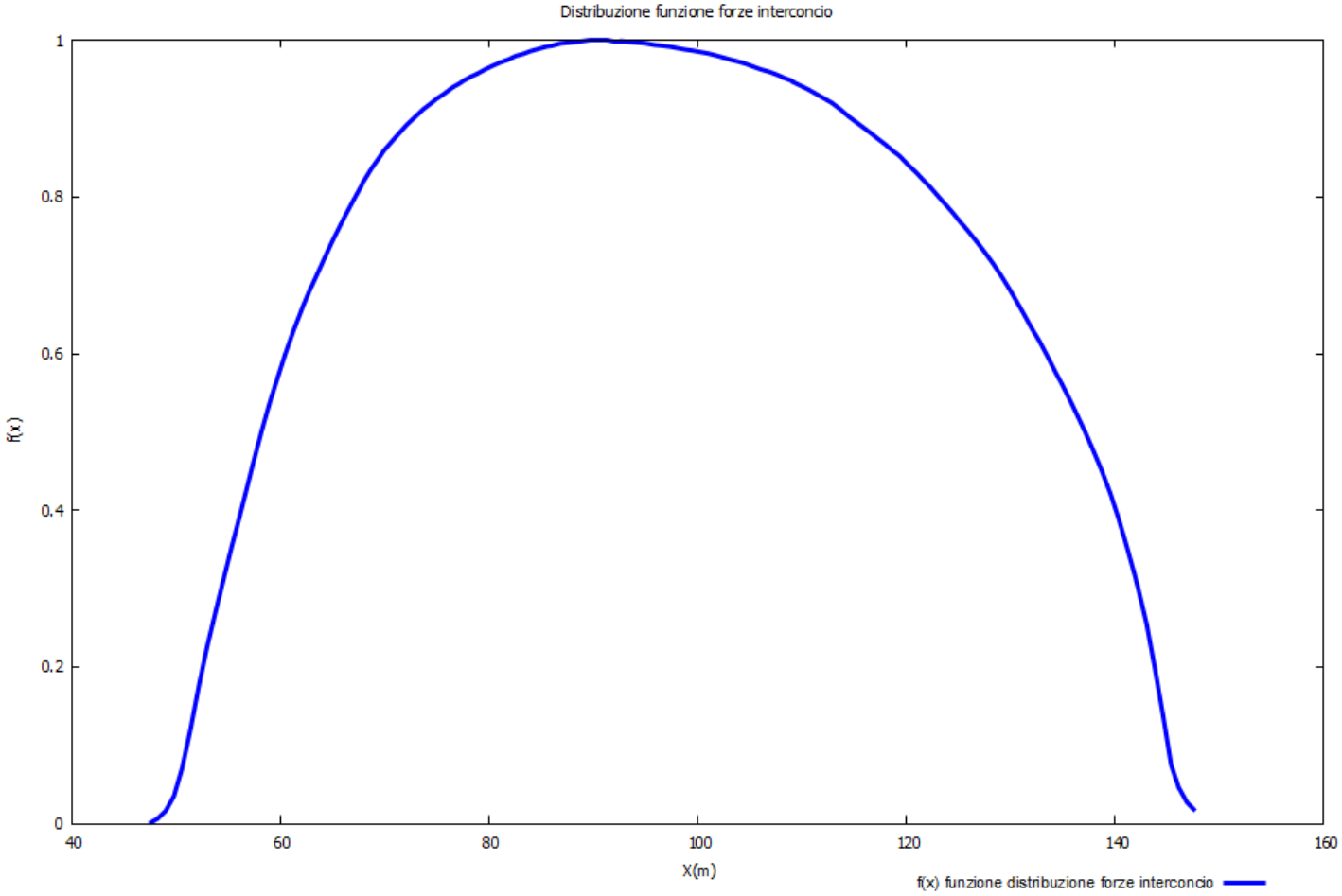




Metodo di calcolo: MORGESTERN-PRICE (1965)

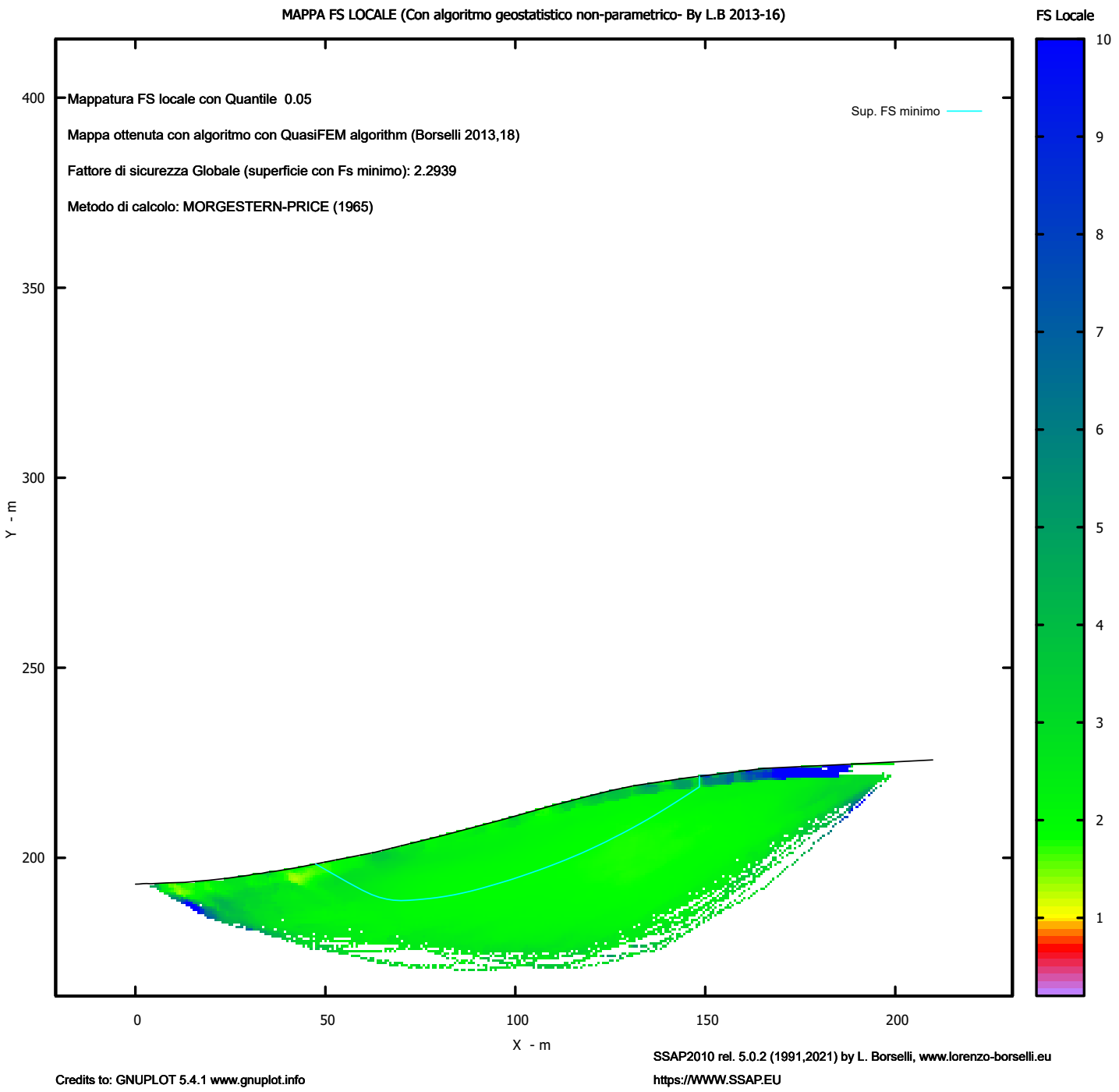
SSAP2010 (versione 5.0.2 - 2021) - DISTRIBUZIONE FORZE e PRESSIONI

18/11/21 13:13



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 *,**
*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 GUGLIELMO\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	193.05	-	-	-	-	-	-
1.00	193.07	-	-	-	-	-	-
2.00	193.18	-	-	-	-	-	-
3.00	193.21	-	-	-	-	-	-
4.00	193.17	-	-	-	-	-	-
8.15	193.38	-	-	-	-	-	-
13.00	193.51	-	-	-	-	-	-
16.23	193.82	-	-	-	-	-	-
19.26	194.07	-	-	-	-	-	-
24.00	194.59	-	-	-	-	-	-
30.00	195.40	-	-	-	-	-	-
31.00	195.69	-	-	-	-	-	-
33.00	195.85	-	-	-	-	-	-
35.00	196.26	-	-	-	-	-	-
36.37	196.37	-	-	-	-	-	-
43.00	197.49	-	-	-	-	-	-
46.39	198.16	-	-	-	-	-	-
63.00	201.42	-	-	-	-	-	-
80.94	205.87	-	-	-	-	-	-
97.25	210.20	-	-	-	-	-	-
109.09	213.57	-	-	-	-	-	-
119.00	216.15	-	-	-	-	-	-
125.50	217.74	-	-	-	-	-	-
131.23	218.96	-	-	-	-	-	-
145.37	221.07	-	-	-	-	-	-
165.50	223.54	-	-	-	-	-	-
187.10	224.58	-	-	-	-	-	-
209.89	225.75	-	-	-	-	-	-

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)*: 8.4 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 4.20 193.10
LIVELLO MINIMO CONSIDERATO (Ymin): 163.62
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 25.19 205.69
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) 2.2794 - Min. - X Y Lambda= 0.2379
48.14 198.50
56.45 193.32
60.15 191.14
62.47 189.98
64.24 189.32
66.13 188.92
67.68 188.79
69.50 188.87
71.56 189.16
74.33 189.72
76.77 190.23
79.01 190.74
81.15 191.25
83.25 191.79
85.32 192.35
87.42 192.95
89.56 193.59
91.79 194.29
93.95 194.98
96.07 195.68
98.17 196.39

100.28 197.13
102.38 197.88
104.50 198.66
106.66 199.47
108.88 200.33
111.02 201.19
113.13 202.06
115.20 202.94
117.31 203.87
119.39 204.81
121.49 205.80
123.64 206.83
125.87 207.94
128.02 209.03
130.14 210.12
132.23 211.23
134.34 212.38
136.68 213.69
139.31 215.19
143.03 217.37
144.56 218.27
144.56 220.95

Fattore di sicurezza (FS) 2.2944 - N.2 -- X Y Lambda= 0.2294
57.40 200.32
63.64 196.52
66.46 194.90
68.26 194.01
69.67 193.47
71.14 193.11
72.38 192.94
73.80 192.92
75.37 193.02
77.43 193.28
79.26 193.52
80.96 193.77
82.58 194.03
84.19 194.31
85.77 194.61
87.37 194.93
89.00 195.28
90.69 195.66
92.34 196.05
93.96 196.44
95.57 196.83
97.18 197.24
98.79 197.65
100.40 198.08
102.03 198.52
103.67 198.98
105.31 199.43
106.94 199.87
108.56 200.31
110.18 200.75
111.82 201.19
113.49 201.62
115.21 202.07
117.00 202.54
118.58 203.01
120.11 203.53
121.57 204.09
123.14 204.78
124.61 205.49
126.16 206.31
127.78 207.25

129.59 208.36
131.30 209.43
132.94 210.49
134.55 211.54
136.16 212.63
137.94 213.87
139.94 215.29
142.78 217.35
144.16 218.36
144.16 220.89

Fattore di sicurezza (FS) 2.2989 - N.3 -- X Y Lambda= 0.2360
58.19 200.48
63.99 197.03
66.65 195.53
68.37 194.69
69.75 194.15
71.16 193.77
72.38 193.56
73.74 193.46
75.24 193.46
77.16 193.57
78.86 193.69
80.44 193.82
81.95 193.98
83.45 194.17
84.93 194.37
86.42 194.60
87.94 194.87
89.53 195.17
91.10 195.46
92.65 195.76
94.19 196.06
95.72 196.35
97.26 196.66
98.81 196.96
100.38 197.27
101.97 197.59
103.49 197.92
104.98 198.27
106.46 198.64
107.97 199.05
109.45 199.47
110.97 199.93
112.55 200.44
114.24 201.01
115.78 201.57
117.27 202.15
118.72 202.76
120.21 203.44
121.65 204.13
123.13 204.89
124.65 205.72
126.28 206.65
127.87 207.55
129.42 208.42
130.96 209.28
132.48 210.13
134.01 210.97
135.54 211.80
137.08 212.64
138.63 213.47
140.17 214.29
141.69 215.09
143.22 215.89

144.74 216.67
146.45 217.54
148.35 218.50
149.09 218.87
149.09 221.53

Fattore di sicurezza (FS) 2.3014 - N.4 -- X Y Lambda= 0.2358
57.28 200.30
63.28 196.89
66.05 195.40
67.88 194.54
69.35 193.97
70.85 193.56
72.16 193.31
73.61 193.15
75.20 193.10
77.19 193.13
78.94 193.19
80.57 193.28
82.12 193.40
83.69 193.56
85.21 193.75
86.76 193.98
88.36 194.25
90.07 194.57
91.72 194.90
93.33 195.22
94.92 195.56
96.51 195.90
98.11 196.25
99.73 196.62
101.39 197.01
103.12 197.43
104.71 197.85
106.25 198.30
107.75 198.79
109.31 199.35
110.81 199.94
112.35 200.58
113.93 201.29
115.63 202.11
117.30 202.90
118.93 203.69
120.55 204.47
122.14 205.24
123.76 206.02
125.39 206.82
127.06 207.63
128.78 208.47
130.35 209.30
131.89 210.16
133.37 211.06
134.94 212.06
136.61 213.22
138.55 214.64
141.34 216.80
142.70 217.88
142.70 220.67

Fattore di sicurezza (FS) 2.3022 - N.5 -- X Y Lambda= 0.2284
42.27 197.37
49.26 193.33
52.46 191.58
54.55 190.60

56.21 189.97
57.92 189.53
59.38 189.28
61.02 189.17
62.80 189.18
65.06 189.32
67.11 189.46
69.04 189.60
70.91 189.76
72.75 189.92
74.58 190.10
76.43 190.29
78.33 190.51
80.29 190.74
82.14 190.99
83.94 191.27
85.70 191.59
87.51 191.95
89.27 192.34
91.07 192.77
92.91 193.25
94.87 193.80
96.76 194.34
98.63 194.88
100.47 195.42
102.30 195.97
104.16 196.54
106.03 197.13
107.97 197.74
109.99 198.39
111.81 199.04
113.57 199.73
115.26 200.46
117.06 201.32
118.76 202.20
120.54 203.19
122.39 204.29
124.44 205.58
126.36 206.82
128.22 208.05
130.03 209.29
131.86 210.57
133.87 212.04
136.15 213.73
139.37 216.20
141.69 217.99
141.69 220.52

Fattore di sicurezza (FS) 2.3028 - N.6 -- X Y Lambda= 0.2302
49.53 198.78
59.18 194.62
63.59 192.85
66.46 191.90
68.74 191.35
71.10 191.05
73.14 190.97
75.41 191.09
77.89 191.39
81.00 191.94
83.83 192.46
86.48 192.98
89.05 193.50
91.57 194.04
94.09 194.60
96.65 195.20

99.27	195.84
102.02	196.54
104.57	197.24
107.05	197.99
109.45	198.78
111.95	199.67
114.37	200.59
116.87	201.62
119.47	202.75
122.30	204.05
124.90	205.30
127.41	206.57
129.84	207.88
132.34	209.30
135.06	210.94
138.16	212.90
142.61	215.83
146.90	218.73
146.90	221.26

Fattore di sicurezza (FS) 2.3047 - N.7 -- X Y Lambda= 0.2382

46.42	198.16
53.76	193.77
57.16	191.84
59.39	190.72
61.20	189.98
63.03	189.42
64.64	189.08
66.42	188.85
68.39	188.74
70.88	188.73
73.02	188.77
74.98	188.86
76.84	189.01
78.74	189.23
80.57	189.50
82.48	189.84
84.48	190.26
86.71	190.79
88.73	191.31
90.66	191.86
92.52	192.45
94.44	193.10
96.29	193.79
98.20	194.56
100.18	195.40
102.33	196.37
104.34	197.24
106.30	198.06
108.20	198.82
110.14	199.56
112.04	200.25
113.98	200.92
115.97	201.58
118.08	202.24
120.07	202.90
122.00	203.58
123.89	204.28
125.82	205.03
127.72	205.80
129.66	206.63
131.67	207.53
133.82	208.52
135.80	209.49
137.72	210.48

139.58	211.49
141.51	212.60
143.59	213.88
145.98	215.41
149.40	217.71
151.85	219.39
151.85	221.86

Fattore di sicurezza (FS) 2.3064 - N.8 -- X Y Lambda= 0.2379

43.95	197.68
51.97	192.73
55.54	190.66
57.77	189.56
59.47	188.94
61.30	188.58
62.79	188.46
64.53	188.56
66.50	188.86
69.14	189.42
71.51	189.94
73.69	190.44
75.78	190.93
77.82	191.42
79.85	191.94
81.91	192.47
84.01	193.03
86.19	193.63
88.24	194.23
90.25	194.85
92.21	195.51
94.23	196.23
96.20	196.96
98.20	197.76
100.25	198.62
102.42	199.56
104.52	200.49
106.59	201.41
108.63	202.35
110.67	203.29
112.71	204.25
114.76	205.23
116.84	206.23
118.97	207.28
121.02	208.32
123.05	209.37
125.06	210.43
127.09	211.54
129.34	212.81
131.87	214.28
135.46	216.41
136.94	217.30
136.94	219.81

Fattore di sicurezza (FS) 2.3065 - N.9 -- X Y Lambda= 0.2237

43.41	197.57
50.30	193.99
53.50	192.42
55.60	191.52
57.31	190.93
59.04	190.51
60.56	190.26
62.24	190.13
64.07	190.10
66.36	190.18

68.37 190.29
70.24 190.43
72.01 190.61
73.82 190.84
75.56 191.10
77.36 191.42
79.20 191.78
81.18 192.21
83.08 192.64
84.93 193.07
86.76 193.52
88.59 193.97
90.40 194.44
92.23 194.93
94.08 195.44
95.97 195.98
97.83 196.50
99.67 197.00
101.51 197.50
103.34 197.99
105.19 198.47
107.07 198.95
108.99 199.44
111.00 199.93
112.81 200.44
114.58 200.99
116.28 201.58
118.07 202.27
119.79 202.99
121.59 203.81
123.48 204.73
125.60 205.83
127.49 206.87
129.30 207.93
131.03 209.02
132.83 210.23
134.77 211.63
136.99 213.33
140.20 215.91
142.52 217.81
142.52 220.64

Fattore di sicurezza (FS) 2.3068 - N.10 -- X Y Lambda= 0.2304
47.83 198.44
57.08 194.49
61.28 192.82
63.98 191.95
66.12 191.47
68.34 191.24
70.24 191.23
72.37 191.41
74.69 191.80
77.63 192.45
80.36 193.05
82.92 193.61
85.42 194.15
87.84 194.67
90.29 195.20
92.75 195.72
95.27 196.25
97.84 196.80
100.23 197.35
102.57 197.96
104.84 198.62
107.21 199.37

109.51	200.16
111.91	201.05
114.41	202.05
117.18	203.22
119.64	204.34
121.99	205.51
124.25	206.72
126.61	208.09
129.13	209.68
132.04	211.66
136.26	214.68
140.64	217.90
140.64	220.36

---------- 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	2.279	12764.3	5599.8	6604.5	Surplus
2	2.294	10838.3	4723.7	5642.2	Surplus
3	2.299	11248.3	4893.0	5866.0	Surplus
4	2.301	10989.0	4774.9	5736.6	Surplus
5	2.302	13994.5	6078.9	7307.8	Surplus
6	2.303	12879.2	5592.9	6727.0	Surplus
7	2.305	15013.3	6514.2	7847.7	Surplus
8	2.306	11624.2	5040.1	6080.2	Surplus
9	2.306	13118.2	5687.6	6861.8	Surplus
10	2.307	11571.0	5016.0	6053.4	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 5642.2

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)
48.138	0.765	-31.98	4.88	0.00	0.00	26.00	19.50
48.902	0.765	-31.98	14.64	0.00	0.00	26.00	19.50
49.667	0.765	-31.98	24.40	0.00	0.00	26.00	19.50
50.431	0.765	-31.98	34.16	0.00	0.00	26.00	19.50
51.196	0.765	-31.98	43.92	0.00	0.00	26.00	19.50
51.960	0.765	-31.98	53.68	0.00	0.00	26.00	19.50
52.725	0.765	-31.98	63.44	0.00	0.00	26.00	19.50
53.489	0.765	-31.98	73.20	0.00	0.00	26.00	19.50
54.254	0.765	-31.98	82.96	0.00	0.00	26.00	19.50
55.018	0.765	-31.98	92.72	0.00	0.00	26.00	19.50
55.783	0.665	-31.98	88.55	0.00	0.00	26.00	19.50
56.448	0.765	-30.49	110.75	0.00	0.00	26.00	19.50
57.212	0.765	-30.49	120.09	0.00	0.00	26.00	19.50
57.977	0.765	-30.49	129.43	0.00	0.00	26.00	19.50
58.741	0.765	-30.49	138.76	0.00	0.00	26.00	19.50
59.506	0.640	-30.49	123.41	0.00	0.00	26.00	19.50
60.146	0.765	-26.54	155.39	0.00	0.00	26.00	19.50

60.911	0.765	-26.54	163.66	0.00	0.00	26.00	19.50
61.675	0.765	-26.54	171.94	0.00	0.00	26.00	19.50
62.440	0.025	-26.54	5.87	0.00	0.00	26.00	19.50
62.465	0.535	-20.40	125.04	0.00	0.00	26.00	19.50
63.000	0.765	-20.40	184.77	0.00	0.00	26.00	19.50
63.765	0.471	-20.40	117.39	0.00	0.00	26.00	19.50
64.235	0.765	-11.94	195.72	0.00	0.00	26.00	19.50
65.000	0.765	-11.94	201.19	0.00	0.00	26.00	19.50
65.764	0.369	-11.94	98.95	0.00	0.00	26.00	19.50
66.133	0.765	-4.87	208.54	0.00	0.00	26.00	19.50
66.897	0.765	-4.87	212.51	0.00	0.00	26.00	19.50
67.662	0.021	-4.87	5.91	0.00	0.00	26.00	19.50
67.683	0.765	2.54	215.81	0.00	0.00	26.00	19.50
68.447	0.765	2.54	218.23	0.00	0.00	26.00	19.50
69.212	0.288	2.54	82.87	0.00	0.00	26.00	19.50
69.500	0.765	8.00	221.00	0.00	0.00	26.00	19.50
70.264	0.765	8.00	222.27	0.00	0.00	26.00	19.50
71.029	0.535	8.00	156.21	0.00	0.00	26.00	19.50
71.564	0.765	11.38	224.09	0.00	0.00	26.00	19.50
72.328	0.765	11.38	224.64	0.00	0.00	26.00	19.50
73.093	0.765	11.38	225.20	0.00	0.00	26.00	19.50
73.857	0.477	11.38	140.87	0.00	0.00	26.00	19.50
74.334	0.765	12.00	226.04	0.00	0.00	26.00	19.50
75.099	0.765	12.00	226.46	0.00	0.00	26.00	19.50
75.863	0.765	12.00	226.88	0.00	0.00	26.00	19.50
76.628	0.144	12.00	42.65	0.00	0.00	26.00	19.50
76.772	0.765	12.75	227.30	0.00	0.00	26.00	19.50
77.536	0.765	12.75	227.56	0.00	0.00	26.00	19.50
78.301	0.710	12.75	211.47	0.00	0.00	26.00	19.50
79.010	0.765	13.54	227.98	0.00	0.00	26.00	19.50
79.775	0.765	13.54	228.06	0.00	0.00	26.00	19.50
80.539	0.401	13.54	119.57	0.00	0.00	26.00	19.50
80.940	0.205	13.54	61.28	0.00	0.00	26.00	19.50
81.145	0.765	14.38	228.28	0.00	0.00	26.00	19.50
81.910	0.765	14.38	228.39	0.00	0.00	26.00	19.50
82.674	0.573	14.38	171.28	0.00	0.00	26.00	19.50
83.247	0.765	15.15	228.49	0.00	0.00	26.00	19.50
84.012	0.765	15.15	228.43	0.00	0.00	26.00	19.50
84.776	0.540	15.15	161.20	0.00	0.00	26.00	19.50
85.316	0.765	15.91	228.24	0.00	0.00	26.00	19.50
86.081	0.765	15.91	228.00	0.00	0.00	26.00	19.50
86.845	0.571	15.91	170.16	0.00	0.00	26.00	19.50
87.416	0.765	16.64	227.52	0.00	0.00	26.00	19.50
88.181	0.765	16.64	227.12	0.00	0.00	26.00	19.50
88.945	0.610	16.64	180.88	0.00	0.00	26.00	19.50
89.555	0.765	17.31	226.33	0.00	0.00	26.00	19.50
90.320	0.765	17.31	225.78	0.00	0.00	26.00	19.50
91.084	0.706	17.31	208.05	0.00	0.00	26.00	19.50
91.790	0.765	17.77	224.67	0.00	0.00	26.00	19.50
92.555	0.765	17.77	224.02	0.00	0.00	26.00	19.50
93.319	0.631	17.77	184.43	0.00	0.00	26.00	19.50
93.950	0.765	18.25	222.77	0.00	0.00	26.00	19.50
94.715	0.765	18.25	222.00	0.00	0.00	26.00	19.50
95.479	0.593	18.25	171.81	0.00	0.00	26.00	19.50
96.073	0.765	18.74	220.58	0.00	0.00	26.00	19.50
96.837	0.413	18.74	118.67	0.00	0.00	26.00	19.50
97.250	0.765	18.74	219.35	0.00	0.00	26.00	19.50
98.015	0.157	18.74	45.04	0.00	0.00	26.00	19.50
98.172	0.765	19.23	218.50	0.00	0.00	26.00	19.50
98.936	0.765	19.23	217.74	0.00	0.00	26.00	19.50
99.701	0.581	19.23	164.91	0.00	0.00	26.00	19.50
100.282	0.765	19.72	216.34	0.00	0.00	26.00	19.50
101.046	0.765	19.72	215.46	0.00	0.00	26.00	19.50
101.811	0.569	19.72	159.80	0.00	0.00	26.00	19.50
102.380	0.765	20.20	213.87	0.00	0.00	26.00	19.50
103.144	0.765	20.20	212.88	0.00	0.00	26.00	19.50

103.909	0.591	20.20	163.95	0.00	0.00	26.00	19.50
104.500	0.765	20.67	211.07	0.00	0.00	26.00	19.50
105.265	0.765	20.67	209.96	0.00	0.00	26.00	19.50
106.029	0.627	20.67	171.33	0.00	0.00	26.00	19.50
106.656	0.765	21.11	207.91	0.00	0.00	26.00	19.50
107.420	0.765	21.11	206.70	0.00	0.00	26.00	19.50
108.185	0.698	21.11	187.55	0.00	0.00	26.00	19.50
108.882	0.208	21.75	55.60	0.00	0.00	26.00	19.50
109.090	0.765	21.75	203.80	0.00	0.00	26.00	19.50
109.855	0.765	21.75	202.15	0.00	0.00	26.00	19.50
110.619	0.403	21.75	105.95	0.00	0.00	26.00	19.50
111.022	0.765	22.41	199.56	0.00	0.00	26.00	19.50
111.787	0.765	22.41	197.75	0.00	0.00	26.00	19.50
112.551	0.576	22.41	147.69	0.00	0.00	26.00	19.50
113.127	0.765	23.09	194.49	0.00	0.00	26.00	19.50
113.891	0.765	23.09	192.52	0.00	0.00	26.00	19.50
114.656	0.548	23.09	136.76	0.00	0.00	26.00	19.50
115.204	0.765	23.77	189.04	0.00	0.00	26.00	19.50
115.968	0.765	23.77	186.90	0.00	0.00	26.00	19.50
116.733	0.575	23.77	139.24	0.00	0.00	26.00	19.50
117.308	0.765	24.44	183.06	0.00	0.00	26.00	19.50
118.073	0.765	24.44	180.76	0.00	0.00	26.00	19.50
118.837	0.163	24.44	38.19	0.00	0.00	26.00	19.50
119.000	0.387	24.44	90.36	0.00	0.00	26.00	19.50
119.387	0.765	25.10	176.52	0.00	0.00	26.00	19.50
120.152	0.765	25.10	173.85	0.00	0.00	26.00	19.50
120.916	0.578	25.10	129.68	0.00	0.00	26.00	19.50
121.494	0.765	25.73	169.10	0.00	0.00	26.00	19.50
122.259	0.765	25.73	166.28	0.00	0.00	26.00	19.50
123.023	0.616	25.73	131.89	0.00	0.00	26.00	19.50
123.639	0.765	26.32	161.10	0.00	0.00	26.00	19.50
124.404	0.765	26.32	158.13	0.00	0.00	26.00	19.50
125.168	0.332	26.32	67.74	0.00	0.00	26.00	19.50
125.500	0.371	26.32	75.01	0.00	0.00	26.00	19.50
125.871	0.765	26.85	151.98	0.00	0.00	26.00	19.50
126.636	0.765	26.85	148.49	0.00	0.00	26.00	19.50
127.400	0.624	26.85	118.61	0.00	0.00	26.00	19.50
128.024	0.765	27.39	142.08	0.00	0.00	26.00	19.50
128.789	0.765	27.39	138.45	0.00	0.00	26.00	19.50
129.553	0.587	27.39	103.90	0.00	0.00	26.00	19.50
130.140	0.765	27.95	131.96	0.00	0.00	26.00	19.50
130.905	0.325	27.95	54.95	0.00	0.00	26.00	19.50
131.230	0.765	27.95	126.19	0.00	0.00	26.00	19.50
131.995	0.237	27.95	38.26	0.00	0.00	26.00	19.50
132.232	0.765	28.50	120.18	0.00	0.00	26.00	19.50
132.996	0.765	28.50	115.49	0.00	0.00	26.00	19.50
133.761	0.580	28.50	84.55	0.00	0.00	26.00	19.50
134.341	0.765	29.22	107.15	0.00	0.00	26.00	19.50
135.106	0.765	29.22	102.28	0.00	0.00	26.00	19.50
135.870	0.765	29.22	97.40	0.00	0.00	26.00	19.50
136.635	0.049	29.22	6.06	0.00	0.00	26.00	19.50
136.684	0.765	29.79	92.13	0.00	0.00	26.00	19.50
137.448	0.765	29.79	87.10	0.00	0.00	26.00	19.50
138.213	0.765	29.79	82.06	0.00	0.00	26.00	19.50
138.977	0.335	29.79	34.35	0.00	0.00	26.00	19.50
139.312	0.765	30.31	74.75	0.00	0.00	26.00	19.50
140.077	0.765	30.31	69.57	0.00	0.00	26.00	19.50
140.841	0.765	30.31	64.40	0.00	0.00	26.00	19.50
141.606	0.765	30.31	59.22	0.00	0.00	26.00	19.50
142.370	0.664	30.31	47.22	0.00	0.00	26.00	19.50
143.034	0.765	30.60	49.50	0.00	0.00	26.00	19.50
143.799	0.765	30.60	44.24	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)	(--)	(--)	(--)		
48.138	0.000	198.503	-0.416	0.0000000000E+000	0.0000000000E+000	1.1590766434E+000	0.076	8.057	7.495		
48.902	0.157	198.183	-0.416	2.4293097377E+000	3.5687266066E-003	5.1960702422E+000	0.076	8.057	7.495		
49.667	0.318	197.867	-0.407	7.9449707548E+000	6.4329442186E-002	1.1514615436E+001	0.076	5.354	4.940		
50.431	0.489	197.560	-0.391	2.0035554193E+001	4.4655111332E-001	1.9776482026E+001	0.076	4.491	4.154		
51.196	0.674	197.268	-0.373	3.8183894404E+001	1.4875194970E+000	2.5218422717E+001	0.076	4.045	3.761		
51.960	0.873	196.990	-0.363	5.8595393000E+001	3.5782689600E+000	2.7629184073E+001	0.091	3.853	3.597		
52.725	1.074	196.714	-0.348	8.0429870537E+001	7.4067856212E+000	3.4501209466E+001	0.150	3.811	3.552		
53.489	1.295	196.457	-0.326	1.1134893316E+002	1.3441757246E+001	4.9155851249E+001	0.219	3.857	3.561		
54.254	1.531	196.215	-0.320	1.5559086383E+002	2.1671932146E+001	6.1442218442E+001	0.284	3.933	3.571		
55.018	1.761	195.969	-0.315	2.0529620598E+002	3.0856137938E+001	7.2947673296E+001	0.335	3.991	3.568		
55.783	2.004	195.734	-0.300	2.6713037425E+002	4.2547933686E+001	9.1110526072E+001	0.384	4.066	3.571		
56.448	2.224	195.539	-0.297	3.3360928011E+002	5.5246518498E+001	1.1812864847E+002	0.426	4.136	3.569		
57.212	2.444	195.310	-0.291	4.3985518849E+002	7.5800770187E+001	1.4891588656E+002	0.481	4.201	3.548		
57.977	2.679	195.094	-0.273	5.6130681084E+002	9.9726542282E+001	1.6775278882E+002	0.528	4.235	3.510		
58.741	2.928	194.893	-0.248	6.9635499296E+002	1.2720302652E+002	1.7865399476E+002	0.571	4.221	3.454		
59.506	3.200	194.715	-0.221	8.3447493548E+002	1.5620202717E+002	1.8153701885E+002	0.607	4.163	3.389		
60.146	3.444	194.582	-0.194	9.5118665359E+002	1.8165643543E+002	1.8487009921E+002	0.634	4.085	3.329		
60.911	3.687	194.443	-0.167	1.0948972121E+003	2.1467185491E+002	1.8377227977E+002	0.667	3.955	3.247		
61.675	3.953	194.328	-0.135	1.2321808127E+003	2.4769385333E+002	1.7790864356E+002	0.696	3.812	3.166		
62.440	4.244	194.237	-0.118	1.3669256691E+003	2.8266786734E+002	1.5534554691E+002	0.726	3.647	3.080		
62.465	4.255	194.235	-0.086	1.3708614732E+003	2.8373272358E+002	1.5508557154E+002	0.727	3.641	3.077		
63.000	4.408	194.189	-0.071	1.4587161757E+003	3.0825898973E+002	1.6072342229E+002	0.749	3.521	3.018		
63.765	4.645	194.142	-0.051	1.5777426965E+003	3.4342984245E+002	1.5024369350E+002	0.778	3.356	2.935		
64.235	4.804	194.125	-0.021	1.6468632409E+003	3.6516402582E+002	1.4358014057E+002	0.796	3.255	2.885		
65.000	4.956	194.116	0.001	1.7525183615E+003	4.0015956677E+002	1.3195898026E+002	0.827	3.104	2.808		
65.764	5.129	194.127	0.023	1.8486330766E+003	4.3410583639E+002	1.1906307172E+002	0.855	2.969	2.736		
66.133	5.221	194.142	0.052	1.8913345993E+003	4.5005926900E+002	1.1160597380E+002	0.868	2.907	2.703		
66.897	5.331	194.186	0.070	1.9699229405E+003	4.8112243189E+002	9.6666613596E+001	0.895	2.790	2.639		
67.662	5.459	194.249	0.082	2.0391411882E+003	5.1040972602E+002	7.7755889479E+001	0.921	2.683	2.580		
67.683	5.463	194.251	0.110	2.0407702252E+003	5.1113719262E+002	7.7370383711E+001	0.922	2.680	2.578		
68.447	5.514	194.336	0.123	2.0989874830E+003	5.3811318317E+002	6.5126560796E+001	0.947	2.582	2.524		
69.212	5.584	194.440	0.142	2.1403509847E+003	5.6008309608E+002	4.9748480432E+001	0.968	2.499	2.477		
69.500	5.617	194.485	0.163	2.1542117864E+003	5.6798905376E+002	4.5580454599E+001	0.976	2.468	2.460		
70.264	5.635	194.611	0.176	2.1839335436E+003	5.8642780464E+002	3.4405426557E+001	0.995	2.397	2.419		
71.029	5.671	194.755	0.199	2.2068188711E+003	6.0258821505E+002	2.6863499882E+001	1.013	2.331	2.381		
71.564	5.711	194.870	0.220	2.2200337892E+003	6.1306237470E+002	2.1780006679E+001	1.025	2.287	2.354		
72.328	5.728	195.041	0.228	2.2334755983E+003	6.2547632748E+002	1.4902111905E+001	1.040	2.233	2.321		
73.093	5.753	195.219	0.235	2.2428196326E+003	6.3576383571E+002	9.9545225315E+000	1.053	2.187	2.290		
73.857	5.780	195.400	0.235	2.2486964069E+003	6.4379152325E+002	5.4199824392E+000	1.064	2.150	2.265		
74.334	5.795	195.511	0.233	2.2506077590E+003	6.4748997258E+002	3.0877305939E+000	1.069	2.132	2.251		
75.099	5.810	195.689	0.234	2.2518452673E+003	6.5198692880E+002	1.6404965421E-001	1.075	2.109	2.232		
75.863	5.828	195.869	0.231	2.2508585966E+003	6.5469617517E+002	-1.9865675638E+000	1.080	2.092	2.217		
76.628	5.839	196.042	0.227	2.2488077369E+003	6.5631905660E+002	-3.0666962586E+000	1.083	2.078	2.204		
76.772	5.841	196.075	0.234	2.2483571758E+003	6.5654386541E+002	-3.3609682875E+000	1.083	2.076	2.202		
77.536	5.847	196.255	0.235	2.2448831200E+003	6.5703091451E+002	-5.0749837034E+000	1.085	2.066	2.193		
78.301	5.854	196.434	0.235	2.2405973506E+003	6.5679187431E+002	-6.1372092319E+000	1.086	2.058	2.185		
79.010	5.860	196.601	0.240	2.2358919433E+003	6.5611520332E+002	-7.3612260753E+000	1.087	2.052	2.180		
79.775	5.862	196.787	0.244	2.2296622830E+003	6.5487063518E+002	-8.5524115140E+000	1.087	2.047	2.174		
80.539	5.865	196.974	0.244	2.2228150109E+003	6.5326751962E+002	-9.2915507351E+000	1.087	2.042	2.171		
80.940	5.866	197.071	0.246	2.2190212892E+003	6.5232775649E+002	-1.0293444589E+001	1.087	2.040	2.169		
81.145	5.868	197.123	0.249	2.2168211511E+003	6.5175285710E+002	-1.0965655256E+001	1.087	2.039	2.168		
81.910	5.862	197.313	0.254	2.2077290113E+003	6.4931272505E+002	-1.2713350347E+001	1.086	2.036	2.165		

82.674	5.863	197.511	0.251	2.1973819996E+003	6.4642612917E+002	-1.3726146237E+001	1.085	2.033	2.163
83.247	5.854	197.648	0.251	2.1894329960E+003	6.4411892399E+002	-1.4768950348E+001	1.084	2.031	2.161
84.012	5.846	197.847	0.263	2.1772252223E+003	6.4048407303E+002	-1.6757489847E+001	1.083	2.029	2.159
84.776	5.843	198.051	0.268	2.1638102156E+003	6.3638977605E+002	-1.8087249150E+001	1.081	2.027	2.158
85.316	5.842	198.196	0.278	2.1538435559E+003	6.3328637050E+002	-1.9387517534E+001	1.080	2.026	2.157
86.081	5.842	198.414	0.292	2.1380261838E+003	6.2827656331E+002	-2.1645208407E+001	1.078	2.025	2.155
86.845	5.853	198.643	0.283	2.1207472851E+003	6.2270393193E+002	-2.1746187169E+001	1.075	2.023	2.153
87.416	5.840	198.793	0.272	2.1086934302E+003	6.1873510829E+002	-2.2059906749E+001	1.073	2.023	2.152
88.181	5.824	199.006	0.281	2.0908535953E+003	6.1276343249E+002	-2.4007868664E+001	1.071	2.022	2.151
88.945	5.813	199.223	0.281	2.0719845703E+003	6.0634650539E+002	-2.4744387045E+001	1.067	2.022	2.150
89.555	5.799	199.391	0.284	2.0568638644E+003	6.0113134145E+002	-2.5746754532E+001	1.064	2.022	2.149
90.320	5.784	199.614	0.294	2.0362678002E+003	5.9395081881E+002	-2.7575820431E+001	1.061	2.023	2.148
91.084	5.772	199.841	0.300	2.0146994831E+003	5.8636401834E+002	-2.8990540707E+001	1.056	2.023	2.147
91.790	5.767	200.055	0.309	1.9937203757E+003	5.7894541805E+002	-3.0558437759E+001	1.052	2.024	2.146
92.555	5.762	200.296	0.310	1.9696555777E+003	5.7045253663E+002	-3.2104446447E+001	1.047	2.026	2.145
93.319	5.751	200.530	0.303	1.9446315689E+003	5.6166979664E+002	-3.1784644815E+001	1.042	2.027	2.145
93.950	5.737	200.718	0.302	1.9250656057E+003	5.5485481091E+002	-3.1445956792E+001	1.038	2.029	2.146
94.715	5.718	200.951	0.304	1.9006142004E+003	5.4644835476E+002	-3.1621375832E+001	1.033	2.031	2.146
95.479	5.698	201.183	0.295	1.8767154305E+003	5.3834107635E+002	-3.0391266522E+001	1.028	2.032	2.147
96.073	5.670	201.351	0.283	1.8590788694E+003	5.3243958774E+002	-3.0196090954E+001	1.025	2.034	2.148
96.837	5.627	201.568	0.277	1.8355215307E+003	5.2464807631E+002	-2.9852223859E+001	1.021	2.036	2.149
97.250	5.597	201.678	0.272	1.8234194063E+003	5.2067947900E+002	-2.9700143507E+001	1.019	2.037	2.150
98.015	5.548	201.888	0.277	1.8001937878E+003	5.1309420044E+002	-3.1766368185E+001	1.015	2.039	2.151
98.172	5.540	201.933	0.288	1.7951532472E+003	5.1144464898E+002	-3.2099531825E+001	1.014	2.039	2.152
98.936	5.493	202.153	0.293	1.7704346772E+003	5.0334990493E+002	-3.3028940971E+001	1.009	2.041	2.152
99.701	5.454	202.381	0.297	1.7446508564E+003	4.9485697028E+002	-3.3747327157E+001	1.004	2.043	2.153
100.282	5.424	202.553	0.308	1.7250406043E+003	4.8834789473E+002	-3.4953843711E+001	1.000	2.044	2.152
101.046	5.392	202.796	0.323	1.6971202199E+003	4.7898415389E+002	-3.7348518087E+001	0.994	2.045	2.151
101.811	5.370	203.047	0.327	1.6679334310E+003	4.6909559676E+002	-3.8069613855E+001	0.987	2.046	2.149
102.380	5.351	203.232	0.337	1.6463152264E+003	4.6170431698E+002	-3.9193941328E+001	0.982	2.047	2.147
103.144	5.334	203.497	0.356	1.6151140464E+003	4.5097392847E+002	-4.2146353959E+001	0.974	2.048	2.143
103.909	5.332	203.776	0.352	1.5818719964E+003	4.3949991110E+002	-4.1747337120E+001	0.965	2.048	2.139
104.500	5.313	203.975	0.338	1.5579819523E+003	4.3126235843E+002	-4.0729178457E+001	0.959	2.049	2.135
105.265	5.284	204.234	0.342	1.5265248273E+003	4.2047947823E+002	-4.1649983739E+001	0.950	2.050	2.131
106.029	5.260	204.498	0.335	1.4942976895E+003	4.0952581681E+002	-4.0907828444E+001	0.942	2.051	2.127
106.656	5.226	204.701	0.329	1.4692950957E+003	4.0110907905E+002	-4.0555714267E+001	0.935	2.051	2.124
107.420	5.185	204.955	0.329	1.4376654758E+003	3.9057677584E+002	-4.1090013532E+001	0.926	2.053	2.122
108.185	5.139	205.204	0.316	1.4064670467E+003	3.8028772991E+002	-3.9668833965E+001	0.918	2.054	2.120
108.882	5.082	205.417	0.308	1.3795203893E+003	3.7147663485E+002	-3.9962434519E+001	0.911	2.056	2.119
109.090	5.065	205.483	0.316	1.3711445607E+003	3.6874051919E+002	-4.0392696521E+001	0.908	2.056	2.119
109.855	5.002	205.724	0.313	1.3401688028E+003	3.5863995912E+002	-4.0314689329E+001	0.900	2.058	2.118
110.619	4.933	205.961	0.310	1.3095020091E+003	3.4862471638E+002	-4.0423291951E+001	0.892	2.060	2.118
111.022	4.898	206.086	0.321	1.2931371258E+003	3.4326255680E+002	-4.1340313847E+001	0.887	2.061	2.118
111.787	4.832	206.336	0.330	1.2604399323E+003	3.3250421447E+002	-4.3388349463E+001	0.877	2.064	2.117
112.551	4.773	206.592	0.332	1.2267948418E+003	3.2138730339E+002	-4.3712633828E+001	0.867	2.066	2.117
113.127	4.725	206.781	0.363	1.2017619478E+003	3.1308938089E+002	-4.7002496744E+001	0.859	2.068	2.116
113.891	4.696	207.079	0.389	1.1622610489E+003	3.0006018057E+002	-5.1646959548E+001	0.845	2.071	2.115
114.656	4.667	207.376	0.378	1.1227919639E+003	2.8710044265E+002	-4.9674754324E+001	0.831	2.074	2.115
115.204	4.633	207.574	0.362	1.0963412412E+003	2.7848788389E+002	-4.8221978980E+001	0.821	2.076	2.114
115.968	4.572	207.851	0.359	1.0595326046E+003	2.6666215350E+002	-4.7769009803E+001	0.808	2.079	2.114
116.733	4.508	208.123	0.344	1.0233007764E+003	2.5518649315E+002	-4.5262611831E+001	0.795	2.082	2.114
117.308	4.443	208.312	0.332	9.9818152405E+002	2.4736904618E+002	-4.3997735634E+001	0.786	2.085	2.114
118.073	4.351	208.568	0.331	9.6420171470E+002	2.3695442155E+002	-4.3955506047E+001	0.774	2.089	2.115
118.837	4.255	208.818	0.328	9.3097203808E+002	2.2691104640E+002	-4.3206159525E+001	0.762	2.092	2.115
119.000	4.234	208.871	0.310	9.2394764412E+002	2.2480131396E+002	-4.2253304094E+001	0.759	2.093	2.116
119.387	4.175	208.989	0.338	9.0841966627E+002	2.2018405838E+002	-4.2358764535E+001	0.754	2.095	2.116
120.152	4.089	209.261	0.364	8.7265297989E+002	2.0959797731E+002	-4.7762091764E+001	0.740	2.099	2.117
120.916	4.016	209.546	0.367	8.3538977934E+002	1.9862961877E+002	-4.7562873858E+001	0.726	2.104	2.117
121.494	3.953	209.754	0.369	8.0841170355E+002	1.9072710445E+002	-4.7548519044E+001	0.715	2.107	2.117
122.259	3.873	210.042	0.380	7.7117399261E+002	1.7986819229E+002	-4.8897079058E+001	0.699	2.111	2.115
123.023	3.798	210.335	0.378	7.3364638188E+002	1.6897577509E+002	-4.8083986883E+001	0.682	2.115	2.113
123.639	3.730	210.564	0.382	7.0453211127E+002	1.6057228533E+002	-4.8085621030E+001	0.669	2.118	2.111
124.404	3.650	210.862	0.385	6.6700170023E+002	1.4983525004E+002	-4.8164390830E+001	0.650	2.122	2.107
125.168	3.562	211.153	0.373	6.3088709518E+002	1.3962317349E+002	-4.4775846814E+001	0.631	2.126	2.102
125.500	3.517	211.272	0.360	6.1637735574E+002	1.3559636272E+002	-4.3865199241E+001	0.624	2.127	2.100
125.871	3.468	211.406	0.375	6.0003328424E+002	1.3109376795E+002	-4.4553083724E+001	0.616	2.129	2.098

126.636	3.372	211.697	0.386	5.6516765821E+002	1.2162457917E+002	-4.5959846578E+001	0.598	2.133	2.092
127.400	3.284	211.997	0.385	5.2975909242E+002	1.1216400687E+002	-4.4874985443E+001	0.578	2.137	2.087
128.024	3.203	212.231	0.384	5.0249204969E+002	1.0500676017E+002	-4.4132540574E+001	0.563	2.141	2.083
128.789	3.105	212.529	0.389	4.6834656819E+002	9.6201011596E+001	-4.4087314514E+001	0.542	2.146	2.079
129.553	3.005	212.825	0.380	4.3508102402E+002	8.7775449488E+001	-4.2089994172E+001	0.522	2.152	2.076
130.140	2.918	213.043	0.378	4.1100023908E+002	8.1790208366E+001	-4.1218472304E+001	0.506	2.157	2.074
130.905	2.806	213.336	0.394	3.7926823145E+002	7.4039126821E+001	-4.3343055840E+001	0.485	2.165	2.073
131.230	2.769	213.472	0.388	3.6492867332E+002	7.0603442621E+001	-4.2515428799E+001	0.475	2.169	2.073
131.995	2.651	213.760	0.370	3.3531789864E+002	6.3658857937E+001	-3.6227968407E+001	0.455	2.178	2.074
132.232	2.608	213.843	0.363	3.2690358459E+002	6.1718061520E+001	-3.5637899545E+001	0.449	2.181	2.075
132.996	2.473	214.123	0.379	2.9919699017E+002	5.5427496209E+001	-3.6698933370E+001	0.430	2.192	2.077
133.761	2.357	214.422	0.388	2.7078964872E+002	4.9118541012E+001	-3.6064740504E+001	0.409	2.203	2.080
134.341	2.265	214.645	0.389	2.5033989212E+002	4.4663127668E+001	-3.5043369855E+001	0.392	2.212	2.083
135.106	2.137	214.945	0.394	2.2374201181E+002	3.8960304176E+001	-3.4274667572E+001	0.369	2.225	2.085
135.870	2.013	215.248	0.393	1.9793274234E+002	3.3521159637E+001	-3.2658211036E+001	0.345	2.237	2.086
136.635	1.883	215.546	0.392	1.7380647986E+002	2.8542592686E+001	-3.2477945556E+001	0.319	2.248	2.083
136.684	1.876	215.567	0.392	1.7221578266E+002	2.8218589880E+001	-3.2339292194E+001	0.317	2.248	2.083
137.448	1.737	215.865	0.393	1.4985317133E+002	2.3753166452E+001	-2.8470446388E+001	0.292	2.255	2.075
138.213	1.602	216.168	0.384	1.2868348741E+002	1.9649369670E+001	-2.6310730754E+001	0.265	2.261	2.064
138.977	1.449	216.452	0.378	1.0962315583E+002	1.6026950798E+001	-2.5977323157E+001	0.239	2.268	2.052
139.312	1.389	216.584	0.400	1.0077296098E+002	1.4342375680E+001	-2.6050564901E+001	0.224	2.268	2.044
140.077	1.250	216.892	0.429	8.1528765398E+001	1.0806247772E+001	-2.5569041659E+001	0.189	2.265	2.015
140.841	1.151	217.240	0.447	6.1677013712E+001	7.3167876174E+000	-2.3915945633E+001	0.146	2.252	1.973
141.606	1.039	217.575	0.450	4.4960459011E+001	4.5902666157E+000	-2.0985789897E+001	0.105	2.223	1.905
142.370	0.945	217.928	0.442	2.9589016586E+001	2.3851946910E+000	-1.7432065148E+001	0.076	2.181	1.830
143.034	0.836	218.207	0.459	1.9557819799E+001	1.3535713762E+000	-1.4894758522E+001	0.076	2.163	1.803
143.799	0.761	218.583	0.459	8.3600785770E+000	5.1016554472E-001	-1.2790960294E+001	0.076	2.297	1.907

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)
48.138	0.765	0.901	-31.975	-2.707	-2.439	21.796	19.643
48.902	0.765	0.901	-31.975	-8.120	-7.318	26.477	23.862
49.667	0.765	0.901	-31.975	-13.533	-12.196	31.633	28.509
50.431	0.765	0.901	-31.975	-18.946	-17.075	37.396	33.703
51.196	0.765	0.901	-31.975	-24.359	-21.953	43.862	39.531
51.960	0.765	0.901	-31.975	-29.772	-26.832	51.565	46.473
52.725	0.765	0.901	-31.975	-35.185	-31.711	60.111	54.176
53.489	0.765	0.901	-31.975	-40.598	-36.589	68.637	61.860
54.254	0.765	0.901	-31.975	-46.011	-41.468	74.931	67.532
55.018	0.765	0.901	-31.975	-51.424	-46.346	84.019	75.723
55.783	0.665	0.784	-31.975	-56.484	-44.263	93.536	73.299
56.448	0.765	0.887	-30.487	-59.570	-52.849	109.579	97.216
57.212	0.765	0.887	-30.487	-64.592	-57.305	120.086	106.538
57.977	0.765	0.887	-30.487	-69.615	-61.761	130.911	116.141
58.741	0.765	0.887	-30.487	-74.637	-66.216	138.132	122.547
59.506	0.640	0.743	-30.487	-79.251	-58.888	144.754	107.561
60.146	0.765	0.855	-26.538	-75.550	-64.562	156.433	133.681
60.911	0.765	0.855	-26.538	-79.574	-68.000	160.744	137.365
61.675	0.765	0.855	-26.538	-83.597	-71.438	168.366	143.878

62.440	0.025	0.028	-26.538	-85.675	-2.437	165.504	4.708
62.465	0.535	0.571	-20.398	-69.178	-39.479	174.757	99.730
63.000	0.765	0.816	-20.398	-71.520	-58.336	178.370	145.490
63.765	0.471	0.502	-20.398	-73.825	-37.063	181.968	91.354
64.235	0.765	0.781	-11.944	-43.259	-33.804	182.397	142.531
65.000	0.765	0.781	-11.944	-44.467	-34.748	184.485	144.163
65.764	0.369	0.377	-11.944	-45.362	-17.090	185.938	70.050
66.133	0.765	0.767	-4.873	-13.610	-10.442	179.489	137.720
66.897	0.765	0.767	-4.873	-13.868	-10.641	180.434	138.445
67.662	0.021	0.021	-4.873	-14.001	-0.296	179.194	3.785
67.683	0.765	0.765	2.536	22.341	17.097	170.316	130.337
68.447	0.765	0.765	2.536	22.591	17.288	169.329	129.582
69.212	0.288	0.288	2.536	22.764	6.565	169.888	48.997
69.500	0.765	0.772	8.004	49.779	38.431	161.029	124.320
70.264	0.765	0.772	8.004	50.067	38.654	161.336	124.557
71.029	0.535	0.540	8.004	50.312	27.165	161.758	87.338
71.564	0.765	0.780	11.376	66.540	51.890	156.383	121.953
72.328	0.765	0.780	11.376	66.705	52.019	156.644	122.157
73.093	0.765	0.780	11.376	66.870	52.148	156.901	122.357
73.857	0.477	0.487	11.376	67.005	32.620	157.099	76.480
74.334	0.765	0.782	11.999	70.024	54.730	156.463	122.291
75.099	0.765	0.782	11.999	70.155	54.833	156.712	122.485
75.863	0.765	0.782	11.999	70.286	54.935	156.963	122.682
76.628	0.144	0.147	11.999	70.363	10.326	157.113	23.057
76.772	0.765	0.784	12.748	73.888	57.916	156.341	122.546
77.536	0.765	0.784	12.748	73.973	57.982	156.522	122.688
78.301	0.710	0.728	12.748	74.054	53.882	156.690	114.008
79.010	0.765	0.786	13.543	77.752	61.143	155.900	122.597
79.775	0.765	0.786	13.543	77.781	61.166	155.978	122.658
80.539	0.401	0.412	13.543	77.803	32.069	156.031	64.313
80.940	0.205	0.211	13.543	77.824	16.434	156.095	32.963
81.145	0.765	0.789	14.384	81.657	64.449	155.210	122.501
81.910	0.765	0.789	14.384	81.696	64.479	155.327	122.593
82.674	0.573	0.592	14.384	81.729	48.355	155.406	91.945
83.247	0.765	0.792	15.149	85.135	67.431	154.600	122.449
84.012	0.765	0.792	15.149	85.112	67.412	154.635	122.477
84.776	0.540	0.559	15.149	85.092	47.574	154.652	86.463
85.316	0.765	0.795	15.909	88.360	70.243	153.805	122.269
86.081	0.765	0.795	15.909	88.270	70.171	153.779	122.249
86.845	0.571	0.594	15.909	88.191	52.369	153.610	91.215
87.416	0.765	0.798	16.636	91.194	72.765	152.743	121.876
88.181	0.765	0.798	16.636	91.035	72.638	152.617	121.775
88.945	0.610	0.636	16.636	90.892	57.850	152.439	97.023
89.555	0.765	0.801	17.313	93.552	74.917	151.575	121.381
90.320	0.765	0.801	17.313	93.325	74.735	151.366	121.214
91.084	0.706	0.740	17.313	93.106	68.865	151.180	111.819
91.790	0.765	0.803	17.773	94.748	76.067	150.466	120.799
92.555	0.765	0.803	17.773	94.472	75.845	150.175	120.565
93.319	0.631	0.663	17.773	94.220	62.442	149.681	99.198
93.950	0.765	0.805	18.253	95.872	77.179	148.812	119.798
94.715	0.765	0.805	18.253	95.543	76.914	148.284	119.372
95.479	0.593	0.625	18.253	95.250	59.525	147.740	92.327
96.073	0.765	0.807	18.744	96.853	78.193	146.806	118.522
96.837	0.413	0.436	18.744	96.556	42.067	146.277	63.729
97.250	0.765	0.807	18.744	96.309	77.754	146.037	117.900
98.015	0.157	0.166	18.744	96.137	15.966	145.960	24.240
98.172	0.765	0.810	19.234	97.816	79.203	145.155	117.534
98.936	0.765	0.810	19.234	97.473	78.926	144.868	117.302
99.701	0.581	0.615	19.234	97.172	59.775	144.517	88.899
100.282	0.765	0.812	19.721	98.662	80.129	143.840	116.820
101.046	0.765	0.812	19.721	98.262	79.804	143.550	116.584
101.811	0.569	0.605	19.721	97.912	59.189	143.138	86.528
102.380	0.765	0.815	20.202	99.287	80.883	142.461	116.054
103.144	0.765	0.815	20.202	98.827	80.508	142.212	115.851
103.909	0.591	0.630	20.202	98.419	62.004	141.392	89.077
104.500	0.765	0.817	20.669	99.635	81.413	140.414	114.734

105.265	0.765	0.817	20.669	99.114	80.988	139.880	114.298
106.029	0.627	0.670	20.669	98.641	66.087	139.034	93.149
106.656	0.765	0.820	21.112	99.660	81.674	138.073	113.154
107.420	0.765	0.820	21.112	99.082	81.200	137.303	112.523
108.185	0.698	0.748	21.112	98.528	73.675	136.389	101.986
108.882	0.208	0.223	21.747	100.281	22.406	135.445	30.263
109.090	0.765	0.823	21.747	99.788	82.135	134.908	111.042
109.855	0.765	0.823	21.747	98.981	81.471	133.973	110.273
110.619	0.403	0.434	21.747	98.365	42.700	133.362	57.892
111.022	0.765	0.827	22.413	99.814	82.545	132.171	109.304
111.787	0.765	0.827	22.413	98.909	81.796	131.380	108.650
112.551	0.576	0.623	22.413	98.116	61.090	130.480	81.242
113.127	0.765	0.831	23.095	99.326	82.552	129.904	107.967
113.891	0.765	0.831	23.095	98.317	81.714	128.816	107.063
114.656	0.548	0.596	23.095	97.451	58.046	127.410	75.890
115.204	0.765	0.835	23.769	98.459	82.251	125.639	104.956
115.968	0.765	0.835	23.769	97.344	81.319	124.315	103.850
116.733	0.575	0.629	23.769	96.366	60.582	122.712	77.144
117.308	0.765	0.840	24.438	97.135	81.569	120.947	101.566
118.073	0.765	0.840	24.438	95.910	80.541	119.525	100.372
118.837	0.163	0.179	24.438	95.167	17.016	118.717	21.227
119.000	0.387	0.425	24.438	94.702	40.261	117.792	50.078
119.387	0.765	0.844	25.099	95.317	80.470	116.920	98.707
120.152	0.765	0.844	25.099	93.880	79.256	115.788	97.752
120.916	0.578	0.638	25.099	92.618	59.118	114.264	72.935
121.494	0.765	0.849	25.732	92.789	78.748	112.607	95.567
122.259	0.765	0.849	25.732	91.240	77.433	111.192	94.366
123.023	0.616	0.684	25.732	89.842	61.418	109.597	74.923
123.639	0.765	0.853	26.323	89.678	76.492	107.859	91.999
124.404	0.765	0.853	26.323	88.022	75.079	106.007	90.420
125.168	0.332	0.370	26.323	86.834	32.162	104.301	38.632
125.500	0.371	0.414	26.323	86.022	35.616	103.568	42.880
125.871	0.765	0.857	26.847	85.637	73.380	101.881	87.299
126.636	0.765	0.857	26.847	83.671	71.696	100.135	85.803
127.400	0.624	0.699	26.847	81.886	57.266	98.076	68.588
128.024	0.765	0.861	27.394	81.048	69.788	95.955	82.625
128.789	0.765	0.861	27.394	78.976	68.004	93.891	80.846
129.553	0.587	0.662	27.394	77.145	51.035	91.851	60.764
130.140	0.765	0.865	27.950	76.176	65.928	89.680	77.615
130.905	0.325	0.368	27.950	74.622	27.453	88.608	32.599
131.230	0.765	0.865	27.950	72.849	63.049	86.270	74.664
131.995	0.237	0.269	27.950	71.133	19.113	84.307	22.653
132.232	0.765	0.870	28.503	70.169	61.044	82.349	71.641
132.996	0.765	0.870	28.503	67.434	58.665	80.099	69.683
133.761	0.580	0.660	28.503	65.029	42.946	77.775	51.364
134.341	0.765	0.876	29.219	63.451	55.582	75.024	65.719
135.106	0.765	0.876	29.219	60.562	53.051	72.493	63.502
135.870	0.765	0.876	29.219	57.674	50.521	69.808	61.150
136.635	0.049	0.056	29.219	56.137	3.145	68.641	3.845
136.684	0.765	0.881	29.787	55.133	48.567	66.479	58.561
137.448	0.765	0.881	29.787	52.121	45.914	63.817	56.217
138.213	0.765	0.881	29.787	49.109	43.260	61.060	53.788
138.977	0.335	0.386	29.787	46.944	18.109	59.536	22.966
139.312	0.765	0.886	30.314	45.156	39.990	57.226	50.679
140.077	0.765	0.886	30.314	42.027	37.219	54.775	48.509
140.841	0.765	0.886	30.314	38.898	34.449	51.735	45.817
141.606	0.765	0.886	30.314	35.770	31.678	48.893	43.300
142.370	0.664	0.769	30.314	32.847	25.260	45.802	35.223
143.034	0.765	0.888	30.596	30.045	26.686	43.116	38.295
143.799	0.765	0.888	30.596	26.854	23.851	40.405	35.886

LEGENDA SIMBOLI

X(m) : Ascissa sinistra concio

dx(m) : Larghezza concio

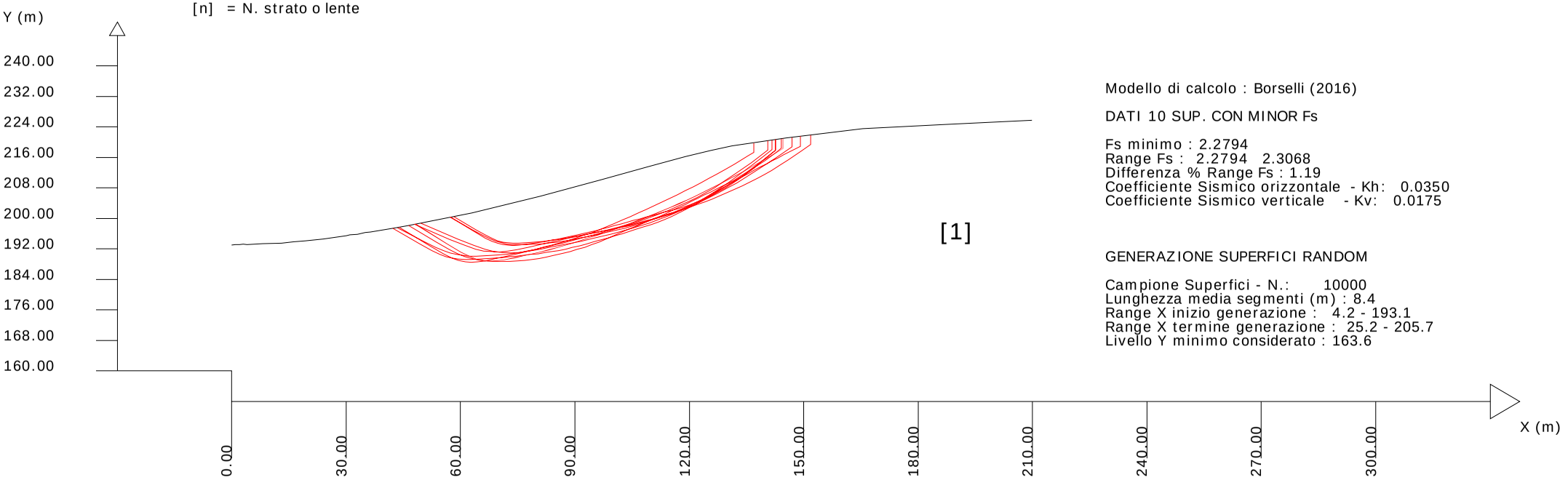
dl(m) : lunghezza base concio

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

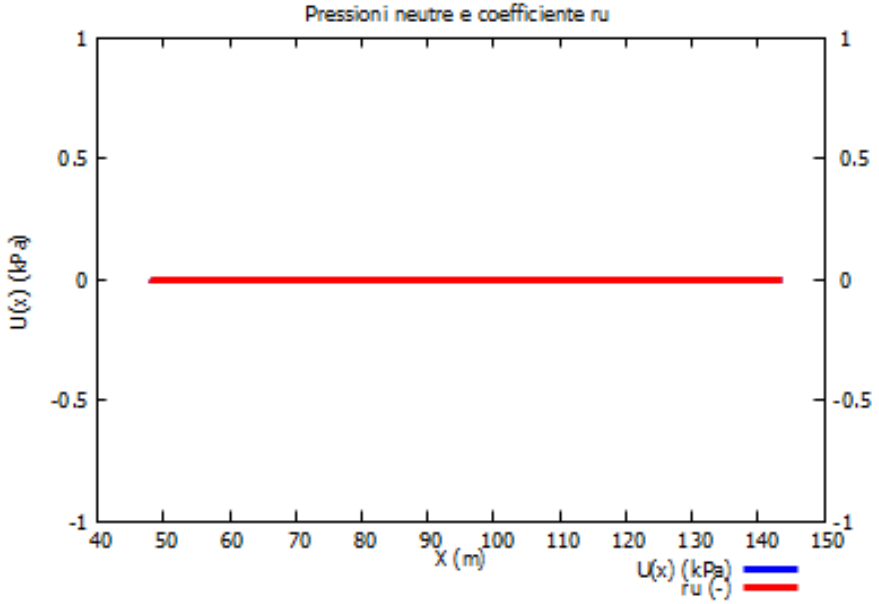
Fs minimo : 2.2794
Range Fs : 2.2794 2.3068
Differenza % Range Fs : 1.19
Coefficiente Sismico orizzontale - Kh: 0.0350
Coefficiente Sismico verticale - Kv: 0.0175

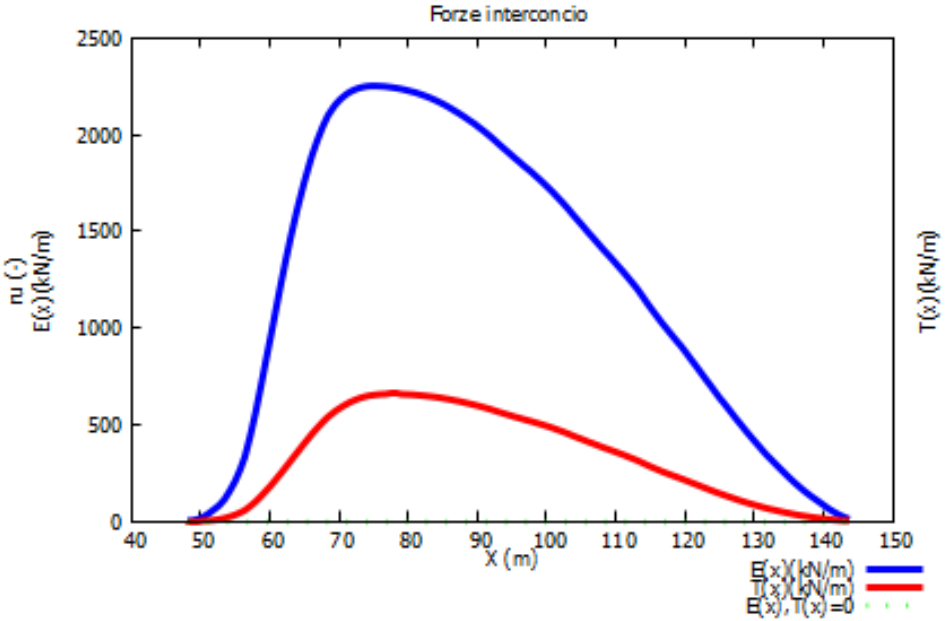
GENERAZIONE SUPERFICI RANDOM

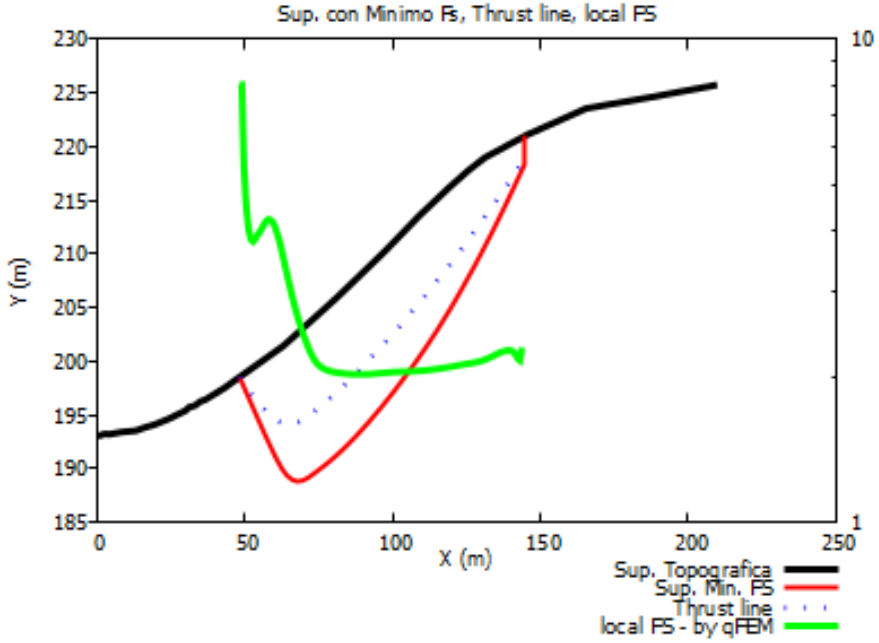
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 8.4
Range X inizio generazione : 4.2 - 193.1
Range X termine generazione : 25.2 - 205.7
Livello Y minimo considerato : 163.6

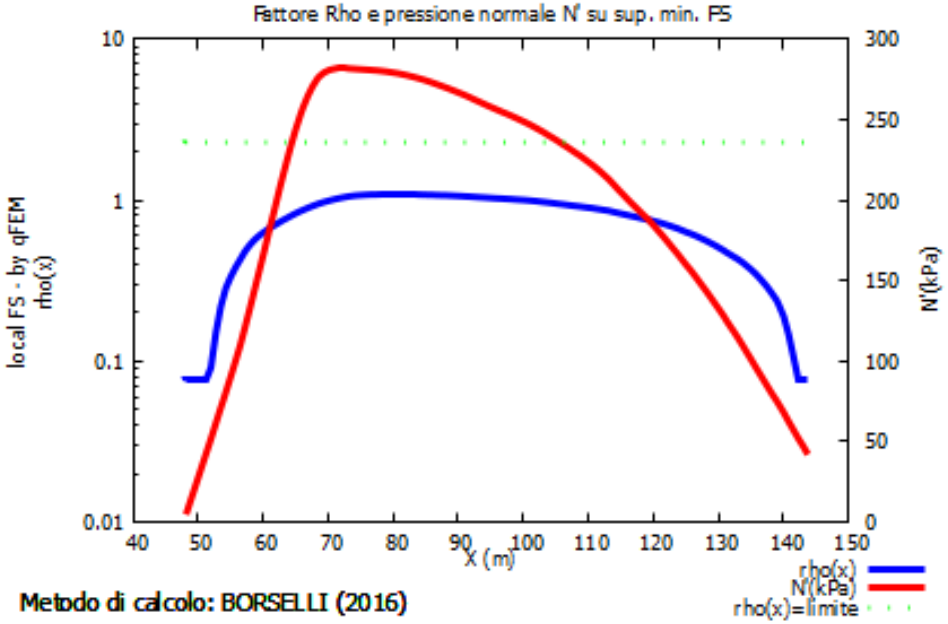
Parametri Geotecnici degli strati # ----------

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





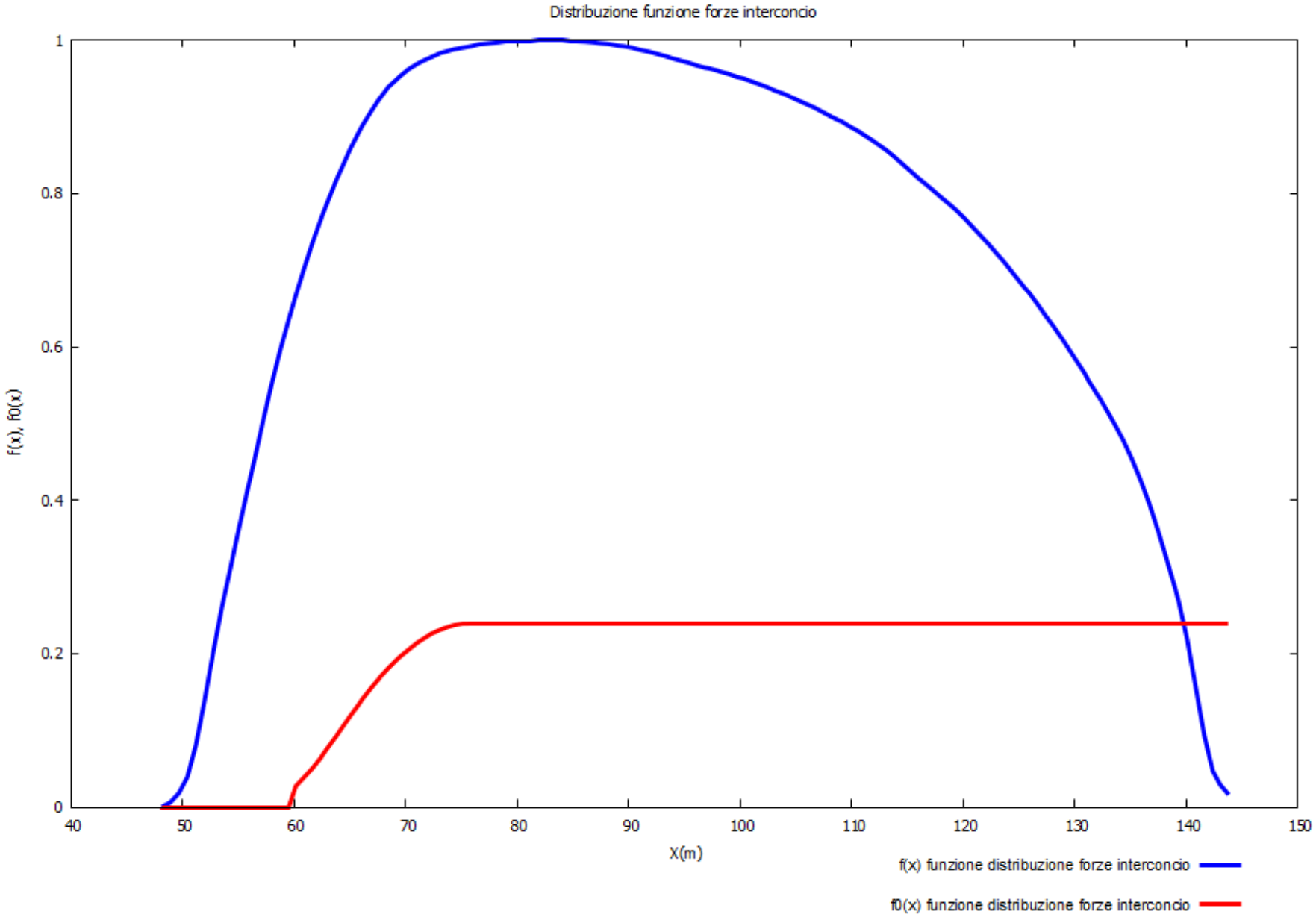


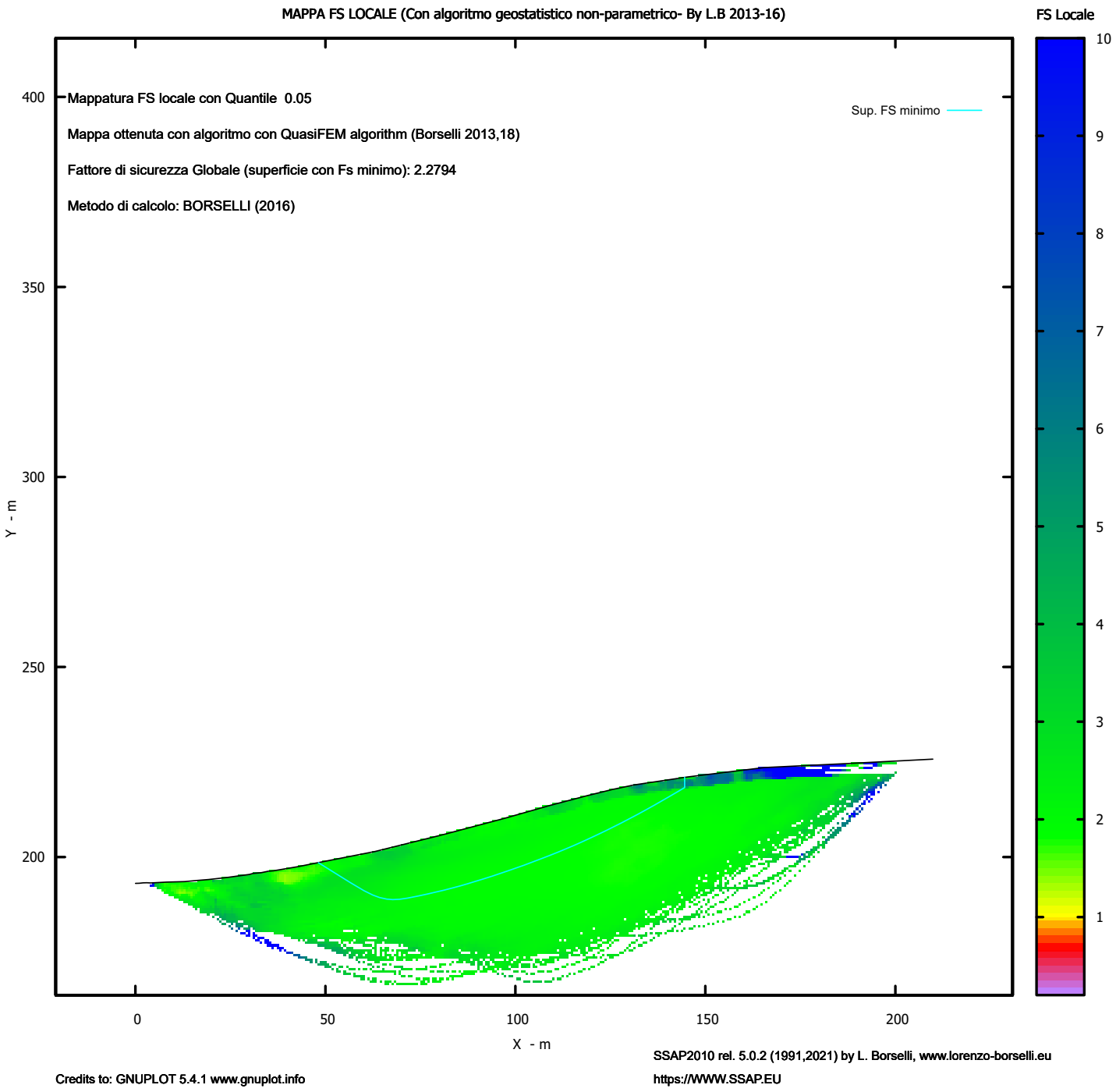


Metodo di calcolo: BORSELLI (2016)

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

18/11/21 13:16


Distribuzione funzione forze interconcio
f(x), f0(x)
X(m)
0
0.2
0.4
0.6
0.8
1
40
50
60
70
80
90
100
110
120
130
140
150
f(x) funzione distribuzione forze interconcio
f0(x) funzione distribuzione forze interconcio



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 GUGLIELMO\VERIFICA 2\NONDRENATA\MORG\MORG.txt
Data: 18/11/2021
Localita' :
Descrizione:
Modello pendio: NON 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	193.05	-	-	-	-	-	-
1.00	193.07	-	-	-	-	-	-
2.00	193.18	-	-	-	-	-	-
3.00	193.21	-	-	-	-	-	-
4.00	193.17	-	-	-	-	-	-
8.15	193.38	-	-	-	-	-	-
13.00	193.51	-	-	-	-	-	-
16.23	193.82	-	-	-	-	-	-
19.26	194.07	-	-	-	-	-	-
24.00	194.59	-	-	-	-	-	-
30.00	195.40	-	-	-	-	-	-
31.00	195.69	-	-	-	-	-	-
33.00	195.85	-	-	-	-	-	-
35.00	196.26	-	-	-	-	-	-
36.37	196.37	-	-	-	-	-	-
43.00	197.49	-	-	-	-	-	-
46.39	198.16	-	-	-	-	-	-
63.00	201.42	-	-	-	-	-	-
80.94	205.87	-	-	-	-	-	-
97.25	210.20	-	-	-	-	-	-
109.09	213.57	-	-	-	-	-	-
119.00	216.15	-	-	-	-	-	-
125.50	217.74	-	-	-	-	-	-
131.23	218.96	-	-	-	-	-	-
145.37	221.07	-	-	-	-	-	-
165.50	223.54	-	-	-	-	-	-
187.10	224.58	-	-	-	-	-	-
209.89	225.75	-	-	-	-	-	-

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)*: 8.4 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 4.20 193.10
LIVELLO MINIMO CONSIDERATO (Ymin): 184.00
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 25.19 205.69
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) 1.2764 - Min. - X Y Lambda= 0.1928
48.41 198.56
54.88 192.18
57.80 189.42
59.64 187.87
61.05 186.89
62.54 186.13
63.74 185.70
65.15 185.40
66.73 185.25
68.90 185.19
70.82 185.15
72.59 185.13
74.28 185.12
75.94 185.13
77.58 185.15
79.24 185.19
80.91 185.24
82.63 185.30
84.32 185.35
85.98 185.39
87.63 185.43

89.29 185.45
90.94 185.46
92.60 185.46
94.27 185.45
95.96 185.43
97.65 185.41
99.32 185.38
100.98 185.35
102.64 185.31
104.34 185.27
106.06 185.22
107.85 185.17
109.72 185.11
111.35 185.12
112.90 185.20
114.37 185.36
115.96 185.61
117.43 185.92
118.99 186.33
120.63 186.83
122.52 187.49
124.30 188.10
126.01 188.67
127.69 189.22
129.34 189.75
131.00 190.27
132.67 190.78
134.36 191.29
136.10 191.80
137.77 192.31
139.42 192.83
141.04 193.37
142.69 193.95
144.32 194.53
145.96 195.15
147.64 195.80
149.38 196.50
151.08 197.19
152.74 197.89
154.39 198.59
156.04 199.32
157.70 200.06
159.39 200.82
161.13 201.63
162.95 202.49
164.61 203.32
166.21 204.20
167.75 205.11
169.37 206.14
170.93 207.19
172.53 208.34
174.20 209.60
176.02 211.05
177.75 212.40
179.44 213.70
181.09 214.96
182.17 215.76
182.17 224.34

Fattore di sicurezza (FS) 1.3405 - N.2 -- X Y Lambda= 0.1826
53.88 199.63
60.37 194.23
63.41 191.81
65.42 190.36
67.05 189.33

68.69 188.50
70.13 187.89
71.74 187.38
73.50 186.95
75.74 186.52
77.63 186.22
79.36 186.00
80.98 185.86
82.67 185.78
84.25 185.77
85.91 185.82
87.64 185.94
89.57 186.12
91.41 186.29
93.18 186.44
94.93 186.58
96.66 186.71
98.39 186.82
100.13 186.92
101.89 187.02
103.69 187.10
105.44 187.20
107.18 187.30
108.90 187.42
110.63 187.55
112.36 187.69
114.09 187.85
115.84 188.02
117.63 188.20
119.39 188.39
121.14 188.59
122.87 188.79
124.61 189.00
126.36 189.22
128.14 189.46
129.96 189.71
131.87 189.97
133.59 190.27
135.26 190.60
136.86 190.99
138.56 191.45
140.17 191.95
141.86 192.54
143.62 193.20
145.58 194.00
147.39 194.77
149.13 195.55
150.82 196.34
152.54 197.18
154.22 198.04
155.94 198.95
157.69 199.92
159.54 200.97
161.32 202.01
163.07 203.05
164.79 204.09
166.52 205.16
168.24 206.24
169.98 207.35
171.75 208.50
173.58 209.71
175.34 210.90
177.06 212.10
178.76 213.31
180.49 214.58
181.52 215.35

181.52 224.31

Fattore di sicurezza (FS) 1.3484 - N.3 -- X Y Lambda= 0.1753

39.13 196.84
50.62 191.81
56.12 189.53
59.84 188.16
62.98 187.18
66.01 186.43
68.80 185.90
71.78 185.49
74.91 185.21
78.57 185.02
81.94 184.89
85.16 184.79
88.29 184.75
91.42 184.74
94.53 184.77
97.72 184.85
101.04 184.97
104.59 185.14
107.75 185.38
110.78 185.72
113.68 186.16
116.75 186.73
119.67 187.39
122.75 188.20
125.99 189.17
129.68 190.38
132.95 191.54
136.06 192.76
139.03 194.02
142.11 195.46
145.06 196.94
148.10 198.57
151.22 200.36
154.61 202.41
157.92 204.41
161.15 206.37
164.36 208.32
167.52 210.24
171.10 212.42
175.06 214.84
176.17 215.52
176.17 224.05

Fattore di sicurezza (FS) 1.3581 - N.4 -- X Y Lambda= 0.2019

44.76 197.84
51.73 191.63
54.88 188.96
56.87 187.47
58.40 186.53
60.01 185.82
61.32 185.42
62.86 185.17
64.59 185.08
66.94 185.10
69.00 185.15
70.89 185.21
72.70 185.30
74.48 185.42
76.22 185.56
77.99 185.72
79.79 185.91

81.66	186.13
83.50	186.34
85.31	186.54
87.11	186.74
88.90	186.92
90.70	187.10
92.51	187.27
94.35	187.44
96.22	187.60
98.02	187.78
99.79	187.98
101.53	188.21
103.30	188.47
105.04	188.75
106.81	189.06
108.60	189.39
110.47	189.77
112.31	190.14
114.12	190.51
115.93	190.87
117.73	191.22
119.54	191.57
121.36	191.92
123.21	192.27
125.09	192.63
126.88	192.99
128.63	193.39
130.36	193.81
132.13	194.27
133.88	194.76
135.68	195.30
137.55	195.90
139.59	196.58
141.40	197.25
143.13	197.95
144.78	198.70
146.53	199.57
148.18	200.47
149.90	201.47
151.68	202.58
153.64	203.88
155.53	205.14
157.37	206.37
159.18	207.59
160.97	208.82
162.78	210.06
164.60	211.33
166.47	212.64
168.39	213.99
169.45	214.71
169.45	223.73

Fattore di sicurezza (FS) 1.3668 - N.5 -- X Y Lambda= 0.1730

50.39	198.95
58.75	194.04
62.69	191.84
65.31	190.52
67.48	189.60
69.63	188.88
71.54	188.37
73.62	187.97
75.82	187.69
78.47	187.46
80.93	187.27
83.28	187.10

85.57 186.95
87.82 186.82
90.08 186.70
92.37 186.59
94.73 186.50
97.18 186.41
99.43 186.38
101.61 186.41
103.73 186.50
105.95 186.66
108.07 186.86
110.26 187.14
112.51 187.48
114.97 187.91
117.32 188.31
119.61 188.68
121.86 189.02
124.12 189.35
126.38 189.67
128.68 189.97
131.06 190.27
133.57 190.57
135.81 190.91
137.97 191.31
140.04 191.77
142.23 192.35
144.31 192.98
146.49 193.73
148.75 194.59
151.29 195.62
153.66 196.62
155.94 197.63
158.17 198.64
160.41 199.69
162.63 200.78
164.91 201.92
167.27 203.15
169.80 204.49
172.06 205.78
174.24 207.13
176.33 208.53
178.53 210.11
180.88 211.96
183.60 214.24
185.73 216.11
185.73 224.51

Fattore di sicurezza (FS) 1.3670 - N.6 -- X Y Lambda= 0.1710
39.93 196.97
53.90 191.94
60.62 189.65
65.18 188.29
69.04 187.34
72.76 186.65
76.21 186.18
79.86 185.85
83.71 185.68
88.14 185.63
92.23 185.64
96.15 185.69
99.96 185.80
103.78 185.96
107.58 186.17
111.48 186.44
115.54 186.78

119.90 187.19
123.76 187.67
127.45 188.28
130.97 189.00
134.70 189.92
138.26 190.95
142.02 192.20
146.03 193.68
150.65 195.53
154.63 197.27
158.38 199.09
161.93 201.00
165.67 203.21
169.63 205.81
174.24 209.09
180.98 214.19
183.24 215.96
183.24 224.39

Fattore di sicurezza (FS) 1.3692 - N.7 -- X Y Lambda= 0.1797
56.98 200.24
66.93 193.32
71.50 190.30
74.46 188.57
76.83 187.43
79.25 186.57
81.33 186.04
83.67 185.69
86.25 185.52
89.57 185.48
92.49 185.49
95.19 185.55
97.76 185.66
100.34 185.82
102.88 186.04
105.49 186.31
108.21 186.65
111.18 187.06
113.83 187.51
116.37 188.02
118.81 188.59
121.36 189.28
123.80 190.03
126.33 190.90
128.98 191.89
131.92 193.08
134.64 194.22
137.27 195.38
139.83 196.55
142.42 197.79
144.96 199.06
147.57 200.41
150.25 201.85
153.10 203.43
155.75 204.96
158.34 206.52
160.86 208.11
163.45 209.81
166.28 211.76
169.49 214.07
170.42 214.76
170.42 223.78

Fattore di sicurezza (FS) 1.3739 - N.8 -- X Y Lambda= 0.1831

39.70 196.93
51.36 191.79
56.91 189.47
60.66 188.09
63.80 187.11
66.86 186.38
69.66 185.87
72.66 185.49
75.85 185.25
79.59 185.11
83.00 185.03
86.24 185.01
89.36 185.04
92.52 185.13
95.64 185.28
98.86 185.48
102.24 185.75
105.93 186.10
109.13 186.52
112.16 187.05
115.01 187.69
118.09 188.53
120.94 189.46
123.96 190.58
127.11 191.90
130.69 193.53
134.09 195.05
137.37 196.51
140.59 197.91
143.77 199.28
146.96 200.63
150.19 201.98
153.49 203.34
156.90 204.72
160.08 206.09
163.19 207.50
166.22 208.97
169.37 210.58
172.78 212.44
176.67 214.68
177.79 215.35
177.79 224.13

Fattore di sicurezza (FS) 1.3765 - N.9 -- X Y Lambda= 0.1744
48.62 198.60
62.72 192.02
69.26 189.15
73.56 187.53
77.07 186.50
80.60 185.81
83.72 185.45
87.15 185.32
90.88 185.42
95.49 185.78
99.61 186.15
103.47 186.57
107.17 187.04
110.88 187.58
114.55 188.18
118.32 188.87
122.26 189.66
126.55 190.58
130.34 191.52
133.95 192.55
137.40 193.69

141.05 195.05
144.49 196.48
148.07 198.12
151.78 199.96
155.87 202.14
159.85 204.25
163.72 206.30
167.56 208.33
171.32 210.32
175.58 212.56
180.30 215.05
181.40 215.63
181.40 224.31

Fattore di sicurezza (FS) 1.3778 - N.10 -- X Y Lambda= 0.1756
45.34 197.95
58.24 192.15
64.32 189.57
68.38 188.06
71.75 187.04
75.08 186.31
78.08 185.84
81.34 185.54
84.84 185.42
89.06 185.45
92.82 185.54
96.36 185.70
99.75 185.93
103.19 186.24
106.56 186.62
110.06 187.09
113.73 187.65
117.77 188.35
121.30 189.08
124.65 189.90
127.83 190.83
131.22 191.98
134.41 193.20
137.78 194.64
141.32 196.30
145.34 198.32
148.99 200.25
152.49 202.18
155.87 204.14
159.32 206.24
163.08 208.65
167.35 211.53
172.49 215.13
172.49 223.88

---------- 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	1.276	15527.5	12165.4	2145.5	Surplus
2	1.341	14752.7	11005.1	2647.2	Surplus
3	1.348	15507.6	11500.6	2856.9	Surplus
4	1.358	14348.7	10565.6	2726.5	Surplus
5	1.367	15282.3	11181.2	2983.0	Surplus
6	1.367	16055.6	11745.3	3135.9	Surplus
7	1.369	13465.2	9834.5	2647.2	Surplus
8	1.374	15442.1	11239.8	3078.3	Surplus
9	1.376	14976.6	10880.5	3008.1	Surplus

10 1.378 14503.8 10526.5 2924.7 Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 2145.5

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)
48.410	1.074	-44.62	13.87	0.00	0.00	0.00	100.00
49.484	1.074	-44.62	41.62	0.00	0.00	0.00	100.00
50.558	1.074	-44.62	69.36	0.00	0.00	0.00	100.00
51.631	1.074	-44.62	97.11	0.00	0.00	0.00	100.00
52.705	1.074	-44.62	124.85	0.00	0.00	0.00	100.00
53.778	1.074	-44.62	152.60	0.00	0.00	0.00	100.00
54.852	0.025	-44.62	3.85	0.00	0.00	0.00	100.00
54.877	1.074	-43.37	180.49	0.00	0.00	0.00	100.00
55.950	1.074	-43.37	207.25	0.00	0.00	0.00	100.00
57.024	0.774	-43.37	165.96	0.00	0.00	0.00	100.00
57.798	1.074	-40.07	252.08	0.00	0.00	0.00	100.00
58.871	0.764	-40.07	194.21	0.00	0.00	0.00	100.00
59.635	1.074	-34.78	292.01	0.00	0.00	0.00	100.00
60.709	0.344	-34.78	97.91	0.00	0.00	0.00	100.00
61.052	1.074	-26.88	317.39	0.00	0.00	0.00	100.00
62.126	0.413	-26.88	126.43	0.00	0.00	0.00	100.00
62.539	0.461	-19.92	143.81	0.00	0.00	0.00	100.00
63.000	0.739	-19.92	235.86	0.00	0.00	0.00	100.00
63.739	1.074	-11.90	352.84	0.00	0.00	0.00	100.00
64.813	0.332	-11.90	111.40	0.00	0.00	0.00	100.00
65.145	1.074	-5.56	365.60	0.00	0.00	0.00	100.00
66.219	0.511	-5.56	176.71	0.00	0.00	0.00	100.00
66.729	1.074	-1.56	376.73	0.00	0.00	0.00	100.00
67.803	1.074	-1.56	383.19	0.00	0.00	0.00	100.00
68.876	0.022	-1.56	7.77	0.00	0.00	0.00	100.00
68.898	1.074	-1.17	389.70	0.00	0.00	0.00	100.00
69.972	0.848	-1.17	312.42	0.00	0.00	0.00	100.00
70.820	1.074	-0.71	400.88	0.00	0.00	0.00	100.00
71.893	0.694	-0.71	262.40	0.00	0.00	0.00	100.00
72.587	1.074	-0.23	410.84	0.00	0.00	0.00	100.00
73.661	0.624	-0.23	241.37	0.00	0.00	0.00	100.00
74.285	1.074	0.28	420.08	0.00	0.00	0.00	100.00
75.358	0.581	0.28	229.76	0.00	0.00	0.00	100.00
75.939	1.074	0.75	428.77	0.00	0.00	0.00	100.00
77.013	0.569	0.75	229.46	0.00	0.00	0.00	100.00
77.582	1.074	1.22	437.10	0.00	0.00	0.00	100.00
78.655	0.582	1.22	239.37	0.00	0.00	0.00	100.00
79.238	1.074	1.68	445.21	0.00	0.00	0.00	100.00
80.311	0.603	1.68	252.24	0.00	0.00	0.00	100.00
80.914	0.026	2.12	10.80	0.00	0.00	0.00	100.00
80.940	1.074	2.12	453.45	0.00	0.00	0.00	100.00
82.014	0.621	2.12	264.64	0.00	0.00	0.00	100.00
82.634	1.074	1.79	461.98	0.00	0.00	0.00	100.00
83.708	0.610	1.79	265.08	0.00	0.00	0.00	100.00
84.318	1.074	1.44	470.66	0.00	0.00	0.00	100.00
85.392	0.590	1.44	261.08	0.00	0.00	0.00	100.00

85.982	1.074	1.09	479.47	0.00	0.00	0.00	100.00
87.055	0.579	1.09	261.06	0.00	0.00	0.00	100.00
87.635	1.074	0.74	488.44	0.00	0.00	0.00	100.00
88.708	0.583	0.74	267.93	0.00	0.00	0.00	100.00
89.292	1.074	0.39	497.66	0.00	0.00	0.00	100.00
90.365	0.576	0.39	269.38	0.00	0.00	0.00	100.00
90.941	1.074	0.03	507.05	0.00	0.00	0.00	100.00
92.014	0.583	0.03	278.01	0.00	0.00	0.00	100.00
92.598	1.074	-0.31	516.71	0.00	0.00	0.00	100.00
93.671	0.596	-0.31	289.74	0.00	0.00	0.00	100.00
94.267	1.074	-0.65	526.66	0.00	0.00	0.00	100.00
95.341	0.622	-0.65	308.07	0.00	0.00	0.00	100.00
95.963	1.074	-0.80	536.95	0.00	0.00	0.00	100.00
97.037	0.213	-0.80	107.56	0.00	0.00	0.00	100.00
97.250	0.396	-0.80	200.24	0.00	0.00	0.00	100.00
97.646	1.074	-0.94	547.64	0.00	0.00	0.00	100.00
98.720	0.596	-0.94	307.29	0.00	0.00	0.00	100.00
99.316	1.074	-1.09	558.66	0.00	0.00	0.00	100.00
100.390	0.594	-1.09	311.94	0.00	0.00	0.00	100.00
100.983	1.074	-1.24	569.75	0.00	0.00	0.00	100.00
102.057	0.588	-1.24	315.12	0.00	0.00	0.00	100.00
102.645	1.074	-1.40	580.90	0.00	0.00	0.00	100.00
103.718	0.619	-1.40	338.14	0.00	0.00	0.00	100.00
104.337	1.074	-1.55	592.36	0.00	0.00	0.00	100.00
105.411	0.647	-1.55	360.57	0.00	0.00	0.00	100.00
106.058	1.074	-1.70	604.11	0.00	0.00	0.00	100.00
107.131	0.714	-1.70	405.92	0.00	0.00	0.00	100.00
107.846	1.074	-1.83	616.41	0.00	0.00	0.00	100.00
108.919	0.171	-1.83	98.82	0.00	0.00	0.00	100.00
109.090	0.635	-1.83	368.68	0.00	0.00	0.00	100.00
109.725	1.074	0.33	628.34	0.00	0.00	0.00	100.00
110.799	0.553	0.33	325.93	0.00	0.00	0.00	100.00
111.351	1.074	3.01	636.84	0.00	0.00	0.00	100.00
112.425	0.478	3.01	285.18	0.00	0.00	0.00	100.00
112.903	1.074	6.04	643.26	0.00	0.00	0.00	100.00
113.977	0.388	6.04	233.61	0.00	0.00	0.00	100.00
114.365	1.074	8.96	647.59	0.00	0.00	0.00	100.00
115.439	0.519	8.96	314.05	0.00	0.00	0.00	100.00
115.958	1.074	11.86	650.55	0.00	0.00	0.00	100.00
117.031	0.395	11.86	239.86	0.00	0.00	0.00	100.00
117.427	1.074	14.74	651.54	0.00	0.00	0.00	100.00
118.500	0.486	14.74	295.04	0.00	0.00	0.00	100.00
118.987	0.013	17.20	8.18	0.00	0.00	0.00	100.00
119.000	1.074	17.20	650.70	0.00	0.00	0.00	100.00
120.074	0.555	17.20	335.56	0.00	0.00	0.00	100.00
120.628	1.074	19.16	647.95	0.00	0.00	0.00	100.00
121.702	0.817	19.16	491.22	0.00	0.00	0.00	100.00
122.518	1.074	18.84	643.78	0.00	0.00	0.00	100.00
123.592	0.708	18.84	423.32	0.00	0.00	0.00	100.00
124.300	1.074	18.49	640.10	0.00	0.00	0.00	100.00
125.373	0.127	18.49	75.31	0.00	0.00	0.00	100.00
125.500	0.511	18.49	303.90	0.00	0.00	0.00	100.00
126.011	1.074	18.13	636.10	0.00	0.00	0.00	100.00
127.085	0.602	18.13	355.75	0.00	0.00	0.00	100.00
127.687	1.074	17.76	631.99	0.00	0.00	0.00	100.00
128.761	0.583	17.76	342.40	0.00	0.00	0.00	100.00
129.344	1.074	17.39	628.18	0.00	0.00	0.00	100.00
130.418	0.581	17.39	339.01	0.00	0.00	0.00	100.00
130.999	0.231	17.03	134.66	0.00	0.00	0.00	100.00
131.230	1.074	17.03	623.42	0.00	0.00	0.00	100.00
132.304	0.364	17.03	210.33	0.00	0.00	0.00	100.00
132.667	1.074	16.67	618.57	0.00	0.00	0.00	100.00
133.741	0.620	16.67	355.90	0.00	0.00	0.00	100.00
134.361	1.074	16.33	613.08	0.00	0.00	0.00	100.00
135.435	0.666	16.33	378.46	0.00	0.00	0.00	100.00
136.101	1.074	17.00	607.47	0.00	0.00	0.00	100.00

137.174	0.598	17.00	336.72	0.00	0.00	0.00	100.00
137.772	1.074	17.70	601.60	0.00	0.00	0.00	100.00
138.846	0.572	17.70	318.93	0.00	0.00	0.00	100.00
139.418	1.074	18.42	595.32	0.00	0.00	0.00	100.00
140.491	0.550	18.42	303.54	0.00	0.00	0.00	100.00
141.042	1.074	19.13	588.64	0.00	0.00	0.00	100.00
142.115	0.575	19.13	313.49	0.00	0.00	0.00	100.00
142.690	1.074	19.84	581.35	0.00	0.00	0.00	100.00
143.764	0.552	19.84	296.95	0.00	0.00	0.00	100.00
144.316	1.054	20.55	563.33	0.00	0.00	0.00	100.00
145.370	0.594	20.55	314.88	0.00	0.00	0.00	100.00
145.964	1.074	21.22	564.74	0.00	0.00	0.00	100.00
147.037	0.602	21.22	314.01	0.00	0.00	0.00	100.00
147.639	1.074	21.85	554.87	0.00	0.00	0.00	100.00
148.713	0.671	21.85	343.24	0.00	0.00	0.00	100.00
149.383	1.074	22.26	544.17	0.00	0.00	0.00	100.00
150.457	0.619	22.26	310.50	0.00	0.00	0.00	100.00
151.076	1.074	22.69	533.47	0.00	0.00	0.00	100.00
152.149	0.592	22.69	290.98	0.00	0.00	0.00	100.00
152.741	1.074	23.13	522.62	0.00	0.00	0.00	100.00
153.814	0.575	23.13	277.13	0.00	0.00	0.00	100.00
154.390	1.074	23.57	511.54	0.00	0.00	0.00	100.00
155.463	0.582	23.57	274.12	0.00	0.00	0.00	100.00
156.045	1.074	24.01	500.10	0.00	0.00	0.00	100.00
157.118	0.586	24.01	269.85	0.00	0.00	0.00	100.00
157.705	1.074	24.44	488.29	0.00	0.00	0.00	100.00
158.778	0.613	24.44	275.36	0.00	0.00	0.00	100.00
159.391	1.074	24.86	475.96	0.00	0.00	0.00	100.00
160.465	0.664	24.86	290.47	0.00	0.00	0.00	100.00
161.129	1.074	25.24	462.93	0.00	0.00	0.00	100.00
162.203	0.752	25.24	319.42	0.00	0.00	0.00	100.00
162.955	1.074	26.85	448.61	0.00	0.00	0.00	100.00
164.028	0.578	26.85	237.91	0.00	0.00	0.00	100.00
164.606	0.894	28.65	362.18	0.00	0.00	0.00	100.00
165.500	0.708	28.65	281.52	0.00	0.00	0.00	100.00
166.208	1.074	30.54	416.94	0.00	0.00	0.00	100.00
167.281	0.470	30.54	178.56	0.00	0.00	0.00	100.00
167.751	1.074	32.32	398.17	0.00	0.00	0.00	100.00
168.825	0.549	32.32	198.46	0.00	0.00	0.00	100.00
169.374	1.074	34.05	376.94	0.00	0.00	0.00	100.00
170.448	0.478	34.05	163.25	0.00	0.00	0.00	100.00
170.926	1.074	35.72	355.15	0.00	0.00	0.00	100.00
172.000	0.534	35.72	170.80	0.00	0.00	0.00	100.00
172.534	1.074	37.20	331.11	0.00	0.00	0.00	100.00
173.607	0.590	37.20	174.84	0.00	0.00	0.00	100.00
174.197	1.074	38.45	304.87	0.00	0.00	0.00	100.00
175.271	0.745	38.45	201.30	0.00	0.00	0.00	100.00
176.016	1.074	38.04	275.37	0.00	0.00	0.00	100.00
177.089	0.661	38.04	160.95	0.00	0.00	0.00	100.00
177.750	1.074	37.59	247.69	0.00	0.00	0.00	100.00
178.824	0.612	37.59	133.52	0.00	0.00	0.00	100.00
179.435	1.074	37.13	221.27	0.00	0.00	0.00	100.00
180.509	0.583	37.13	113.27	0.00	0.00	0.00	100.00
181.092	1.074	36.65	195.76	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 (--)		
48.410	0.000	198.557	-0.685	0.0000000000E+000	0.0000000000E+000	6.4845810836E+000	0.043	6.082	7.819		
49.484	0.319	197.816	-0.685	3.0213964616E+001	4.1658117353E-002	4.9802291422E+001	0.043	6.082	7.819		
50.558	0.647	197.085	-0.668	1.0693254777E+002	9.6512454846E-001	1.2490919562E+002	0.043	2.677	3.446		
51.631	1.003	196.382	-0.709	2.9841163477E+002	7.9599084033E+000	2.4628802804E+002	0.043	1.651	2.124		
52.705	1.242	195.562	-0.676	6.3574770010E+002	2.6769245051E+001	3.0203509372E+002	0.067	1.270	1.629		
53.778	1.670	194.930	-0.562	9.4692360413E+002	4.9293013196E+001	2.9728466356E+002	0.099	1.158	1.477		
54.852	2.155	194.356	-0.536	1.2740598255E+003	7.7369550590E+001	3.5722847319E+002	0.130	1.131	1.421		
54.877	2.165	194.341	-0.547	1.2829450858E+003	7.8198787427E+001	3.5840046905E+002	0.130	1.131	1.421		
55.950	2.592	193.754	-0.520	1.6658317736E+003	1.1579942226E+002	3.4225698159E+002	0.167	1.176	1.417		
57.024	3.077	193.225	-0.481	2.0178191245E+003	1.5145716392E+002	3.2311846112E+002	0.191	1.234	1.410		
57.798	3.448	192.865	-0.433	2.2651804373E+003	1.7716441471E+002	3.1271109477E+002	0.206	1.291	1.409		
58.871	3.911	192.426	-0.392	2.5904920033E+003	2.1264486320E+002	2.9821441777E+002	0.224	1.410	1.427		
59.635	4.272	192.144	-0.333	2.8157215709E+003	2.3852526689E+002	2.8268722107E+002	0.236	1.534	1.450		
60.709	4.687	191.814	-0.295	3.1009401970E+003	2.7307955927E+002	2.4658950110E+002	0.252	1.760	1.493		
61.052	4.839	191.726	-0.239	3.1836023443E+003	2.8366458499E+002	2.4081900416E+002	0.256	1.848	1.508		
62.126	5.131	191.475	-0.224	3.4432775176E+003	3.1847661775E+002	2.2938185630E+002	0.273	2.199	1.559		
62.539	5.259	191.394	-0.179	3.5359868950E+003	3.3147258189E+002	2.1459771128E+002	0.278	2.365	1.580		
63.000	5.352	191.319	-0.130	3.6298075337E+003	3.4509277820E+002	1.9095193030E+002	0.285	2.556	1.601		
63.739	5.538	191.238	-0.089	3.7561535425E+003	3.6471368050E+002	1.6494055659E+002	0.293	2.878	1.634		
64.813	5.685	191.158	-0.068	3.9239142264E+003	3.9252784587E+002	1.4895887511E+002	0.306	3.362	1.681		
65.145	5.739	191.142	-0.025	3.9726633589E+003	4.0106035661E+002	1.4223878831E+002	0.309	3.498	1.696		
66.219	5.824	191.122	-0.010	4.1099022449E+003	4.2665097348E+002	1.2617325838E+002	0.322	3.848	1.741		
66.729	5.877	191.125	0.022	4.1739158878E+003	4.3929435541E+002	1.2047795484E+002	0.328	3.976	1.764		
67.803	5.937	191.157	0.043	4.2921832829E+003	4.6415136490E+002	1.0704576206E+002	0.341	4.094	1.810		
68.876	6.027	191.217	0.056	4.4037582452E+003	4.8914396552E+002	9.3016160494E+001	0.353	4.066	1.861		
68.898	6.028	191.218	0.080	4.4057599974E+003	4.8960502939E+002	9.2755530021E+001	0.353	4.064	1.862		
69.972	6.136	191.304	0.085	4.5031296961E+003	5.1288314212E+002	8.7245990830E+001	0.364	3.883	1.916		
70.820	6.232	191.382	0.098	4.5748351213E+003	5.3059037124E+002	8.0780227739E+001	0.372	3.697	1.963		
71.893	6.355	191.492	0.104	4.6564795750E+003	5.5146604425E+002	7.3550491896E+001	0.381	3.468	2.027		
72.587	6.438	191.566	0.114	4.7064037879E+003	5.6436563455E+002	7.2509479962E+001	0.386	3.349	2.073		
73.661	6.570	191.694	0.120	4.7852018367E+003	5.8480419825E+002	7.2199945955E+001	0.394	3.220	2.156		
74.285	6.649	191.770	0.121	4.8297947247E+003	5.9639036691E+002	6.9659709799E+001	0.399	3.163	2.209		
75.358	6.773	191.900	0.121	4.9011710402E+003	6.1493416917E+002	6.4730631133E+001	0.405	3.095	2.305		
75.939	6.840	191.970	0.123	4.9382341743E+003	6.2457429834E+002	6.3385516362E+001	0.409	3.064	2.359		
77.013	6.960	192.104	0.120	5.0054985114E+003	6.4216562805E+002	5.6346286306E+001	0.415	3.014	2.465		
77.582	7.016	192.167	0.117	5.0356537893E+003	6.5009833510E+002	5.3420693753E+001	0.417	2.995	2.517		
78.655	7.121	192.295	0.117	5.0938505934E+003	6.6558268955E+002	5.0910517321E+001	0.422	2.959	2.622		
79.238	7.174	192.361	0.118	5.1224612288E+003	6.7327707521E+002	4.9776516323E+001	0.424	2.943	2.675		
80.311	7.273	192.491	0.119	5.1771966394E+003	6.8824488044E+002	4.8077451585E+001	0.429	2.909	2.778		
80.914	7.324	192.560	0.115	5.2051942570E+003	6.9601606179E+002	4.7092085606E+001	0.431	2.891	2.831		
80.940	7.326	192.563	0.125	5.2064059063E+003	6.9635686917E+002	4.7167385502E+001	0.431	2.890	2.833		
82.014	7.421	192.697	0.124	5.2591815930E+003	7.1137617367E+002	4.7783381842E+001	0.435	2.850	2.927		
82.634	7.473	192.773	0.129	5.2883502299E+003	7.1983150794E+002	4.8456846472E+001	0.437	2.827	2.975		
83.708	7.583	192.916	0.132	5.3430993207E+003	7.3600926231E+002	4.9793462081E+001	0.442	2.782	3.054		
84.318	7.643	192.995	0.136	5.3730711108E+003	7.4503037956E+002	5.0740477233E+001	0.444	2.756	3.090		
85.392	7.765	193.145	0.137	5.4306253025E+003	7.6262787006E+002	5.2520997383E+001	0.449	2.708	3.140		
85.982	7.829	193.224	0.140	5.4612619959E+003	7.7214402042E+002	5.3706321018E+001	0.452	2.683	3.156		
87.055	7.964	193.378	0.142	5.5224040374E+003	7.9133093429E+002	5.6016328009E+001	0.457	2.635	3.164		
87.635	8.032	193.458	0.144	5.5545535635E+003	8.0151930064E+002	5.7446578034E+001	0.460	2.611	3.156		
88.708	8.177	193.617	0.142	5.6200773872E+003	8.2237689795E+002	5.7836037921E+001	0.467	2.564	3.115		
89.292	8.246	193.693	0.141	5.6528078487E+003	8.3284798856E+002	5.9150672218E+001	0.470	2.543	3.080		
90.365	8.395	193.850	0.142	5.7223399758E+003	8.5506499931E+002	6.2409419460E+001	0.476	2.500	2.977		
90.941	8.469	193.927	0.137	5.7575426972E+003	8.6630157571E+002	6.2397800589E+001	0.479	2.479	2.918		
92.014	8.617	194.076	0.135	5.8270390906E+003	8.8840118097E+002	6.2399095499E+001	0.486	2.440	2.793		
92.598	8.691	194.150	0.131	5.8626852855E+003	8.9969391911E+002	6.2392004087E+001	0.489	2.421	2.726		
93.671	8.839	194.292	0.129	5.9321600492E+003	9.2161580424E+002	6.2273929554E+001	0.494	2.383	2.593		
94.267	8.915	194.365	0.125	5.9684860179E+003	9.3303547118E+002	6.2180734282E+001	0.497	2.364	2.525		
95.341	9.063	194.501	0.124	6.0376805987E+003	9.5481083085E+002	6.1902207032E+001	0.502	2.329	2.395		
95.963	9.143	194.574	0.121	6.0752606206E+003	9.6664578671E+002	6.1577201544E+001	0.505	2.309	2.327		
97.037	9.290	194.706	0.122	6.1435039905E+003	9.8832551369E+002	6.1462192538E+001	0.510	2.274	2.206		

97.250	9.318	194.731	0.114	6.1565367723E+003	9.9248240872E+002	6.0271142456E+001	0.511	2.268	2.184
97.646	9.368	194.775	0.121	6.1798382267E+003	9.9996930268E+002	6.0554339556E+001	0.512	2.256	2.145
98.720	9.519	194.908	0.122	6.2498421600E+003	1.0227575157E+003	6.3571209316E+001	0.517	2.219	2.029
99.316	9.599	194.979	0.126	6.2872149265E+003	1.0350833393E+003	6.4793588924E+001	0.520	2.200	1.971
100.390	9.759	195.119	0.127	6.3608933934E+003	1.0597531889E+003	6.6491243285E+001	0.526	2.162	1.861
100.983	9.844	195.192	0.138	6.3996589333E+003	1.0729205734E+003	6.9777953486E+001	0.528	2.142	1.807
102.057	10.024	195.349	0.144	6.4832478213E+003	1.1015716029E+003	7.6315608887E+001	0.536	2.100	1.697
102.645	10.119	195.431	0.146	6.5276271747E+003	1.1168975287E+003	7.7108812809E+001	0.540	2.079	1.642
103.718	10.306	195.592	0.148	6.6136222835E+003	1.1466073731E+003	7.8482437059E+001	0.547	2.043	1.545
104.337	10.411	195.681	0.150	6.6616120264E+003	1.1631800399E+003	7.8666866537E+001	0.551	2.022	1.494
105.411	10.604	195.845	0.145	6.7481486269E+003	1.1929328728E+003	7.3212753238E+001	0.558	1.982	1.411
106.058	10.707	195.931	0.139	6.7926398671E+003	1.2081310405E+003	6.9329469612E+001	0.561	1.959	1.370
107.131	10.893	196.085	0.140	6.8680907964E+003	1.2338309440E+003	6.5017868969E+001	0.566	1.906	1.305
107.846	11.009	196.180	0.138	6.9120209973E+003	1.2487448454E+003	6.0157080866E+001	0.568	1.869	1.269
108.919	11.195	196.332	0.139	6.9744083523E+003	1.2701493170E+003	4.9031999974E+001	0.571	1.799	1.217
109.090	11.222	196.354	0.141	6.9825420303E+003	1.2729458366E+003	4.7317373262E+001	0.571	1.788	1.211
109.725	11.335	196.446	0.148	7.0119533409E+003	1.2834779434E+003	4.3652717940E+001	0.572	1.738	1.184
110.799	11.489	196.606	0.156	7.0539797231E+003	1.2993020949E+003	3.0867066158E+001	0.574	1.643	1.144
111.351	11.580	196.700	0.169	7.0686883347E+003	1.3060025856E+003	2.3298973893E+001	0.574	1.582	1.125
112.425	11.705	196.881	0.158	7.0868133467E+003	1.3167082838E+003	7.3192119720E+000	0.574	1.464	1.090
112.903	11.744	196.946	0.158	7.0882763907E+003	1.3198835697E+003	4.5504463709E-001	0.574	1.412	1.076
113.977	11.811	197.126	0.168	7.0824851051E+003	1.3250634908E+003	-1.4150151284E+001	0.573	1.304	1.048
114.365	11.835	197.191	0.190	7.0757590472E+003	1.3257566881E+003	-1.9889989516E+001	0.572	1.268	1.039
115.439	11.879	197.405	0.199	7.0467726120E+003	1.3256407618E+003	-3.4311235056E+001	0.570	1.178	1.016
115.958	11.900	197.508	0.220	7.0271223295E+003	1.3242754739E+003	-4.1941834246E+001	0.568	1.139	1.006
117.031	11.922	197.755	0.230	6.9730050721E+003	1.3185213715E+003	-5.4027850749E+001	0.565	1.067	0.987
117.427	11.930	197.846	0.253	6.9511185181E+003	1.3156500935E+003	-6.1643643198E+001	0.563	1.046	0.982
118.500	11.929	198.127	0.262	6.8666227718E+003	1.3025353856E+003	-8.2123308514E+001	0.557	0.993	0.967
118.987	11.928	198.255	0.263	6.8259433458E+003	1.2958971872E+003	-8.3023453788E+001	0.555	0.973	0.961
119.000	11.928	198.258	0.284	6.8248248563E+003	1.2957103545E+003	-8.3173264297E+001	0.555	0.972	0.961
120.074	11.900	198.563	0.281	6.7211831575E+003	1.2775040042E+003	-1.0160644628E+002	0.548	0.938	0.949
120.628	11.882	198.717	0.276	6.6633788175E+003	1.2670161131E+003	-1.0711671687E+002	0.544	0.923	0.943
121.702	11.804	199.012	0.276	6.5423704854E+003	1.2441362740E+003	-1.1514309427E+002	0.536	0.901	0.932
122.518	11.747	199.239	0.288	6.4468414478E+003	1.2255354612E+003	-1.2162279351E+002	0.530	0.889	0.925
123.592	11.699	199.557	0.293	6.3097307924E+003	1.1979569917E+003	-1.2672591589E+002	0.520	0.879	0.915
124.300	11.661	199.761	0.297	6.2204712835E+003	1.1796106378E+003	-1.2883746969E+002	0.513	0.875	0.910
125.373	11.627	200.085	0.299	6.0776562950E+003	1.1497959858E+003	-1.1985831399E+002	0.502	0.872	0.902
125.500	11.618	200.119	0.273	6.0626850550E+003	1.1466322170E+003	-1.1897842789E+002	0.501	0.872	0.901
126.011	11.588	200.260	0.282	6.0004641070E+003	1.1334380881E+003	-1.2325443016E+002	0.496	0.872	0.898
127.085	11.543	200.566	0.270	5.8646275393E+003	1.1044104089E+003	-1.1445146916E+002	0.485	0.875	0.891
127.687	11.491	200.712	0.246	5.7997638208E+003	1.0903688950E+003	-1.0844334779E+002	0.480	0.877	0.888
128.761	11.413	200.977	0.240	5.6818725185E+003	1.0646876943E+003	-1.0400310496E+002	0.471	0.882	0.884
129.344	11.359	201.110	0.234	5.6230359261E+003	1.0517832660E+003	-1.0249315163E+002	0.466	0.885	0.882
130.418	11.278	201.365	0.231	5.5097485484E+003	1.0267236697E+003	-1.0016297597E+002	0.457	0.890	0.878
130.999	11.223	201.493	0.223	5.4532355498E+003	1.0141448471E+003	-1.0137122557E+002	0.452	0.893	0.876
131.230	11.206	201.546	0.235	5.4294276492E+003	1.0088036255E+003	-1.0336740229E+002	0.450	0.894	0.875
132.304	11.130	201.799	0.232	5.3166533943E+003	9.8328751368E+002	-1.0049216021E+002	0.441	0.898	0.872
132.667	11.099	201.880	0.236	5.2806709031E+003	9.7507437946E+002	-1.0120161765E+002	0.438	0.900	0.871
133.741	11.037	202.139	0.231	5.1648864035E+003	9.4837227938E+002	-1.0052062764E+002	0.429	0.903	0.869
134.361	10.984	202.272	0.226	5.1051430663E+003	9.3441947649E+002	-9.9166239276E+001	0.424	0.904	0.868
135.435	10.919	202.521	0.229	4.9933283714E+003	9.0812043926E+002	-1.0187867248E+002	0.414	0.903	0.866
136.101	10.872	202.669	0.234	4.9264475939E+003	8.9227921366E+002	-1.0374356847E+002	0.408	0.902	0.864
137.174	10.803	202.929	0.239	4.8094019627E+003	8.6455999538E+002	-1.0699595115E+002	0.398	0.899	0.863
137.772	10.760	203.068	0.245	4.7461059919E+003	8.4958004896E+002	-1.0895062013E+002	0.392	0.896	0.862
138.846	10.688	203.339	0.246	4.6231938460E+003	8.2067184931E+002	-1.0974294865E+002	0.382	0.891	0.862
139.418	10.640	203.473	0.239	4.5618629426E+003	8.0637422650E+002	-1.0838400942E+002	0.376	0.888	0.861
140.491	10.541	203.732	0.236	4.4431477132E+003	7.7901828684E+002	-1.0596871005E+002	0.366	0.881	0.861
141.042	10.482	203.856	0.235	4.3861238340E+003	7.6605121477E+002	-1.0602404764E+002	0.361	0.878	0.862
142.115	10.367	204.114	0.236	4.2672333171E+003	7.3928973351E+002	-1.0748908485E+002	0.352	0.872	0.863
142.690	10.299	204.245	0.240	4.2064046694E+003	7.2574882705E+002	-1.0873477412E+002	0.347	0.869	0.863
143.764	10.175	204.509	0.242	4.0836809307E+003	6.9866492438E+002	-1.1141018320E+002	0.337	0.863	0.865
144.316	10.106	204.639	0.248	4.0230137629E+003	6.8538420304E+002	-1.1301116805E+002	0.332	0.861	0.866
145.370	9.979	204.908	0.251	3.8976580603E+003	6.5813041920E+002	-1.1573253687E+002	0.321	0.857	0.869
145.964	9.901	205.052	0.256	3.8300259878E+003	6.4351772237E+002	-1.1710146498E+002	0.316	0.856	0.870
147.037	9.767	205.335	0.259	3.6981665385E+003	6.1520404907E+002	-1.1917672476E+002	0.305	0.853	0.873
147.639	9.685	205.486	0.264	3.6276400441E+003	6.0013593326E+002	-1.2012916045E+002	0.300	0.852	0.875

148.713	9.545	205.776	0.266	3.4929349544E+003	5.7155011835E+002	-1.2141855469E+002	0.289	0.851	0.879
149.383	9.449	205.949	0.269	3.4132204775E+003	5.5474533738E+002	-1.2169498660E+002	0.283	0.851	0.882
150.457	9.306	206.246	0.271	3.2777434565E+003	5.2642918336E+002	-1.2134106572E+002	0.271	0.851	0.886
151.076	9.214	206.408	0.273	3.2044118993E+003	5.1124023887E+002	-1.2102526427E+002	0.266	0.852	0.888
152.149	9.066	206.708	0.274	3.0698623086E+003	4.8364552231E+002	-1.1942409000E+002	0.254	0.853	0.893
152.741	8.974	206.864	0.275	3.0011444704E+003	4.6971289800E+002	-1.1847629619E+002	0.249	0.854	0.895
153.814	8.818	207.166	0.275	2.8694591251E+003	4.4327976719E+002	-1.1625476840E+002	0.238	0.855	0.900
154.390	8.723	207.317	0.276	2.8045512115E+003	4.3040382991E+002	-1.1525227564E+002	0.233	0.856	0.902
155.463	8.558	207.620	0.276	2.6759504536E+003	4.0510893238E+002	-1.1300676748E+002	0.222	0.858	0.906
156.045	8.457	207.773	0.281	2.6123484103E+003	3.9272488937E+002	-1.1289773478E+002	0.217	0.858	0.909
157.118	8.292	208.086	0.289	2.4840807274E+003	3.6794521877E+002	-1.1631019029E+002	0.207	0.860	0.913
157.705	8.198	208.253	0.298	2.4169184232E+003	3.5508305643E+002	-1.1678535150E+002	0.201	0.860	0.916
158.778	8.037	208.580	0.299	2.2872063168E+003	3.3044548915E+002	-1.1573629885E+002	0.190	0.860	0.921
159.391	7.936	208.757	0.309	2.2180309926E+003	3.1741590424E+002	-1.1644499755E+002	0.184	0.860	0.924
160.465	7.782	209.101	0.315	2.0862257496E+003	2.9291692373E+002	-1.1842492879E+002	0.173	0.859	0.930
161.129	7.677	209.304	0.321	2.0093545914E+003	2.7880889575E+002	-1.1853810335E+002	0.166	0.858	0.934
162.203	7.526	209.659	0.325	1.8772314612E+003	2.5498026427E+002	-1.1894632346E+002	0.155	0.856	0.941
162.955	7.410	209.898	0.331	1.7899480781E+003	2.3955859362E+002	-1.1875138982E+002	0.147	0.854	0.947
164.028	7.232	210.263	0.336	1.6583329626E+003	2.1685054553E+002	-1.1865878039E+002	0.136	0.851	0.957
164.606	7.129	210.453	0.341	1.5909431561E+003	2.0556037616E+002	-1.1860046131E+002	0.130	0.850	0.963
165.500	6.952	210.764	0.342	1.4821174466E+003	1.8768037747E+002	-1.1806096686E+002	0.121	0.850	0.974
166.208	6.802	211.001	0.347	1.4006700588E+003	1.7467318013E+002	-1.1684494670E+002	0.115	0.850	0.984
167.281	6.550	211.382	0.352	1.2724034000E+003	1.5469476890E+002	-1.1519823190E+002	0.105	0.853	1.002
167.751	6.435	211.544	0.357	1.2191337748E+003	1.4665114390E+002	-1.1407456299E+002	0.101	0.855	1.010
168.825	6.144	211.932	0.359	1.0948286043E+003	1.2820812595E+002	-1.1172108230E+002	0.091	0.863	1.033
169.374	5.990	212.126	0.370	1.0345923250E+003	1.1947746095E+002	-1.1081067410E+002	0.087	0.868	1.045
170.448	5.670	212.532	0.377	9.1317444046E+002	1.0224037549E+002	-1.1027514286E+002	0.077	0.883	1.075
170.926	5.527	212.712	0.395	8.6101419764E+002	9.4945786888E+001	-1.0956100883E+002	0.073	0.890	1.089
172.000	5.189	213.146	0.401	7.4208325861E+002	7.8754604353E+001	-1.0596740607E+002	0.063	0.914	1.128
172.534	5.015	213.356	0.416	6.8677270731E+002	7.1360861580E+001	-1.0341453828E+002	0.059	0.928	1.149
173.607	4.659	213.815	0.425	5.7609215991E+002	5.7087046713E+001	-9.8348711647E+001	0.049	0.959	1.196
174.197	4.459	214.063	0.429	5.1961411144E+002	4.9979161641E+001	-9.8306321574E+001	0.044	0.979	1.225
175.271	4.073	214.529	0.442	4.0906189377E+002	3.5816664016E+001	-1.0012882560E+002	0.043	1.023	1.288
176.016	3.818	214.866	0.466	3.3592877526E+002	2.6773034531E+001	-9.5654761976E+001	0.043	1.063	1.340
177.089	3.488	215.376	0.462	2.3710050039E+002	1.5216251994E+001	-8.0675114165E+001	0.043	1.131	1.425
177.750	3.262	215.667	0.450	1.8841442580E+002	1.0044562261E+001	-7.0194894495E+001	0.043	1.181	1.485
178.824	2.925	216.156	0.447	1.1911479206E+002	3.7731810383E+000	-5.4199338236E+001	0.043	1.268	1.589
179.435	2.718	216.420	0.498	8.9575730741E+001	1.9222743977E+000	-4.7188196951E+001	0.043	1.328	1.659
180.509	2.481	216.996	0.480	4.1016825541E+001	3.0987035014E-001	-3.1201505917E+001	0.043	1.442	1.795
181.092	2.259	217.216	0.480	2.7262068951E+001	1.3893509765E-001	-2.4217159476E+001	0.043	1.500	1.856

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)
48.410	1.074	1.508	-44.615	-6.231	-9.398	100.025	150.854
49.484	1.074	1.508	-44.615	-18.693	-28.193	100.549	151.644
50.558	1.074	1.508	-44.615	-31.156	-46.988	104.158	157.087
51.631	1.074	1.508	-44.615	-43.618	-65.783	111.180	167.678
52.705	1.074	1.508	-44.615	-56.080	-84.578	113.388	171.007
53.778	1.074	1.508	-44.615	-68.543	-103.373	116.688	175.985

54.852	0.025	0.035	-44.615	-74.918	-2.609	121.346	4.226
54.877	1.074	1.477	-43.367	-80.814	-119.345	122.315	180.633
55.950	1.074	1.477	-43.367	-92.795	-137.038	121.162	178.930
57.024	0.774	1.064	-43.367	-103.103	-109.736	121.169	128.964
57.798	1.074	1.403	-40.071	-110.855	-155.518	120.780	169.441
58.871	0.764	0.998	-40.071	-120.013	-119.820	121.298	121.103
59.635	1.074	1.307	-34.776	-121.006	-158.157	119.246	155.857
60.709	0.344	0.418	-34.776	-126.720	-53.031	118.414	49.554
61.052	1.074	1.204	-26.882	-110.996	-133.598	116.691	140.453
62.126	0.413	0.463	-26.882	-114.989	-53.221	116.205	53.783
62.539	0.461	0.490	-19.915	-90.224	-44.253	112.073	54.969
63.000	0.739	0.786	-19.915	-92.310	-72.579	110.849	87.156
63.739	1.074	1.097	-11.899	-55.295	-60.667	106.672	117.034
64.813	0.332	0.340	-11.899	-56.400	-19.154	106.612	36.206
65.145	1.074	1.079	-5.565	-21.061	-22.717	102.936	111.033
66.219	0.511	0.513	-5.565	-21.405	-10.980	103.051	52.861
66.729	1.074	1.074	-1.558	2.736	2.938	100.803	108.259
67.803	1.074	1.074	-1.558	2.783	2.989	100.808	108.264
68.876	0.022	0.022	-1.558	2.807	0.061	100.741	2.174
68.898	1.074	1.074	-1.172	5.274	5.664	100.566	107.987
69.972	0.848	0.849	-1.172	5.351	4.540	100.545	85.320
70.820	1.074	1.074	-0.713	8.419	9.039	100.309	107.697
71.893	0.694	0.694	-0.713	8.525	5.917	100.295	69.612
72.587	1.074	1.074	-0.231	11.849	12.720	100.098	107.463
73.661	0.624	0.624	-0.231	11.983	7.473	100.096	62.424
74.285	1.074	1.074	0.284	15.632	16.783	99.891	107.241
75.358	0.581	0.581	0.284	15.796	9.179	99.895	58.050
75.939	1.074	1.074	0.754	19.231	20.648	99.725	107.071
77.013	0.569	0.569	0.754	19.420	11.050	99.766	56.765
77.582	1.074	1.074	1.224	22.936	24.629	99.607	106.960
78.655	0.582	0.583	1.224	23.151	13.488	99.640	58.049
79.238	1.074	1.074	1.683	26.676	28.651	99.478	106.842
80.311	0.603	0.603	1.683	26.916	16.232	99.517	60.016
80.914	0.026	0.026	2.125	30.228	0.778	99.373	2.557
80.940	1.074	1.074	2.125	30.412	32.672	99.338	106.720
82.014	0.621	0.621	2.125	30.695	19.068	99.356	61.719
82.634	1.074	1.074	1.790	28.480	30.590	99.400	106.765
83.708	0.610	0.611	1.790	28.745	17.552	99.411	60.701
84.318	1.074	1.074	1.444	26.376	28.325	99.473	106.825
85.392	0.590	0.590	1.444	26.620	15.712	99.482	58.717
85.982	1.074	1.074	1.091	24.130	25.910	99.566	106.910
87.055	0.579	0.579	1.091	24.354	14.107	99.572	57.678
87.635	1.074	1.074	0.738	21.777	23.381	99.681	107.023
88.708	0.583	0.583	0.738	21.981	12.826	99.705	58.178
89.292	1.074	1.074	0.386	19.346	20.769	99.822	107.169
90.365	0.576	0.576	0.386	19.527	11.242	99.832	57.477
90.941	1.074	1.074	0.034	16.812	18.049	99.984	107.340
92.014	0.583	0.583	0.034	16.971	9.896	99.985	58.303
92.598	1.074	1.074	-0.312	14.221	15.268	100.142	107.511
93.671	0.596	0.596	-0.312	14.357	8.561	100.133	59.711
94.267	1.074	1.074	-0.650	11.599	12.453	100.294	107.679
95.341	0.622	0.622	-0.650	11.712	7.284	100.276	62.369
95.963	1.074	1.074	-0.796	10.551	11.329	100.358	107.752
97.037	0.213	0.214	-0.796	10.629	2.269	100.345	21.426
97.250	0.396	0.396	-0.796	10.667	4.225	100.335	39.739
97.646	1.074	1.074	-0.944	9.444	10.140	100.446	107.851
98.720	0.596	0.596	-0.944	9.539	5.690	100.435	59.909
99.316	1.074	1.074	-1.093	8.281	8.892	100.559	107.977
100.390	0.594	0.594	-1.093	8.363	4.965	100.540	59.688
100.983	1.074	1.074	-1.243	7.058	7.579	100.739	108.175
102.057	0.588	0.588	-1.243	7.127	4.192	100.721	59.243
102.645	1.074	1.074	-1.399	5.720	6.143	100.862	108.315
103.718	0.619	0.619	-1.399	5.776	3.576	100.834	62.418
104.337	1.074	1.074	-1.550	4.379	4.703	100.956	108.423
105.411	0.647	0.647	-1.550	4.423	2.863	100.811	65.257
106.058	1.074	1.074	-1.698	3.015	3.238	100.905	108.376

107.131	0.714	0.714	-1.698	3.046	2.176	100.789	72.006
107.846	1.074	1.074	-1.835	1.701	1.827	100.814	108.287
108.919	0.171	0.171	-1.835	1.713	0.293	100.668	17.216
109.090	0.635	0.635	-1.835	1.720	1.093	100.677	63.962
109.725	1.074	1.074	0.334	23.897	25.656	99.890	107.241
110.799	0.553	0.553	0.334	24.069	13.308	99.910	55.240
111.351	1.074	1.075	3.008	51.792	55.679	99.333	106.788
112.425	0.478	0.479	3.008	52.079	24.934	99.556	47.664
112.903	1.074	1.080	6.035	83.390	90.024	99.356	107.260
113.977	0.388	0.391	6.035	83.710	32.693	99.762	38.963
114.365	1.074	1.087	8.961	113.413	123.262	100.021	108.707
115.439	0.519	0.526	8.961	113.726	59.776	100.516	52.833
115.958	1.074	1.097	11.858	142.170	155.957	101.376	111.207
117.031	0.395	0.404	11.858	142.347	57.503	101.864	41.150
117.427	1.074	1.110	14.739	169.188	187.815	103.836	115.268
118.500	0.486	0.503	14.739	169.176	85.049	104.288	52.428
118.987	0.013	0.014	17.204	190.836	2.692	105.000	1.481
119.000	1.074	1.124	17.204	190.611	214.219	106.116	119.259
120.074	0.555	0.581	17.204	190.272	110.471	106.819	62.019
120.628	1.074	1.137	19.158	205.948	234.063	108.432	123.235
121.702	0.817	0.864	19.158	205.274	177.446	109.013	94.235
122.518	1.074	1.134	18.840	202.070	229.217	110.021	124.801
123.592	0.708	0.748	18.840	201.480	150.722	110.108	82.369
124.300	1.074	1.132	18.491	198.109	224.262	110.662	125.271
125.373	0.127	0.133	18.491	197.744	26.386	109.598	14.624
125.500	0.511	0.539	18.491	197.496	106.474	109.907	59.253
126.011	1.074	1.130	18.130	193.950	219.096	110.206	124.494
127.085	0.602	0.634	18.130	193.310	122.534	108.798	68.964
127.687	1.074	1.127	17.755	189.656	213.793	108.867	122.722
128.761	0.583	0.613	17.755	189.073	115.828	108.199	66.284
129.344	1.074	1.125	17.393	185.560	208.756	108.498	122.061
130.418	0.581	0.609	17.393	185.024	112.657	107.882	65.687
130.999	0.231	0.242	17.031	181.804	43.948	108.260	26.170
131.230	1.074	1.123	17.031	181.200	203.453	108.495	121.819
132.304	0.364	0.380	17.031	180.483	68.642	108.073	41.102
132.667	1.074	1.121	16.674	176.877	198.225	108.726	121.848
133.741	0.620	0.648	16.674	176.082	114.052	107.889	69.882
134.361	1.074	1.119	16.330	172.499	192.976	108.437	121.308
135.435	0.666	0.694	16.330	171.731	119.125	108.196	75.052
136.101	1.074	1.123	16.999	176.307	197.925	109.213	122.605
137.174	0.598	0.625	16.999	175.478	109.709	108.940	68.110
137.772	1.074	1.127	17.701	180.117	202.978	109.955	123.911
138.846	0.572	0.600	17.701	179.202	107.606	109.240	65.596
139.418	1.074	1.132	18.422	183.726	207.896	109.751	124.189
140.491	0.550	0.580	18.422	182.720	106.001	109.015	63.243
141.042	1.074	1.136	19.135	186.927	212.415	109.853	124.832
142.115	0.575	0.609	19.135	185.796	113.127	109.304	66.553
142.690	1.074	1.141	19.843	189.669	216.476	110.281	125.868
143.764	0.552	0.587	19.843	188.443	110.573	109.806	64.431
144.316	1.054	1.126	20.545	192.018	216.159	110.844	124.780
145.370	0.594	0.634	20.545	190.602	120.824	110.326	69.936
145.964	1.074	1.152	21.218	193.478	222.817	111.357	128.243
147.037	0.602	0.646	21.218	191.812	123.892	110.776	71.550
147.639	1.074	1.157	21.847	194.106	224.512	111.739	129.242
148.713	0.671	0.722	21.847	192.252	138.882	111.049	80.221
149.383	1.074	1.160	22.262	192.906	223.777	111.803	129.695
150.457	0.619	0.668	22.262	191.027	127.686	110.988	74.186
151.076	1.074	1.164	22.692	191.664	223.029	111.677	129.952
152.149	0.592	0.641	22.692	189.733	121.649	110.700	70.976
152.741	1.074	1.167	23.130	190.262	222.114	111.352	129.994
153.814	0.575	0.626	23.130	188.266	117.779	110.319	69.016
154.390	1.074	1.171	23.567	188.633	220.939	111.021	130.035
155.463	0.582	0.635	23.567	186.542	118.393	109.958	69.787
156.045	1.074	1.175	24.010	186.747	219.476	110.950	130.395
157.118	0.586	0.642	24.010	184.562	118.429	110.410	70.848
157.705	1.074	1.179	24.441	184.518	217.592	111.033	130.936

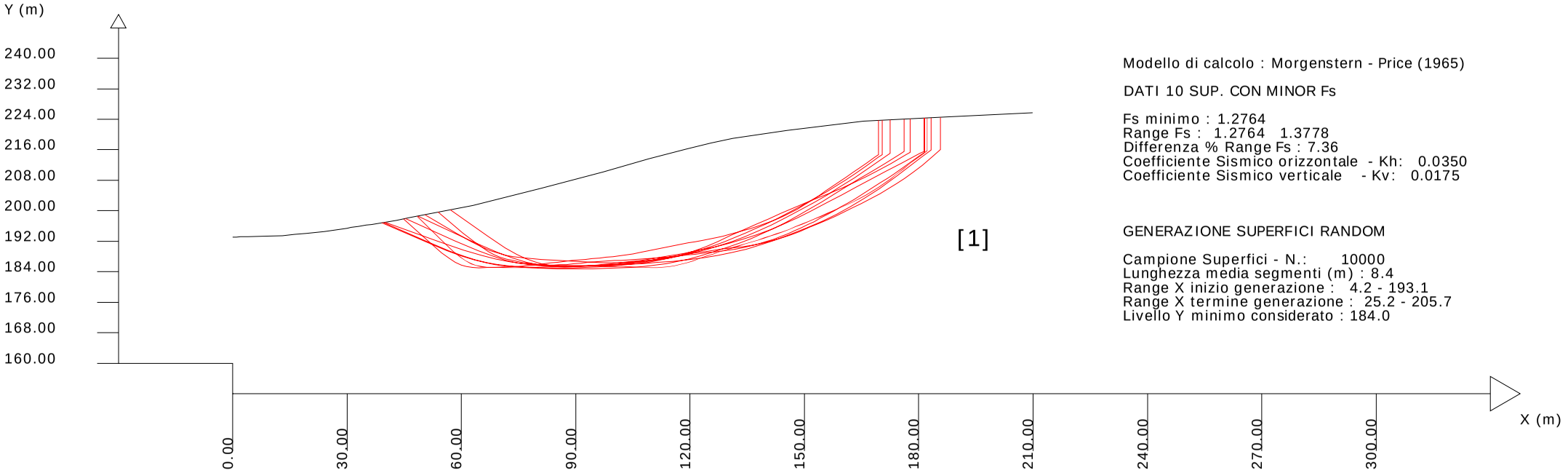
158.778	0.613	0.673	24.441	182.208	122.705	110.218	74.224
159.391	1.074	1.183	24.858	181.876	215.193	111.109	131.463
160.465	0.664	0.732	24.858	179.405	131.328	110.341	80.771
161.129	1.074	1.187	25.243	178.682	212.080	110.928	131.662
162.203	0.752	0.831	25.243	175.997	146.336	110.096	91.541
162.955	1.074	1.203	26.854	180.047	216.658	110.880	133.427
164.028	0.578	0.648	26.854	177.269	114.899	110.043	71.326
164.606	0.894	1.018	28.654	181.475	184.792	110.747	112.771
165.500	0.708	0.806	28.654	178.144	143.638	109.873	88.591
166.208	1.074	1.246	30.536	180.038	224.406	110.394	137.599
167.281	0.470	0.546	30.536	176.094	96.103	109.558	59.791
167.751	1.074	1.270	32.324	176.851	224.678	109.907	139.630
168.825	0.549	0.650	32.324	172.247	111.986	109.165	70.973
169.374	1.074	1.296	34.051	171.321	221.986	109.507	141.892
170.448	0.478	0.577	34.051	166.485	96.140	109.028	62.960
170.926	1.074	1.322	35.720	164.434	217.436	109.124	144.299
172.000	0.534	0.658	35.720	158.978	104.571	108.376	71.286
172.534	1.074	1.348	37.200	155.378	209.419	108.172	145.795
173.607	0.590	0.741	37.200	149.316	110.583	107.406	79.544
174.197	1.074	1.371	38.450	144.388	197.933	108.200	148.324
175.271	0.745	0.951	38.450	137.370	130.695	107.544	102.319
176.016	1.074	1.363	38.039	130.050	177.273	106.668	145.401
177.089	0.661	0.839	38.039	123.480	103.614	104.847	87.979
177.750	1.074	1.355	37.594	116.595	157.975	103.604	140.374
178.824	0.612	0.772	37.594	110.340	85.160	101.867	78.621
179.435	1.074	1.347	37.128	103.773	139.733	100.923	135.895
180.509	0.583	0.732	37.128	97.755	71.528	100.180	73.302
181.092	1.074	1.338	36.648	91.434	122.346	100.079	133.914

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

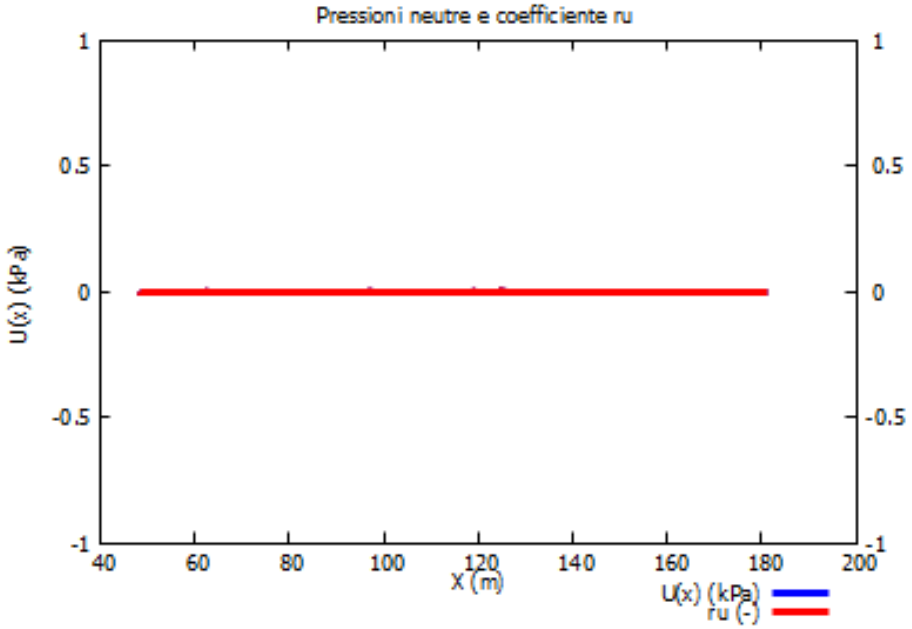
Fs minimo : 1.2764
Range Fs : 1.2764 1.3778
Differenza % Range Fs : 7.36
Coefficiente Sismico orizzontale - Kh: 0.0350
Coefficiente Sismico verticale - Kv: 0.0175

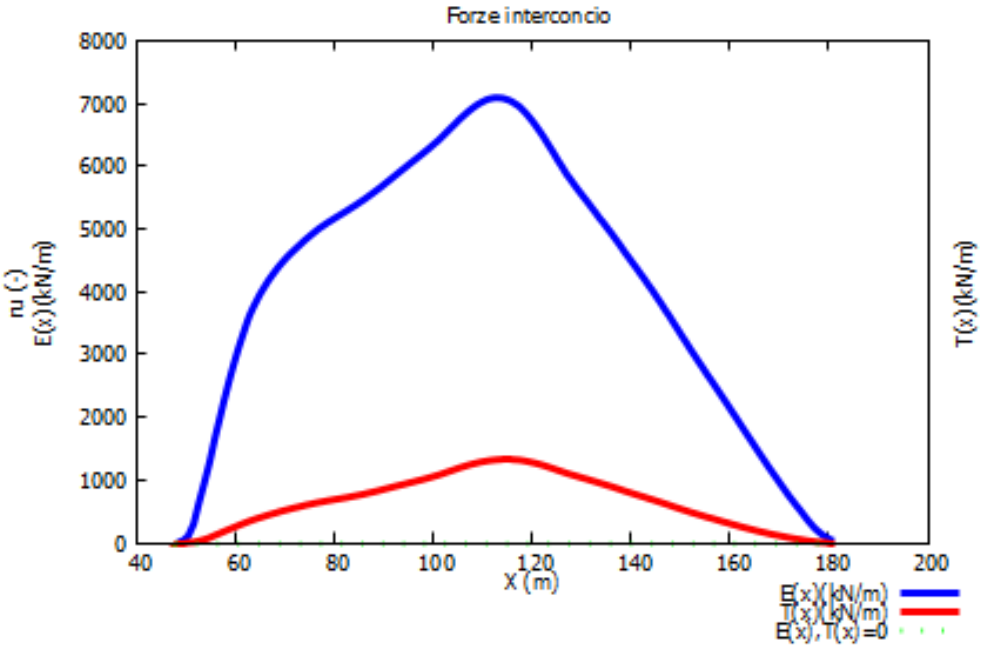
GENERAZIONE SUPERFICI RANDOM

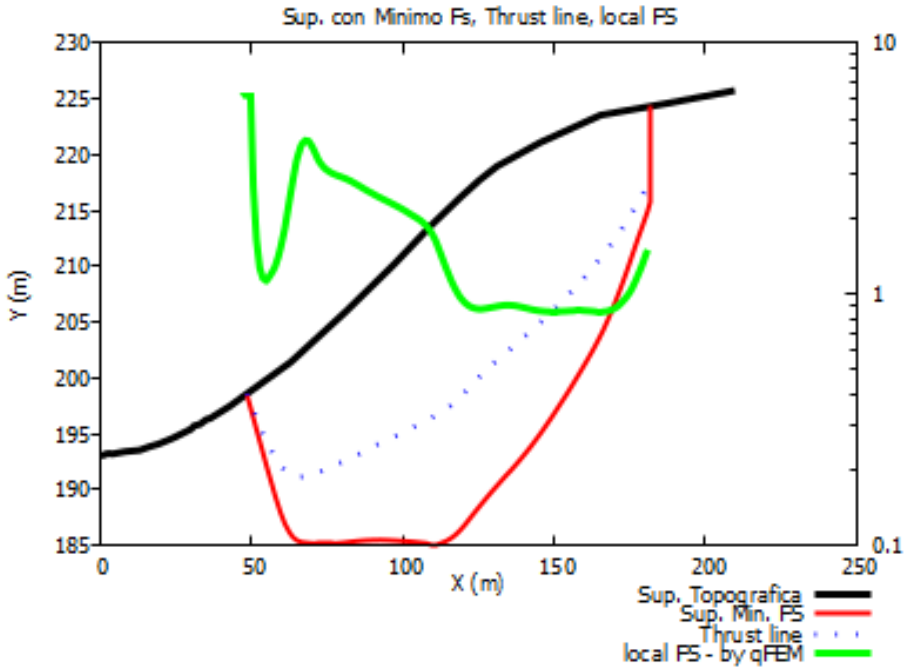
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 8.4
Range X inizio generazione : 4.2 - 193.1
Range X termine generazione : 25.2 - 205.7
Livello Y minimo considerato : 184.0

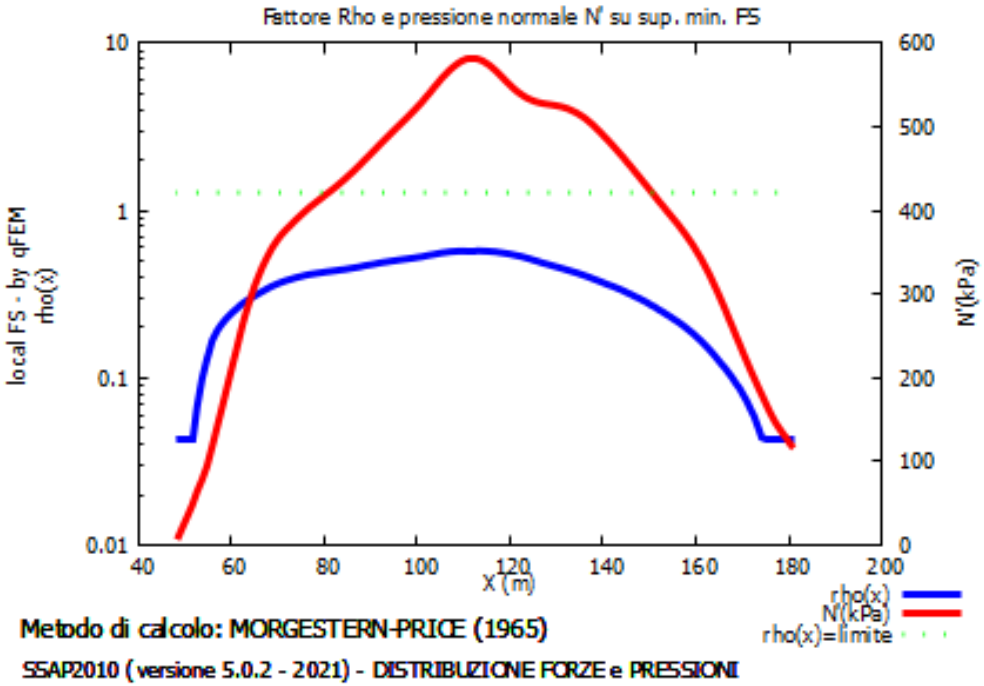
Parametri Geotecnici degli strati

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





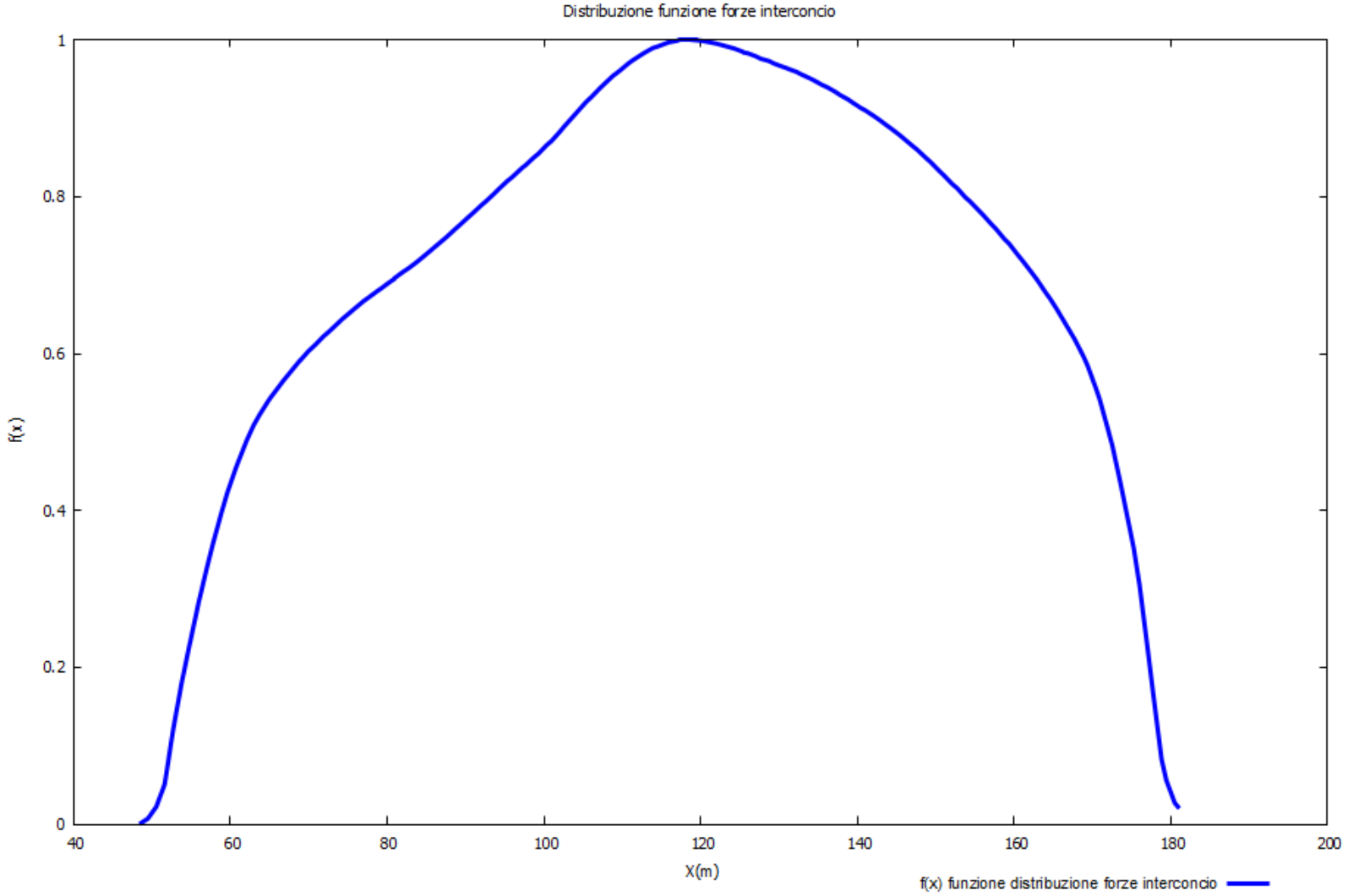




Metodo di calcolo: MORGESTERN-PRICE (1965)

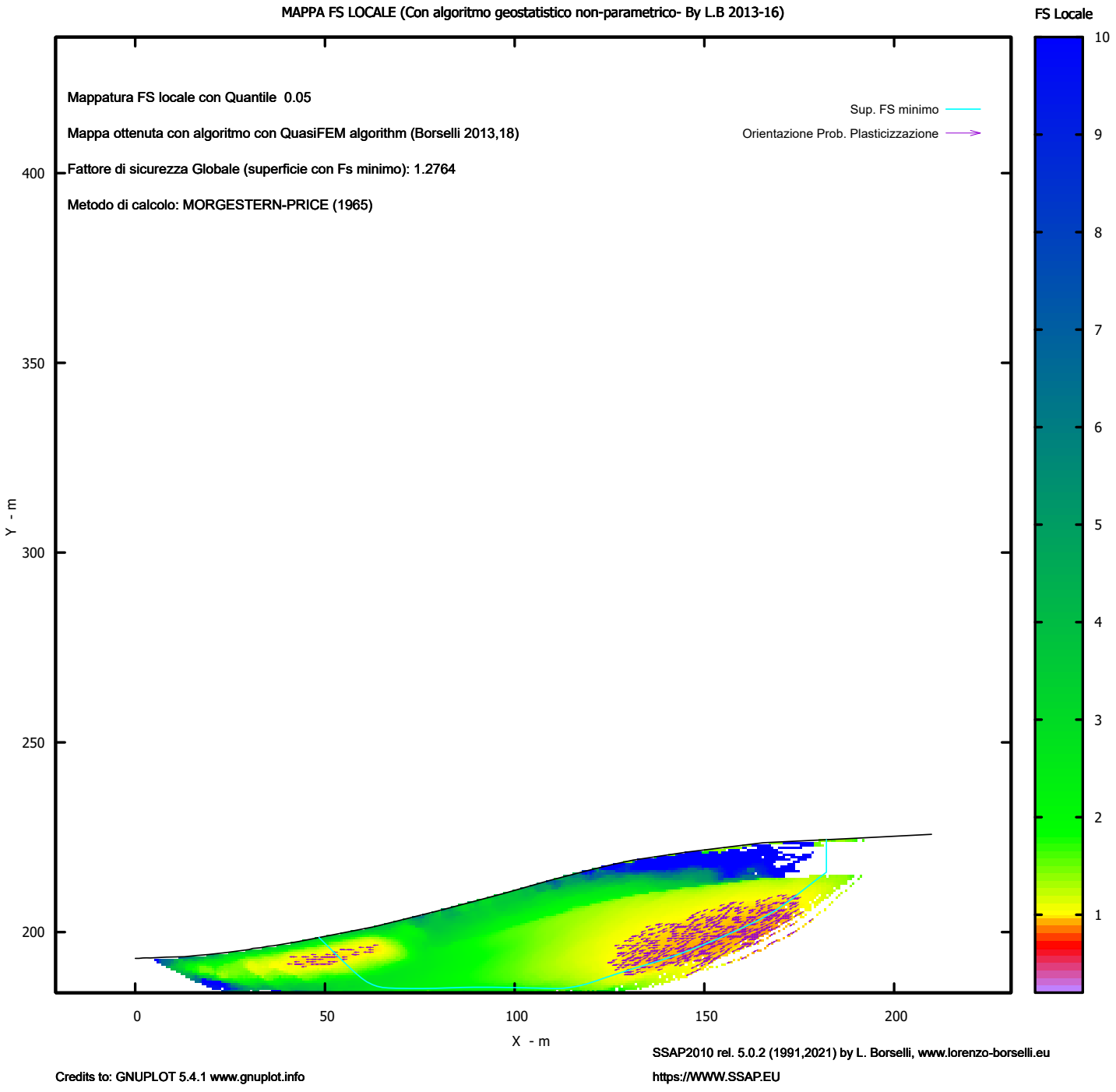
SSAP2010 (versione 5.0.2 - 2021) - DISTRIBUZIONE FORZE e PRESSIONI

18/11/21 13:26



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 *,**
*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 GUGLIELMO\VERIFICA 2\NONDRENATA\BERSELLI\BERSELLI.txt
Data: 18/11/2021
Localita' :
Descrizione:
Modello pendio: NON 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	193.05	-	-	-	-	-	-
1.00	193.07	-	-	-	-	-	-
2.00	193.18	-	-	-	-	-	-
3.00	193.21	-	-	-	-	-	-
4.00	193.17	-	-	-	-	-	-
8.15	193.38	-	-	-	-	-	-
13.00	193.51	-	-	-	-	-	-
16.23	193.82	-	-	-	-	-	-
19.26	194.07	-	-	-	-	-	-
24.00	194.59	-	-	-	-	-	-
30.00	195.40	-	-	-	-	-	-
31.00	195.69	-	-	-	-	-	-
33.00	195.85	-	-	-	-	-	-
35.00	196.26	-	-	-	-	-	-
36.37	196.37	-	-	-	-	-	-
43.00	197.49	-	-	-	-	-	-
46.39	198.16	-	-	-	-	-	-
63.00	201.42	-	-	-	-	-	-
80.94	205.87	-	-	-	-	-	-
97.25	210.20	-	-	-	-	-	-
109.09	213.57	-	-	-	-	-	-
119.00	216.15	-	-	-	-	-	-
125.50	217.74	-	-	-	-	-	-
131.23	218.96	-	-	-	-	-	-
145.37	221.07	-	-	-	-	-	-
165.50	223.54	-	-	-	-	-	-
187.10	224.58	-	-	-	-	-	-
209.89	225.75	-	-	-	-	-	-

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)*: 8.4 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 4.20 193.10
LIVELLO MINIMO CONSIDERATO (Ymin): 184.00
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 25.19 205.69
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) 1.3442 - Min. - X Y Lambda= 0.1444
44.95 197.88
56.08 192.61
61.38 190.22
64.96 188.79
67.96 187.76
70.88 186.98
73.55 186.42
76.42 185.98
79.46 185.67
83.05 185.45
86.31 185.30
89.39 185.20
92.37 185.17
95.38 185.19
98.33 185.27
101.38 185.41
104.55 185.60
108.00 185.87
111.07 186.19
114.02 186.60
116.85 187.08

119.81 187.70
122.64 188.38
125.59 189.20
128.67 190.15
132.10 191.31
135.27 192.43
138.32 193.57
141.29 194.74
144.30 195.98
147.26 197.27
150.29 198.64
153.42 200.13
156.78 201.77
159.86 203.37
162.85 205.01
165.75 206.69
168.75 208.52
172.00 210.64
175.71 213.18
178.93 215.49
178.93 224.19

Fattore di sicurezza (FS) 1.3594 - N.2 -- X Y Lambda= 0.1569
48.06 198.49
54.81 192.90
57.92 190.43
59.95 188.99
61.58 188.01
63.23 187.23
64.65 186.71
66.26 186.30
68.03 186.00
70.31 185.75
72.29 185.57
74.11 185.44
75.83 185.38
77.57 185.36
79.25 185.38
80.98 185.46
82.76 185.57
84.68 185.75
86.54 185.92
88.35 186.10
90.13 186.29
91.91 186.49
93.68 186.70
95.46 186.92
97.25 187.15
99.06 187.39
100.87 187.64
102.66 187.89
104.45 188.14
106.23 188.39
108.03 188.65
109.85 188.92
111.69 189.19
113.58 189.48
115.35 189.78
117.09 190.11
118.78 190.48
120.54 190.89
122.24 191.34
123.98 191.83
125.76 192.37
127.66 192.99

129.50	193.60
131.30	194.21
133.09	194.82
134.87	195.44
136.67	196.07
138.50	196.73
140.39	197.42
142.39	198.15
144.14	198.87
145.83	199.65
147.43	200.48
149.15	201.47
150.77	202.49
152.47	203.65
154.25	204.96
156.24	206.51
158.13	208.00
159.95	209.46
161.73	210.92
163.51	212.39
165.49	214.07
166.45	214.90
166.45	223.59

Fattore di sicurezza (FS) 1.3644 - N.3 -- X Y Lambda= 0.1507

54.38	199.73
59.74	194.37
62.24	191.97
63.89	190.53
65.22	189.51
66.56	188.68
67.72	188.07
69.03	187.54
70.45	187.09
72.27	186.63
73.84	186.27
75.29	185.97
76.66	185.73
78.07	185.53
79.41	185.38
80.80	185.26
82.23	185.18
83.81	185.12
85.30	185.09
86.74	185.08
88.15	185.08
89.57	185.10
90.96	185.14
92.38	185.20
93.81	185.27
95.30	185.36
96.76	185.46
98.20	185.56
99.64	185.67
101.07	185.78
102.51	185.90
103.96	186.03
105.45	186.16
106.99	186.31
108.41	186.47
109.80	186.67
111.14	186.90
112.55	187.18
113.90	187.49
115.30	187.84

116.76 188.25
118.36 188.74
119.84 189.22
121.26 189.71
122.63 190.22
124.04 190.78
125.42 191.35
126.83 191.98
128.30 192.66
129.87 193.43
131.34 194.17
132.75 194.93
134.13 195.70
135.54 196.53
136.91 197.37
138.32 198.28
139.77 199.25
141.32 200.32
142.79 201.31
144.22 202.25
145.62 203.14
147.04 204.02
148.44 204.86
149.86 205.69
151.32 206.52
152.86 207.36
154.31 208.18
155.72 209.02
157.11 209.87
158.53 210.76
159.92 211.68
161.34 212.65
162.81 213.67
163.74 214.34
163.74 223.32

Fattore di sicurezza (FS) 1.3645 - N.4 -- X Y Lambda= 0.1389
49.61 198.79
61.24 192.67
66.62 189.99
70.15 188.47
73.02 187.47
75.92 186.77
78.45 186.37
81.23 186.15
84.23 186.13
87.93 186.29
91.36 186.43
94.60 186.54
97.76 186.64
100.85 186.73
103.96 186.80
107.10 186.86
110.30 186.91
113.60 186.95
116.69 187.04
119.70 187.20
122.64 187.42
125.68 187.72
128.66 188.09
131.75 188.54
135.00 189.08
138.59 189.75
141.72 190.44
144.69 191.22

147.50 192.09
150.50 193.16
153.33 194.30
156.32 195.64
159.48 197.20
163.11 199.11
166.33 200.90
169.40 202.73
172.34 204.59
175.37 206.63
178.64 209.00
182.39 211.87
187.10 215.65
187.10 224.58

Fattore di sicurezza (FS) 1.3654 - N.5 -- X Y Lambda= 0.1453
46.35 198.15
57.48 192.23
62.66 189.61
66.09 188.10
68.89 187.08
71.70 186.34
74.18 185.87
76.88 185.57
79.79 185.44
83.33 185.46
86.60 185.48
89.71 185.53
92.73 185.59
95.70 185.68
98.70 185.78
101.76 185.90
104.93 186.05
108.29 186.22
111.23 186.47
114.04 186.84
116.70 187.31
119.57 187.96
122.26 188.70
125.11 189.62
128.13 190.73
131.61 192.13
134.75 193.46
137.73 194.80
140.60 196.18
143.54 197.66
146.37 199.18
149.28 200.82
152.25 202.57
155.42 204.52
158.50 206.39
161.52 208.22
164.52 210.01
167.49 211.78
170.84 213.74
172.94 214.96
172.94 223.90

Fattore di sicurezza (FS) 1.3707 - N.6 -- X Y Lambda= 0.1352
55.63 199.97
68.05 193.02
73.81 189.96
77.60 188.20
80.68 187.04

83.78 186.19
86.50 185.66
89.51 185.34
92.77 185.22
96.82 185.27
100.46 185.36
103.87 185.49
107.15 185.67
110.42 185.91
113.68 186.19
117.03 186.54
120.55 186.95
124.39 187.46
127.69 188.02
130.82 188.69
133.76 189.49
136.94 190.52
139.92 191.64
143.09 193.01
146.48 194.63
150.42 196.66
153.89 198.57
157.18 200.50
160.31 202.47
163.55 204.65
167.03 207.18
171.04 210.27
176.82 214.95
177.80 215.76
177.80 224.13

Fattore di sicurezza (FS) 1.3721 - N.7 -- X Y Lambda= 0.1403
46.89 198.26
56.81 191.95
61.36 189.21
64.32 187.65
66.68 186.63
69.10 185.89
71.17 185.46
73.50 185.20
76.03 185.12
79.26 185.20
82.18 185.29
84.91 185.41
87.55 185.54
90.15 185.70
92.73 185.89
95.35 186.10
98.02 186.34
100.80 186.62
103.43 186.84
106.01 187.02
108.54 187.15
111.12 187.24
113.67 187.29
116.29 187.30
119.00 187.26
121.92 187.18
124.56 187.18
127.10 187.25
129.53 187.39
132.09 187.62
134.56 187.92
137.16 188.33
139.94 188.84

143.13 189.50
145.78 190.17
148.25 190.93
150.53 191.80
153.02 192.91
155.32 194.10
157.78 195.53
160.41 197.22
163.49 199.33
166.28 201.32
168.93 203.28
171.48 205.24
174.06 207.31
176.88 209.68
180.08 212.48
183.31 215.38
183.31 224.40

Fattore di sicurezza (FS) 1.3760 - N.8 -- X Y Lambda= 0.1414
51.75 199.21
60.55 193.62
64.70 191.10
67.46 189.59
69.75 188.51
72.01 187.65
74.05 187.03
76.28 186.51
78.71 186.11
81.70 185.74
84.25 185.50
86.61 185.36
88.83 185.31
91.14 185.35
93.31 185.48
95.58 185.69
97.93 185.99
100.56 186.41
103.07 186.79
105.51 187.16
107.91 187.51
110.28 187.84
112.67 188.17
115.06 188.49
117.48 188.80
119.95 189.10
122.33 189.42
124.69 189.76
127.03 190.13
129.39 190.52
131.77 190.94
134.21 191.40
136.77 191.91
139.54 192.49
141.88 193.08
144.10 193.77
146.18 194.55
148.45 195.55
150.55 196.62
152.80 197.90
155.21 199.41
158.01 201.30
160.54 203.07
162.95 204.82
165.26 206.59
167.61 208.46

170.18 210.60
173.09 213.14
176.04 215.79
176.04 224.05

Fattore di sicurezza (FS) 1.3774 - N.9 -- X Y Lambda= 0.1446
43.00 197.49
56.19 191.62
62.40 189.01
66.56 187.49
70.00 186.46
73.41 185.72
76.48 185.26
79.83 184.97
83.42 184.86
87.76 184.90
91.60 185.02
95.20 185.22
98.64 185.50
102.14 185.87
105.57 186.32
109.13 186.88
112.89 187.57
117.09 188.41
120.70 189.27
124.12 190.24
127.35 191.32
130.80 192.65
134.02 194.05
137.40 195.69
140.93 197.56
144.90 199.82
148.70 201.99
152.38 204.12
156.00 206.22
159.57 208.32
163.58 210.70
168.04 213.38
171.19 215.28
171.19 223.81

Fattore di sicurezza (FS) 1.3806 - N.10 -- X Y Lambda= 0.1517
52.61 199.38
57.93 194.23
60.39 191.95
61.98 190.62
63.25 189.71
64.54 188.97
65.64 188.48
66.89 188.08
68.27 187.76
70.08 187.46
71.64 187.23
73.08 187.06
74.44 186.92
75.82 186.82
77.15 186.76
78.51 186.73
79.90 186.73
81.40 186.76
82.85 186.79
84.28 186.83
85.69 186.87
87.09 186.92

88.49	186.97
89.89	187.03
91.30	187.09
92.71	187.16
94.13	187.23
95.54	187.31
96.95	187.38
98.35	187.46
99.76	187.54
101.18	187.62
102.61	187.71
104.06	187.80
105.46	187.90
106.84	188.02
108.21	188.15
109.60	188.31
110.97	188.47
112.36	188.66
113.78	188.87
115.25	189.10
116.67	189.33
118.08	189.58
119.46	189.83
120.86	190.10
122.25	190.38
123.66	190.67
125.10	190.98
126.60	191.32
128.01	191.66
129.38	192.02
130.73	192.41
132.11	192.83
133.46	193.28
134.85	193.77
136.29	194.30
137.85	194.90
139.27	195.49
140.65	196.10
141.99	196.73
143.36	197.42
144.71	198.12
146.09	198.90
147.53	199.74
149.09	200.69
150.52	201.60
151.90	202.53
153.24	203.47
154.62	204.49
155.96	205.53
157.32	206.64
158.72	207.82
160.22	209.12
161.67	210.40
163.09	211.67
164.49	212.93
165.89	214.20
166.81	215.04
166.81	223.60

---------- 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	1.344	15153.1	11273.1	2752.7	Surplus

2	1.359	13761.7	10123.0	2626.4	Surplus
3	1.364	13183.3	9662.5	2554.6	Surplus
4	1.364	15621.8	11448.9	3028.0	Surplus
5	1.365	14518.7	10633.0	2822.3	Surplus
6	1.371	14393.0	10500.6	2842.3	Surplus
7	1.372	15844.4	11547.2	3142.4	Surplus
8	1.376	14476.1	10520.1	2904.0	Surplus
9	1.377	14621.4	10615.3	2944.6	Surplus
10	1.381	13449.6	9742.1	2733.3	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 2554.6

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

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TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (°)	W (kN/m)	ru (-)	U (kPa)	phi' (°)	(c',Cu) (kPa)
44.951	1.073	-25.33	7.86	0.00	0.00	0.00	100.00
46.024	0.366	-25.33	6.27	0.00	0.00	0.00	100.00
46.390	1.073	-25.33	28.92	0.00	0.00	0.00	100.00
47.463	1.073	-25.33	44.60	0.00	0.00	0.00	100.00
48.536	1.073	-25.33	60.29	0.00	0.00	0.00	100.00
49.609	1.073	-25.33	75.98	0.00	0.00	0.00	100.00
50.682	1.073	-25.33	91.66	0.00	0.00	0.00	100.00
51.755	1.073	-25.33	107.35	0.00	0.00	0.00	100.00
52.827	1.073	-25.33	123.03	0.00	0.00	0.00	100.00
53.900	1.073	-25.33	138.72	0.00	0.00	0.00	100.00
54.973	1.073	-25.33	154.40	0.00	0.00	0.00	100.00
56.046	0.034	-25.33	5.15	0.00	0.00	0.00	100.00
56.080	1.073	-24.23	170.32	0.00	0.00	0.00	100.00
57.153	1.073	-24.23	185.46	0.00	0.00	0.00	100.00
58.226	1.073	-24.23	200.60	0.00	0.00	0.00	100.00
59.299	1.073	-24.23	215.74	0.00	0.00	0.00	100.00
60.372	1.012	-24.23	217.28	0.00	0.00	0.00	100.00
61.383	1.073	-21.84	244.58	0.00	0.00	0.00	100.00
62.456	0.544	-21.84	129.29	0.00	0.00	0.00	100.00
63.000	1.073	-21.84	266.26	0.00	0.00	0.00	100.00
64.073	0.887	-21.84	231.58	0.00	0.00	0.00	100.00
64.960	1.073	-18.84	293.33	0.00	0.00	0.00	100.00
66.033	1.073	-18.84	307.14	0.00	0.00	0.00	100.00
67.106	0.853	-18.84	254.04	0.00	0.00	0.00	100.00
67.959	1.073	-14.99	331.05	0.00	0.00	0.00	100.00
69.032	1.073	-14.99	343.14	0.00	0.00	0.00	100.00
70.104	0.775	-14.99	255.50	0.00	0.00	0.00	100.00
70.880	1.073	-11.88	363.28	0.00	0.00	0.00	100.00
71.953	1.073	-11.88	374.02	0.00	0.00	0.00	100.00
73.026	0.528	-11.88	188.17	0.00	0.00	0.00	100.00
73.554	1.073	-8.66	389.37	0.00	0.00	0.00	100.00
74.627	1.073	-8.66	398.75	0.00	0.00	0.00	100.00
75.700	0.719	-8.66	272.60	0.00	0.00	0.00	100.00
76.419	1.073	-5.81	413.82	0.00	0.00	0.00	100.00
77.492	1.073	-5.81	422.02	0.00	0.00	0.00	100.00
78.565	0.897	-5.81	359.15	0.00	0.00	0.00	100.00
79.462	1.073	-3.56	436.60	0.00	0.00	0.00	100.00
80.535	0.405	-3.56	166.67	0.00	0.00	0.00	100.00

80.940	1.073	-3.56	446.82	0.00	0.00	0.00	100.00
82.013	1.041	-3.56	441.01	0.00	0.00	0.00	100.00
83.054	1.073	-2.70	461.76	0.00	0.00	0.00	100.00
84.127	1.073	-2.70	469.09	0.00	0.00	0.00	100.00
85.200	1.073	-2.70	476.41	0.00	0.00	0.00	100.00
86.273	0.034	-2.70	15.25	0.00	0.00	0.00	100.00
86.307	1.073	-1.71	483.76	0.00	0.00	0.00	100.00
87.380	1.073	-1.71	490.68	0.00	0.00	0.00	100.00
88.453	0.940	-1.71	435.45	0.00	0.00	0.00	100.00
89.393	1.073	-0.65	503.44	0.00	0.00	0.00	100.00
90.465	1.073	-0.65	509.92	0.00	0.00	0.00	100.00
91.538	0.831	-0.65	399.21	0.00	0.00	0.00	100.00
92.369	1.073	0.43	521.21	0.00	0.00	0.00	100.00
93.442	1.073	0.43	527.25	0.00	0.00	0.00	100.00
94.515	0.862	0.43	427.83	0.00	0.00	0.00	100.00
95.377	1.073	1.50	537.92	0.00	0.00	0.00	100.00
96.449	0.801	1.50	405.04	0.00	0.00	0.00	100.00
97.250	1.073	1.50	547.94	0.00	0.00	0.00	100.00
98.323	0.012	1.50	6.12	0.00	0.00	0.00	100.00
98.335	1.073	2.55	553.84	0.00	0.00	0.00	100.00
99.408	1.073	2.55	559.47	0.00	0.00	0.00	100.00
100.481	0.902	2.55	474.50	0.00	0.00	0.00	100.00
101.382	1.073	3.54	569.61	0.00	0.00	0.00	100.00
102.455	1.073	3.54	574.83	0.00	0.00	0.00	100.00
103.528	1.025	3.54	554.19	0.00	0.00	0.00	100.00
104.553	1.073	4.42	584.85	0.00	0.00	0.00	100.00
105.626	1.073	4.42	589.71	0.00	0.00	0.00	100.00
106.699	1.073	4.42	594.57	0.00	0.00	0.00	100.00
107.772	0.225	4.42	125.18	0.00	0.00	0.00	100.00
107.997	1.073	5.98	600.12	0.00	0.00	0.00	100.00
109.070	0.020	5.98	11.35	0.00	0.00	0.00	100.00
109.090	1.073	5.98	604.13	0.00	0.00	0.00	100.00
110.163	0.910	5.98	515.16	0.00	0.00	0.00	100.00
111.073	1.073	7.79	610.49	0.00	0.00	0.00	100.00
112.146	1.073	7.79	613.38	0.00	0.00	0.00	100.00
113.219	0.803	7.79	461.14	0.00	0.00	0.00	100.00
114.022	1.073	9.76	618.03	0.00	0.00	0.00	100.00
115.095	1.073	9.76	620.10	0.00	0.00	0.00	100.00
116.168	0.678	9.76	393.13	0.00	0.00	0.00	100.00
116.846	1.073	11.70	623.06	0.00	0.00	0.00	100.00
117.919	1.073	11.70	624.31	0.00	0.00	0.00	100.00
118.992	0.008	11.70	4.75	0.00	0.00	0.00	100.00
119.000	0.814	11.70	474.13	0.00	0.00	0.00	100.00
119.814	1.073	13.62	625.63	0.00	0.00	0.00	100.00
120.886	1.073	13.62	625.69	0.00	0.00	0.00	100.00
121.959	0.683	13.62	398.30	0.00	0.00	0.00	100.00
122.642	1.073	15.51	625.37	0.00	0.00	0.00	100.00
123.715	1.073	15.51	624.60	0.00	0.00	0.00	100.00
124.788	0.712	15.51	413.99	0.00	0.00	0.00	100.00
125.500	0.093	15.51	54.12	0.00	0.00	0.00	100.00
125.593	1.073	17.20	622.44	0.00	0.00	0.00	100.00
126.666	1.073	17.20	620.18	0.00	0.00	0.00	100.00
127.739	0.933	17.20	537.33	0.00	0.00	0.00	100.00
128.672	1.073	18.63	615.62	0.00	0.00	0.00	100.00
129.745	1.073	18.63	612.71	0.00	0.00	0.00	100.00
130.818	0.412	18.63	234.79	0.00	0.00	0.00	100.00
131.230	0.872	18.63	494.17	0.00	0.00	0.00	100.00
132.102	1.073	19.50	604.17	0.00	0.00	0.00	100.00
133.174	1.073	19.50	599.37	0.00	0.00	0.00	100.00
134.247	1.023	19.50	567.17	0.00	0.00	0.00	100.00
135.271	1.073	20.47	589.77	0.00	0.00	0.00	100.00
136.344	1.073	20.47	584.52	0.00	0.00	0.00	100.00
137.416	0.905	20.47	489.17	0.00	0.00	0.00	100.00
138.322	1.073	21.47	574.61	0.00	0.00	0.00	100.00
139.395	1.073	21.47	568.89	0.00	0.00	0.00	100.00
140.468	0.820	21.47	430.71	0.00	0.00	0.00	100.00

141.287	1.073	22.48	558.57	0.00	0.00	0.00	100.00
142.360	1.073	22.48	552.37	0.00	0.00	0.00	100.00
143.433	0.864	22.48	440.33	0.00	0.00	0.00	100.00
144.297	1.073	23.47	540.94	0.00	0.00	0.00	100.00
145.370	0.000	23.47	0.01	0.00	0.00	0.00	100.00
145.370	1.073	23.47	533.95	0.00	0.00	0.00	100.00
146.443	0.813	23.47	399.64	0.00	0.00	0.00	100.00
147.256	1.073	24.43	520.90	0.00	0.00	0.00	100.00
148.329	1.073	24.43	513.13	0.00	0.00	0.00	100.00
149.402	0.887	24.43	418.21	0.00	0.00	0.00	100.00
150.288	1.073	25.33	498.72	0.00	0.00	0.00	100.00
151.361	1.073	25.33	490.51	0.00	0.00	0.00	100.00
152.434	0.987	25.33	443.79	0.00	0.00	0.00	100.00
153.421	1.073	26.13	474.54	0.00	0.00	0.00	100.00
154.494	1.073	26.13	465.92	0.00	0.00	0.00	100.00
155.566	1.073	26.13	457.30	0.00	0.00	0.00	100.00
156.639	0.139	26.13	58.67	0.00	0.00	0.00	100.00
156.778	1.073	27.35	447.25	0.00	0.00	0.00	100.00
157.851	1.073	27.35	438.01	0.00	0.00	0.00	100.00
158.924	0.940	27.35	375.96	0.00	0.00	0.00	100.00
159.864	1.073	28.69	420.32	0.00	0.00	0.00	100.00
160.937	1.073	28.69	410.37	0.00	0.00	0.00	100.00
162.010	0.843	28.69	315.56	0.00	0.00	0.00	100.00
162.853	1.073	30.08	392.23	0.00	0.00	0.00	100.00
163.926	1.073	30.08	381.53	0.00	0.00	0.00	100.00
164.999	0.501	30.08	174.59	0.00	0.00	0.00	100.00
165.500	0.252	30.08	86.94	0.00	0.00	0.00	100.00
165.752	1.073	31.44	361.67	0.00	0.00	0.00	100.00
166.825	1.073	31.44	348.48	0.00	0.00	0.00	100.00
167.898	0.853	31.44	267.49	0.00	0.00	0.00	100.00
168.751	1.073	33.14	324.32	0.00	0.00	0.00	100.00
169.824	1.073	33.14	310.15	0.00	0.00	0.00	100.00
170.896	1.073	33.14	295.99	0.00	0.00	0.00	100.00
171.969	0.028	33.14	7.41	0.00	0.00	0.00	100.00
171.997	1.073	34.46	281.07	0.00	0.00	0.00	100.00
173.070	1.073	34.46	266.13	0.00	0.00	0.00	100.00
174.143	1.073	34.46	251.18	0.00	0.00	0.00	100.00
175.216	0.492	34.46	110.23	0.00	0.00	0.00	100.00
175.708	1.073	35.62	229.02	0.00	0.00	0.00	100.00
176.781	1.073	35.62	213.37	0.00	0.00	0.00	100.00
177.854	1.073	35.62	197.72	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 (--)	
44.951	0.000	197.876	-0.305	0.0000000000E+000	0.0000000000E+000	5.8276254860E+002	0.045	2.896	2.956	
46.024	0.144	197.512	-0.305	3.8622691530E+002	3.9697311104E-001	1.3720015169E+002	0.045	2.622	2.676	
46.390	0.243	197.437	-0.253	4.0863137582E+002	5.3592132859E-001	6.9852578575E+001	0.045	2.286	2.335	
47.463	0.462	197.148	-0.280	5.1061800157E+002	1.7620158675E+000	1.0412851535E+002	0.045	1.468	1.503	
48.536	0.657	196.836	-0.289	6.3207203608E+002	4.8519755067E+000	1.1825147223E+002	0.045	1.097	1.124	
49.609	0.857	196.528	-0.290	7.6436393219E+002	1.0103039598E+001	1.3129022996E+002	0.045	0.936	0.957	
50.682	1.049	196.213	-0.304	9.1379674492E+002	1.7591892505E+001	1.5073823504E+002	0.062	0.861	0.876	

51.755	1.220	195.875	-0.290	1.0878204863E+003	2.7546194844E+001	1.5471830306E+002	0.081	0.826	0.835
52.827	1.442	195.590	-0.263	1.2457937937E+003	3.7402007615E+001	1.4644809600E+002	0.095	0.818	0.820
53.900	1.671	195.311	-0.256	1.4020711904E+003	4.7335039928E+001	1.4653145345E+002	0.106	0.805	0.801
54.973	1.909	195.041	-0.243	1.5602233676E+003	5.8141208417E+001	1.4790777555E+002	0.116	0.806	0.794
56.046	2.166	194.790	-0.234	1.7194540986E+003	7.0229333397E+001	1.5191497181E+002	0.127	0.824	0.802
56.080	2.174	194.782	-0.225	1.7246207491E+003	7.0647956052E+001	1.5211728029E+002	0.127	0.825	0.802
57.153	2.416	194.541	-0.222	1.8909210205E+003	8.4586685328E+001	1.5774160334E+002	0.140	0.858	0.821
58.226	2.664	194.306	-0.215	2.0631052448E+003	1.0012531187E+002	1.6297619852E+002	0.152	0.904	0.848
59.299	2.921	194.080	-0.208	2.2406379956E+003	1.1738095112E+002	1.6961054194E+002	0.165	0.962	0.881
60.372	3.183	193.859	-0.201	2.4270583017E+003	1.3702631423E+002	1.7516899082E+002	0.180	1.038	0.921
61.383	3.441	193.662	-0.189	2.6056045920E+003	1.5726642827E+002	1.7738834133E+002	0.194	1.128	0.963
62.456	3.675	193.466	-0.181	2.7969316090E+003	1.8041637942E+002	1.8425560582E+002	0.210	1.244	1.012
63.000	3.796	193.369	-0.171	2.8987516556E+003	1.9344484719E+002	1.8761938002E+002	0.219	1.317	1.040
64.073	4.047	193.190	-0.153	3.1008090961E+003	2.2053787608E+002	1.7926695849E+002	0.236	1.492	1.099
64.960	4.282	193.070	-0.128	3.2531602415E+003	2.4239634745E+002	1.7485854400E+002	0.248	1.660	1.146
66.033	4.517	192.938	-0.114	3.4447661139E+003	2.7173023436E+002	1.7645130268E+002	0.266	1.929	1.209
67.106	4.770	192.825	-0.099	3.6317923140E+003	3.0176088628E+002	1.7169263125E+002	0.282	2.283	1.276
67.959	4.985	192.749	-0.082	3.7764693234E+003	3.2596942836E+002	1.7012963572E+002	0.294	2.650	1.332
69.032	5.190	192.667	-0.068	3.9597093394E+003	3.5795347721E+002	1.6715506952E+002	0.312	3.251	1.409
70.104	5.414	192.604	-0.054	4.1351533877E+003	3.8973849013E+002	1.6119411411E+002	0.328	4.036	1.491
70.880	5.585	192.567	-0.035	4.2588357966E+003	4.1284760546E+002	1.5326442947E+002	0.339	4.763	1.553
71.953	5.782	192.538	-0.020	4.4139995991E+003	4.4308115697E+002	1.4243082988E+002	0.353	5.766	1.639
73.026	5.994	192.525	-0.008	4.5644661858E+003	4.7356392015E+002	1.3442942607E+002	0.366	6.653	1.732
73.554	6.106	192.525	0.007	4.6339922248E+003	4.8816590415E+002	1.3062064683E+002	0.372	6.879	1.779
74.627	6.280	192.536	0.016	4.7720755714E+003	5.1792245114E+002	1.2556767636E+002	0.386	6.989	1.881
75.700	6.468	192.560	0.026	4.9034373852E+003	5.4717608855E+002	1.1781510682E+002	0.398	6.631	1.989
76.419	6.601	192.584	0.038	4.9859597361E+003	5.6611595892E+002	1.1249841917E+002	0.406	6.205	2.064
77.492	6.754	192.628	0.048	5.1031093014E+003	5.9377227412E+002	1.0905654410E+002	0.417	5.554	2.181
78.565	6.923	192.687	0.060	5.2199750406E+003	6.2227887423E+002	1.0654428199E+002	0.429	4.922	2.312
79.462	7.073	192.747	0.070	5.3137675978E+003	6.4585048362E+002	1.0191661627E+002	0.438	4.454	2.428
80.535	7.218	192.825	0.074	5.4197299956E+003	6.7308841323E+002	9.6571124487E+001	0.449	4.021	2.572
80.940	7.275	192.856	0.081	5.4584991714E+003	6.8319366428E+002	9.4468717913E+001	0.453	3.884	2.628
82.013	7.430	192.944	0.084	5.5562290866E+003	7.0902706267E+002	8.8063453222E+001	0.462	3.598	2.775
83.054	7.585	193.034	0.089	5.6448761384E+003	7.3285838000E+002	8.3646774686E+001	0.470	3.389	2.914
84.127	7.734	193.133	0.093	5.7329850645E+003	7.5690366350E+002	7.9732754893E+001	0.477	3.223	3.056
85.200	7.886	193.235	0.097	5.8159679795E+003	7.7993223578E+002	7.5519276373E+001	0.484	3.098	3.182
86.273	8.042	193.340	0.098	5.8950355549E+003	8.0220370662E+002	6.8571712897E+001	0.490	2.996	3.291
86.307	8.047	193.343	0.106	5.8973665293E+003	8.0286490344E+002	6.8540547477E+001	0.491	2.993	3.294
87.380	8.193	193.458	0.110	5.9753477992E+003	8.2536867205E+002	7.1972432242E+001	0.497	2.909	3.375
88.453	8.346	193.579	0.116	6.0518061439E+003	8.4781534957E+002	7.0340187592E+001	0.504	2.835	3.425
89.393	8.487	193.691	0.123	6.1171465393E+003	8.6738435112E+002	6.8255061154E+001	0.509	2.779	3.434
90.465	8.634	193.827	0.133	6.1888134956E+003	8.8932987516E+002	6.7148406597E+001	0.515	2.722	3.403
91.538	8.797	193.977	0.140	6.2612346813E+003	9.1189276134E+002	6.5569608471E+001	0.522	2.668	3.328
92.369	8.923	194.094	0.144	6.3144554989E+003	9.2864598123E+002	6.2941137731E+001	0.526	2.629	3.255
93.442	9.073	194.252	0.148	6.3804137622E+003	9.4967683247E+002	5.9597163848E+001	0.532	2.580	3.137
94.515	9.225	194.412	0.142	6.4423400615E+003	9.6962942586E+002	5.1284141169E+001	0.537	2.533	3.007
95.377	9.333	194.527	0.136	6.4820784299E+003	9.8261676044E+002	4.4842717202E+001	0.539	2.500	2.906
96.449	9.453	194.674	0.138	6.5284885813E+003	9.9809371675E+002	4.1030504084E+001	0.542	2.458	2.776
97.250	9.542	194.785	0.138	6.5600072138E+003	1.0088503351E+003	3.7783621924E+001	0.543	2.426	2.680
98.323	9.663	194.934	0.138	6.5982651770E+003	1.0222877120E+003	3.3488395065E+001	0.545	2.383	2.555
98.335	9.664	194.935	0.145	6.5986638309E+003	1.0224301724E+003	3.3451762671E+001	0.545	2.382	2.554
99.408	9.772	195.091	0.156	6.6333427124E+003	1.0353341385E+003	3.2179897726E+001	0.546	2.336	2.430
100.481	9.904	195.271	0.174	6.6677159784E+003	1.0489914069E+003	3.0714549781E+001	0.548	2.283	2.298
101.382	10.028	195.435	0.190	6.6944069016E+003	1.0604578761E+003	2.8722346547E+001	0.549	2.232	2.187
102.455	10.172	195.645	0.198	6.7240992381E+003	1.0741499509E+003	2.6077066857E+001	0.551	2.169	2.058
103.528	10.321	195.860	0.198	6.7503634954E+003	1.0872063828E+003	2.2252984965E+001	0.553	2.106	1.942
104.553	10.458	196.061	0.194	6.7709975348E+003	1.0984478008E+003	1.8091934557E+001	0.554	2.046	1.845
105.626	10.582	196.268	0.191	6.7881255444E+003	1.1089490800E+003	1.3663447010E+001	0.554	1.986	1.758
106.699	10.702	196.471	0.178	6.8003167814E+003	1.1180005359E+003	8.3066361128E+000	0.554	1.926	1.681
107.772	10.798	196.651	0.164	6.8059500591E+003	1.1245310865E+003	3.0032539104E+000	0.553	1.871	1.622
107.997	10.815	196.685	0.168	6.8065192949E+003	1.1256300696E+003	1.8766032357E+000	0.552	1.860	1.611
109.070	10.887	196.869	0.172	6.8051739329E+003	1.1304202659E+003	-4.0354451392E+000	0.551	1.803	1.558
109.090	10.888	196.872	0.172	6.8050912550E+003	1.1304940494E+003	-4.1340283478E+000	0.551	1.802	1.557
110.163	10.960	197.056	0.178	6.7980291722E+003	1.1337362985E+003	-9.6384826707E+000	0.549	1.744	1.509
111.073	11.033	197.225	0.201	6.7869017176E+003	1.1354878299E+003	-1.6285486407E+001	0.547	1.692	1.470
112.146	11.116	197.454	0.215	6.7642981264E+003	1.1360291230E+003	-2.3746998391E+001	0.545	1.624	1.421

113.219	11.202	197.687	0.219	6.7359450225E+003	1.1352262852E+003	-2.9201969436E+001	0.542	1.559	1.377
114.022	11.269	197.864	0.229	6.7108177907E+003	1.1337613468E+003	-3.4680475999E+001	0.539	1.512	1.346
115.095	11.337	198.117	0.223	6.6687360184E+003	1.1301899260E+003	-4.2220480516E+001	0.536	1.450	1.305
116.168	11.379	198.344	0.210	6.6202203976E+003	1.1252212409E+003	-4.6259429955E+001	0.532	1.392	1.269
116.846	11.403	198.484	0.220	6.5883938697E+003	1.1214269204E+003	-5.0712140305E+001	0.529	1.360	1.250
117.919	11.426	198.729	0.228	6.5275448653E+003	1.1132474928E+003	-5.9026587582E+001	0.524	1.313	1.222
118.992	11.449	198.974	0.228	6.4617336590E+003	1.1036515918E+003	-6.3097275568E+001	0.518	1.271	1.198
119.000	11.449	198.976	0.222	6.4612186555E+003	1.1035744682E+003	-6.3120396885E+001	0.518	1.271	1.198
119.814	11.461	199.157	0.234	6.4090753530E+003	1.0955544511E+003	-6.7087286316E+001	0.514	1.242	1.182
120.886	11.462	199.418	0.243	6.3328592400E+003	1.0834255419E+003	-7.3684082217E+001	0.508	1.206	1.163
121.959	11.463	199.679	0.243	6.2509628521E+003	1.0699826843E+003	-7.6487572503E+001	0.502	1.174	1.146
122.642	11.464	199.845	0.250	6.1986580771E+003	1.0611891649E+003	-8.1957052805E+001	0.498	1.155	1.137
123.715	11.440	200.118	0.255	6.1016744059E+003	1.0444721731E+003	-9.3451626924E+001	0.490	1.126	1.123
124.788	11.417	200.393	0.252	5.9981280575E+003	1.0262702315E+003	-9.6603813087E+001	0.483	1.100	1.110
125.500	11.395	200.569	0.247	5.9293156232E+003	1.0139571706E+003	-9.7085676420E+001	0.477	1.085	1.102
125.593	11.392	200.592	0.253	5.9202716709E+003	1.0123294316E+003	-9.7629501810E+001	0.476	1.083	1.102
126.666	11.332	200.864	0.254	5.8094787434E+003	9.9221371003E+002	-1.0533064195E+002	0.469	1.062	1.092
127.739	11.273	201.137	0.248	5.6942514678E+003	9.7091697739E+002	-1.0631998192E+002	0.460	1.044	1.083
128.672	11.209	201.362	0.244	5.5959526344E+003	9.5240830011E+002	-1.0788325781E+002	0.453	1.031	1.078
129.745	11.113	201.627	0.252	5.4771188732E+003	9.2972988736E+002	-1.1431098039E+002	0.444	1.018	1.072
130.818	11.027	201.903	0.250	5.3506622752E+003	9.0516380203E+002	-1.1093316322E+002	0.435	1.007	1.067
131.230	10.983	201.998	0.248	5.3060021423E+003	8.9636548991E+002	-1.1258769233E+002	0.431	1.004	1.065
132.102	10.913	202.221	0.263	5.1999250643E+003	8.7517342471E+002	-1.2500203608E+002	0.423	0.996	1.062
133.174	10.820	202.509	0.265	5.0614651219E+003	8.4710868235E+002	-1.2873983839E+002	0.413	0.988	1.058
134.247	10.722	202.790	0.258	4.9236730271E+003	8.1868391690E+002	-1.2669702813E+002	0.402	0.981	1.056
135.271	10.618	203.049	0.259	4.7957174008E+003	7.9196856534E+002	-1.2834012504E+002	0.392	0.976	1.054
136.344	10.502	203.333	0.269	4.6543140090E+003	7.6233470524E+002	-1.3368296210E+002	0.381	0.971	1.053
137.416	10.393	203.625	0.283	4.5088583285E+003	7.3187481370E+002	-1.4156567657E+002	0.369	0.967	1.053
138.322	10.323	203.892	0.300	4.3761070366E+003	7.0433991095E+002	-1.4828170059E+002	0.358	0.963	1.053
139.395	10.226	204.218	0.288	4.2149067463E+003	6.7137404455E+002	-1.4221057457E+002	0.345	0.960	1.055
140.468	10.097	204.510	0.269	4.0709492749E+003	6.4258120053E+002	-1.3121640054E+002	0.333	0.958	1.057
141.287	9.990	204.726	0.265	3.9652610579E+003	6.2185973179E+002	-1.2923177837E+002	0.325	0.956	1.059
142.360	9.832	205.012	0.263	3.8262204315E+003	5.9522027379E+002	-1.2767455745E+002	0.314	0.955	1.063
143.433	9.667	205.291	0.255	3.6912949179E+003	5.6988731507E+002	-1.2197301892E+002	0.305	0.955	1.067
144.297	9.524	205.506	0.251	3.5885369015E+003	5.5094433796E+002	-1.1960072552E+002	0.297	0.955	1.071
145.370	9.330	205.777	0.253	3.4593171262E+003	5.2740186226E+002	-1.2784900603E+002	0.288	0.955	1.076
145.370	9.330	205.777	0.256	3.4593149486E+003	5.2740146592E+002	-1.2784900941E+002	0.288	0.955	1.076
146.443	9.139	206.052	0.256	3.3298661856E+003	5.0401121864E+002	-1.1998563848E+002	0.279	0.956	1.082
147.256	8.994	206.260	0.265	3.2327549259E+003	4.8653556915E+002	-1.2190055666E+002	0.272	0.957	1.086
148.329	8.798	206.552	0.291	3.0985395466E+003	4.6233031788E+002	-1.3267017889E+002	0.262	0.959	1.092
149.402	8.644	206.885	0.311	2.9480691002E+003	4.3513111050E+002	-1.3933194480E+002	0.251	0.962	1.099
150.288	8.518	207.161	0.317	2.8251928714E+003	4.1289924057E+002	-1.3955070789E+002	0.241	0.963	1.105
151.361	8.355	207.506	0.329	2.6742037097E+003	3.8562329282E+002	-1.4236855701E+002	0.229	0.966	1.112
152.434	8.207	207.866	0.336	2.5196961084E+003	3.5784645274E+002	-1.4247194232E+002	0.216	0.969	1.119
153.421	8.072	208.198	0.323	2.3805288939E+003	3.3304979307E+002	-1.3428475599E+002	0.204	0.971	1.125
154.494	7.879	208.532	0.310	2.2443580530E+003	3.0919728019E+002	-1.2465778421E+002	0.193	0.973	1.131
155.566	7.685	208.864	0.305	2.1130361950E+003	2.8668444490E+002	-1.1909152437E+002	0.182	0.975	1.137
156.639	7.481	209.187	0.298	1.9888095249E+003	2.6586953543E+002	-1.0441082088E+002	0.172	0.977	1.143
156.778	7.451	209.225	0.330	1.9744872294E+003	2.6350403043E+002	-1.0532332586E+002	0.171	0.977	1.144
157.851	7.258	209.587	0.345	1.8417320974E+003	2.4198653775E+002	-1.2454989702E+002	0.160	0.979	1.151
158.924	7.082	209.966	0.352	1.7072260366E+003	2.2072427884E+002	-1.2328537423E+002	0.149	0.981	1.160
159.864	6.925	210.295	0.355	1.5931072329E+003	2.0303614165E+002	-1.2131107747E+002	0.140	0.983	1.168
160.937	6.724	210.681	0.357	1.4631383568E+003	1.8333809912E+002	-1.1853482451E+002	0.130	0.988	1.180
162.010	6.516	211.060	0.352	1.3387532804E+003	1.6485973702E+002	-1.1382339424E+002	0.119	0.993	1.193
162.853	6.350	211.356	0.353	1.2441658007E+003	1.5103285973E+002	-1.1140729080E+002	0.111	0.998	1.204
163.926	6.110	211.737	0.368	1.1256711015E+003	1.3403491062E+002	-1.1213580592E+002	0.102	1.006	1.222
164.999	5.897	212.146	0.366	1.0035429662E+003	1.1687751573E+002	-1.0176048094E+002	0.091	1.019	1.245
165.500	5.774	212.314	0.334	9.5536017456E+002	1.1028455658E+002	-9.5209845676E+001	0.087	1.026	1.257
165.752	5.712	212.397	0.337	9.3145489860E+002	1.0702475833E+002	-9.4645473045E+001	0.085	1.030	1.263
166.825	5.419	212.760	0.348	8.3038933956E+002	9.3455831550E+001	-9.4415991320E+001	0.077	1.047	1.291
167.898	5.146	213.143	0.355	7.2885553023E+002	8.0072252224E+001	-9.1838718808E+001	0.069	1.070	1.327
168.751	4.927	213.445	0.359	6.5245601049E+002	7.0171212486E+001	-8.8628186781E+001	0.062	1.092	1.359
169.824	4.616	213.834	0.366	5.5870195807E+002	5.8237060401E+001	-8.6023464754E+001	0.054	1.124	1.406
170.896	4.312	214.231	0.383	4.6786546200E+002	4.6858972739E+001	-8.8376899281E+001	0.045	1.159	1.460
171.969	4.037	214.656	0.396	3.6906137153E+002	3.4412790330E+001	-8.6125467038E+001	0.045	1.204	1.526
171.997	4.029	214.667	0.351	3.6669332597E+002	3.4117871293E+001	-8.5647588246E+001	0.045	1.205	1.527

173.070	3.669	215.042	0.350	2.8837349457E+002	2.4565768329E+001	-6.8628684701E+001	0.045	1.253	1.594
174.143	3.307	215.417	0.373	2.1942877917E+002	1.6597873789E+001	-6.4068646409E+001	0.045	1.312	1.675
175.216	2.997	215.843	0.401	1.5089395203E+002	9.3397082966E+000	-6.0464565302E+001	0.045	1.396	1.789
175.708	2.862	216.045	0.399	1.2190468897E+002	6.5533841992E+000	-5.3803561997E+001	0.045	1.427	1.832
176.781	2.515	216.467	0.491	7.6095319715E+001	3.2423988331E+000	-4.4150795666E+001	0.045	1.530	1.970
177.854	2.379	217.100	0.491	2.7165194211E+001	8.5475652064E-001	-3.5462178897E+001	0.045	1.681	2.158

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)
44.951	1.073	1.187	-25.330	-2.623	-3.114	100.192	118.931
46.024	0.366	0.405	-25.330	-6.140	-2.484	100.197	40.542
46.390	1.073	1.187	-25.330	-9.652	-11.457	100.594	119.408
47.463	1.073	1.187	-25.330	-14.888	-17.672	101.497	120.480
48.536	1.073	1.187	-25.330	-20.123	-23.887	102.544	121.723
49.609	1.073	1.187	-25.330	-25.358	-30.101	103.628	123.010
50.682	1.073	1.187	-25.330	-30.594	-36.316	104.823	124.428
51.755	1.073	1.187	-25.330	-35.829	-42.530	104.775	124.371
52.827	1.073	1.187	-25.330	-41.065	-48.745	104.812	124.415
53.900	1.073	1.187	-25.330	-46.300	-54.960	105.235	124.917
54.973	1.073	1.187	-25.330	-51.536	-61.174	105.856	125.655
56.046	0.034	0.038	-25.330	-54.236	-2.039	106.403	4.001
56.080	1.073	1.177	-24.234	-54.796	-64.472	106.536	125.350
57.153	1.073	1.177	-24.234	-59.668	-70.204	107.287	126.233
58.226	1.073	1.177	-24.234	-64.539	-75.936	108.092	127.180
59.299	1.073	1.177	-24.234	-69.411	-81.668	109.212	128.498
60.372	1.012	1.109	-24.234	-74.143	-82.249	110.067	122.100
61.383	1.073	1.156	-21.840	-71.845	-83.043	110.015	127.164
62.456	0.544	0.586	-21.840	-74.940	-43.898	111.122	65.093
63.000	1.073	1.156	-21.840	-78.213	-90.405	111.721	129.135
64.073	0.887	0.955	-21.840	-82.291	-78.628	111.440	106.480
64.960	1.073	1.134	-18.843	-74.999	-85.024	111.234	126.102
66.033	1.073	1.134	-18.843	-78.528	-89.025	111.501	126.404
67.106	0.853	0.901	-18.843	-81.696	-73.635	111.661	100.643
67.959	1.073	1.111	-14.989	-67.010	-74.427	110.011	122.189
69.032	1.073	1.111	-14.989	-69.455	-77.144	109.949	122.120
70.104	0.775	0.803	-14.989	-71.562	-57.442	110.009	88.303
70.880	1.073	1.096	-11.883	-56.878	-62.361	107.632	118.009
71.953	1.073	1.096	-11.883	-58.560	-64.205	107.695	118.078
73.026	0.528	0.540	-11.883	-59.815	-32.301	107.484	58.044
73.554	1.073	1.085	-8.660	-41.608	-45.157	105.550	114.551
74.627	1.073	1.085	-8.660	-42.610	-46.244	105.456	114.449
75.700	0.719	0.728	-8.660	-43.448	-31.615	105.268	76.598
76.419	1.073	1.078	-5.814	-25.511	-27.512	103.492	111.612
77.492	1.073	1.078	-5.814	-26.016	-28.057	103.599	111.727
78.565	0.897	0.902	-5.814	-26.480	-23.877	103.560	93.381
79.462	1.073	1.075	-3.556	-11.002	-11.827	102.112	109.769
80.535	0.405	0.406	-3.556	-11.128	-4.515	102.077	41.413
80.940	1.073	1.075	-3.556	-11.259	-12.103	102.003	109.651
82.013	1.041	1.043	-3.556	-11.450	-11.946	101.904	106.323

83.054	1.073	1.074	-2.698	-5.204	-5.589	101.416	108.931
84.127	1.073	1.074	-2.698	-5.286	-5.678	101.356	108.867
85.200	1.073	1.074	-2.698	-5.369	-5.766	101.312	108.819
86.273	0.034	0.034	-2.698	-5.411	-0.185	101.226	3.453
86.307	1.073	1.073	-1.707	2.344	2.516	100.839	108.239
87.380	1.073	1.073	-1.707	2.377	2.552	100.837	108.237
88.453	0.940	0.940	-1.707	2.409	2.265	100.833	94.797
89.393	1.073	1.073	-0.651	11.094	11.903	100.312	107.633
90.465	1.073	1.073	-0.651	11.237	12.057	100.321	107.642
91.538	0.831	0.831	-0.651	11.363	9.439	100.308	83.321
92.369	1.073	1.073	0.435	20.686	22.194	99.800	107.080
93.442	1.073	1.073	0.435	20.925	22.452	99.810	107.090
94.515	0.862	0.862	0.435	21.142	18.218	99.846	86.039
95.377	1.073	1.073	1.501	30.664	32.911	99.492	106.783
96.449	0.801	0.801	1.501	30.943	24.781	99.527	79.707
97.250	1.073	1.073	1.501	31.235	33.524	99.559	106.855
98.323	0.012	0.012	1.501	31.409	0.374	99.579	1.187
98.335	1.073	1.074	2.551	40.988	44.020	99.281	106.625
99.408	1.073	1.074	2.551	41.405	44.467	99.239	106.580
100.481	0.902	0.903	2.551	41.788	37.714	99.240	89.567
101.382	1.073	1.075	3.542	51.248	55.090	98.942	106.359
102.455	1.073	1.075	3.542	51.718	55.594	98.991	106.412
103.528	1.025	1.027	3.542	52.177	53.598	99.091	101.790
104.553	1.073	1.076	4.421	60.857	65.488	98.989	106.523
105.626	1.073	1.076	4.421	61.362	66.032	99.129	106.673
106.699	1.073	1.076	4.421	61.867	66.576	99.371	106.934
107.772	0.225	0.225	4.421	62.173	14.017	99.495	22.431
107.997	1.073	1.079	5.976	77.281	83.369	99.379	107.207
109.070	0.020	0.020	5.976	77.558	1.577	99.492	2.023
109.090	1.073	1.079	5.976	77.798	83.926	99.579	107.423
110.163	0.910	0.915	5.976	78.231	71.566	99.732	91.235
111.073	1.073	1.083	7.793	95.988	103.946	99.909	108.192
112.146	1.073	1.083	7.793	96.443	104.438	100.135	108.437
113.219	0.803	0.811	7.793	96.840	78.517	100.329	81.346
114.022	1.073	1.089	9.765	115.863	126.137	100.748	109.682
115.095	1.073	1.089	9.765	116.250	126.559	101.040	110.001
116.168	0.678	0.688	9.765	116.566	80.236	101.257	69.698
116.846	1.073	1.096	11.704	134.845	147.749	102.036	111.799
117.919	1.073	1.096	11.704	135.115	148.044	102.388	112.186
118.992	0.008	0.008	11.704	135.251	1.127	102.524	0.854
119.000	0.814	0.831	11.704	135.324	112.433	102.632	85.271
119.814	1.073	1.104	13.618	152.708	168.580	103.477	114.233
120.886	1.073	1.104	13.618	152.721	168.595	103.854	114.648
121.959	0.683	0.703	13.618	152.732	107.325	103.960	73.053
122.642	1.073	1.113	15.506	169.095	188.277	105.395	117.351
123.715	1.073	1.113	15.506	168.888	188.045	105.875	117.884
124.788	0.712	0.739	15.506	168.715	124.637	105.990	78.299
125.500	0.093	0.097	15.506	168.628	16.293	106.054	10.247
125.593	1.073	1.123	17.201	182.416	204.879	107.119	120.310
126.666	1.073	1.123	17.201	181.753	204.134	107.537	120.780
127.739	0.933	0.976	17.201	181.133	176.866	107.535	105.002
128.672	1.073	1.132	18.625	191.692	217.035	108.599	122.957
129.745	1.073	1.132	18.625	190.787	216.010	109.315	123.767
130.818	0.412	0.435	18.625	190.160	82.775	108.677	47.306
131.230	0.872	0.920	18.625	189.429	174.219	109.892	101.068
132.102	1.073	1.138	19.499	194.691	221.594	111.063	126.410
133.174	1.073	1.138	19.499	193.145	219.834	111.205	126.572
134.247	1.023	1.086	19.499	191.634	208.024	111.042	120.539
135.271	1.073	1.145	20.465	196.952	225.547	112.162	128.446
136.344	1.073	1.145	20.465	195.200	223.541	112.501	128.835
137.416	0.905	0.966	20.465	193.585	187.076	113.391	109.579
138.322	1.073	1.153	21.474	198.679	229.064	114.070	131.515
139.395	1.073	1.153	21.474	196.702	226.784	112.289	129.462
140.468	0.820	0.881	21.474	194.957	171.699	111.578	98.266
141.287	1.073	1.161	22.482	199.503	231.653	111.792	129.808
142.360	1.073	1.161	22.482	197.289	229.083	111.214	129.137

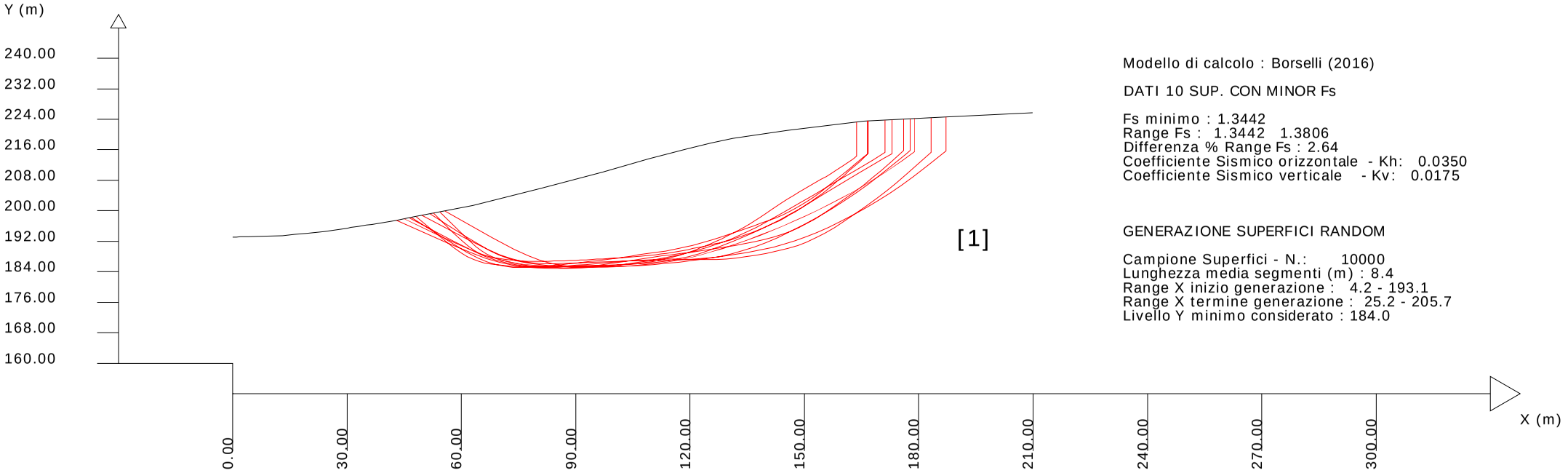
143.433	0.864	0.935	22.482	195.290	182.620	110.412	103.249
144.297	1.073	1.170	23.467	199.015	232.778	110.774	129.567
145.370	0.000	0.000	23.467	197.788	0.004	111.425	0.002
145.370	1.073	1.170	23.467	196.446	229.773	110.704	129.485
146.443	0.813	0.886	23.467	194.087	171.974	110.557	97.961
147.256	1.073	1.178	24.429	196.898	232.026	111.419	131.297
148.329	1.073	1.178	24.429	193.962	228.566	112.831	132.961
149.402	0.887	0.974	24.429	191.281	186.287	112.690	109.748
150.288	1.073	1.187	25.331	193.044	229.150	113.215	134.390
151.361	1.073	1.187	25.331	189.864	225.376	113.458	134.678
152.434	0.987	1.092	25.331	186.813	203.913	113.065	123.414
153.421	1.073	1.195	26.135	187.381	223.938	111.818	133.633
154.494	1.073	1.195	26.135	183.977	219.870	111.154	132.840
155.566	1.073	1.195	26.135	180.574	215.803	110.313	131.834
156.639	0.139	0.155	26.135	178.651	27.688	109.037	16.899
156.778	1.073	1.208	27.352	181.623	219.392	111.001	134.084
157.851	1.073	1.208	27.352	177.869	214.858	110.871	133.927
158.924	0.940	1.058	27.352	174.349	184.424	110.327	116.703
159.864	1.073	1.223	28.692	175.537	214.697	110.393	135.020
160.937	1.073	1.223	28.692	171.383	209.616	109.750	134.233
162.010	0.843	0.961	28.692	167.674	161.188	109.282	105.055
162.853	1.073	1.240	30.084	168.147	208.493	109.237	135.447
163.926	1.073	1.240	30.084	163.562	202.807	109.324	135.555
164.999	0.501	0.579	30.084	160.198	92.804	107.668	62.373
165.500	0.252	0.292	30.084	158.500	46.214	107.533	31.354
165.752	1.073	1.257	31.436	158.594	199.428	107.565	135.261
166.825	1.073	1.257	31.436	152.809	192.154	107.462	135.131
167.898	0.853	0.999	31.436	147.619	147.495	106.947	106.858
168.751	1.073	1.281	33.135	145.780	186.782	106.844	136.895
169.824	1.073	1.281	33.135	139.413	178.625	106.525	136.486
170.896	1.073	1.281	33.135	133.047	170.468	107.137	137.271
171.969	0.028	0.033	33.135	129.782	4.269	106.588	3.506
171.997	1.073	1.301	34.457	128.449	167.139	105.583	137.385
173.070	1.073	1.301	34.457	121.619	158.251	104.657	136.180
174.143	1.073	1.301	34.457	114.789	149.363	104.242	135.641
175.216	0.492	0.597	34.457	109.807	65.545	103.550	61.811
175.708	1.073	1.320	35.615	105.992	139.886	101.964	134.570
176.781	1.073	1.320	35.615	98.748	130.326	101.416	133.847
177.854	1.073	1.320	35.615	91.504	120.765	100.507	132.647

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

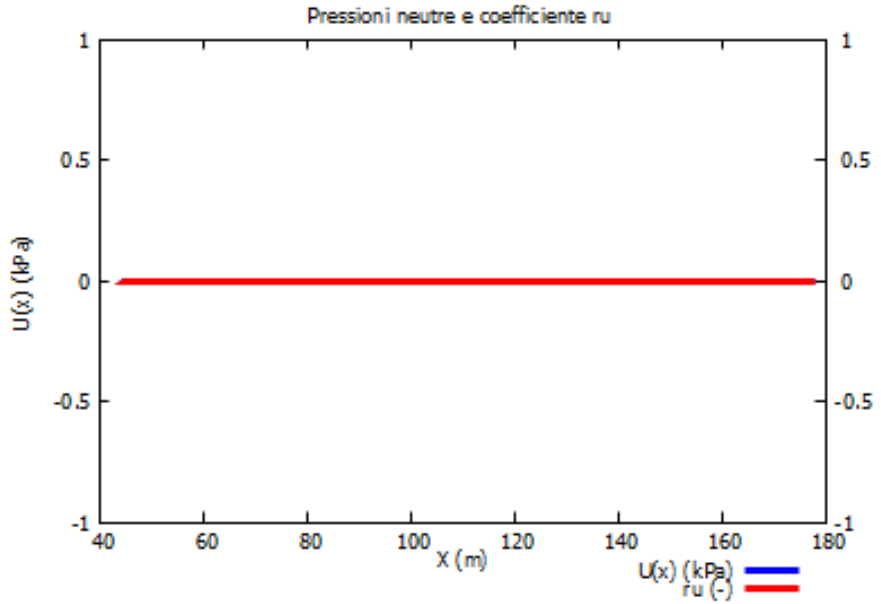
Fs minimo : 1.3442
Range Fs : 1.3442 1.3806
Differenza % Range Fs : 2.64
Coefficiente Sismico orizzontale - Kh: 0.0350
Coefficiente Sismico verticale - Kv: 0.0175

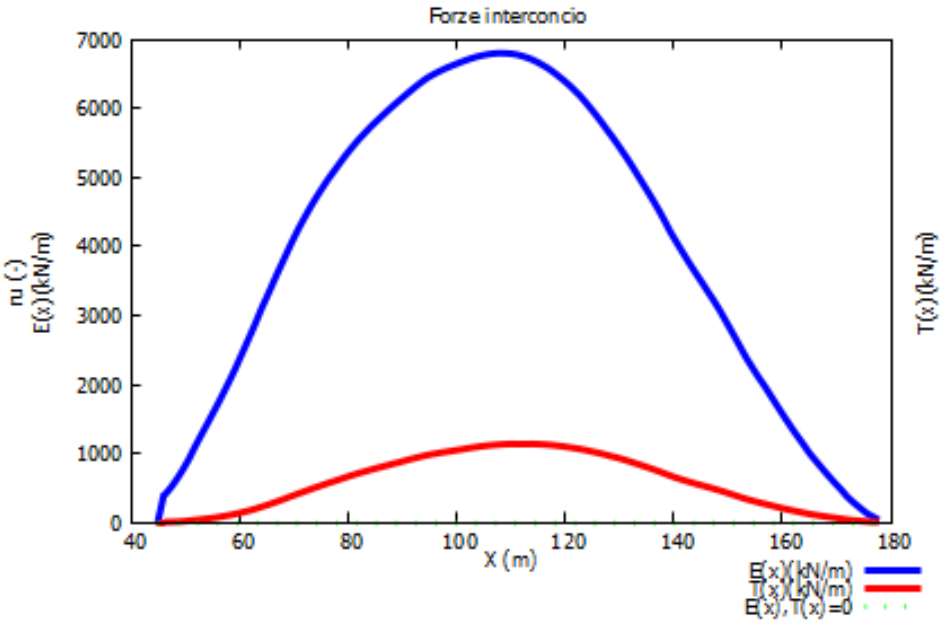
GENERAZIONE SUPERFICI RANDOM

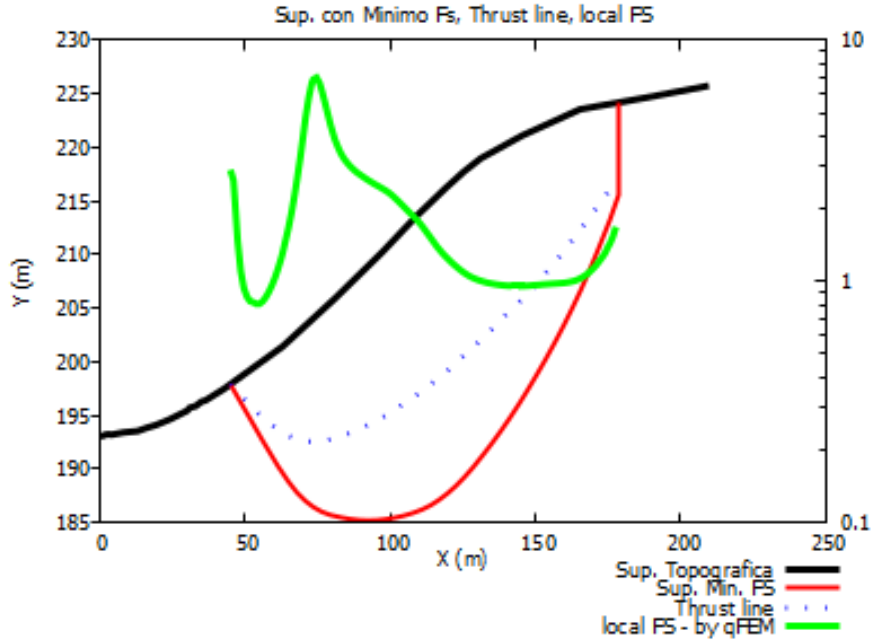
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 8.4
Range X inizio generazione : 4.2 - 193.1
Range X termine generazione : 25.2 - 205.7
Livello Y minimo considerato : 184.0

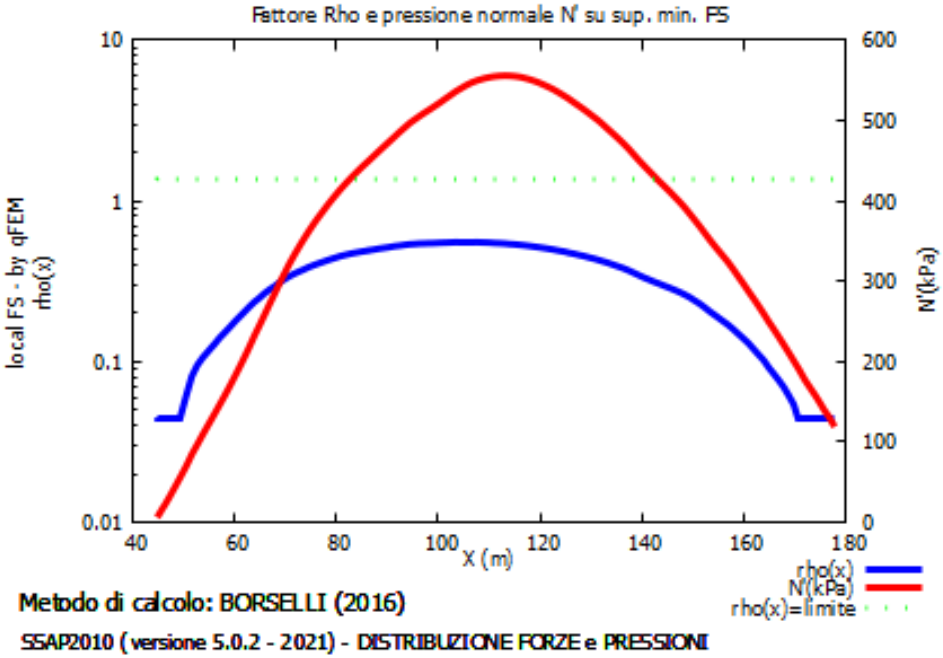
Parametri Geotecnici degli strati

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





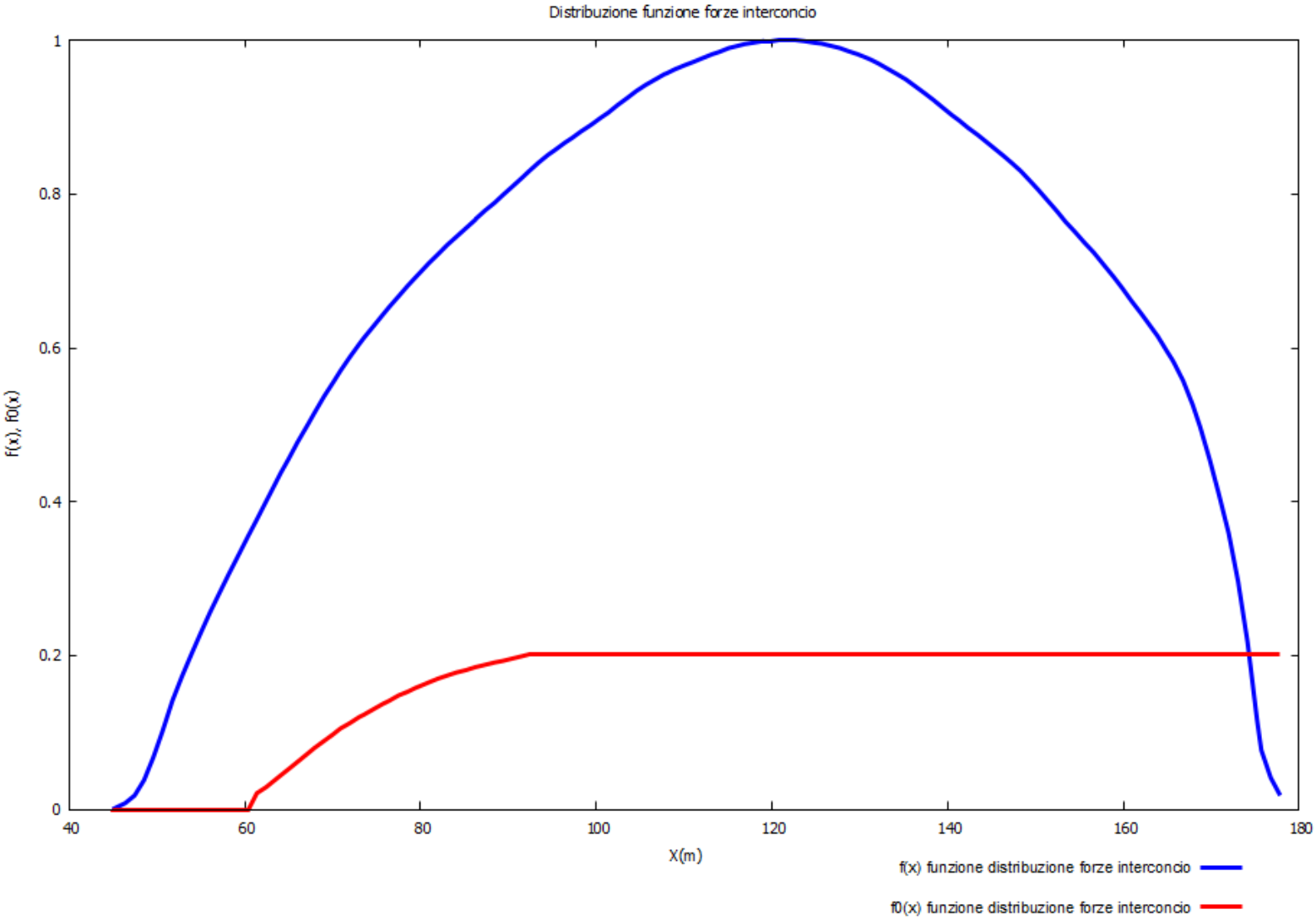


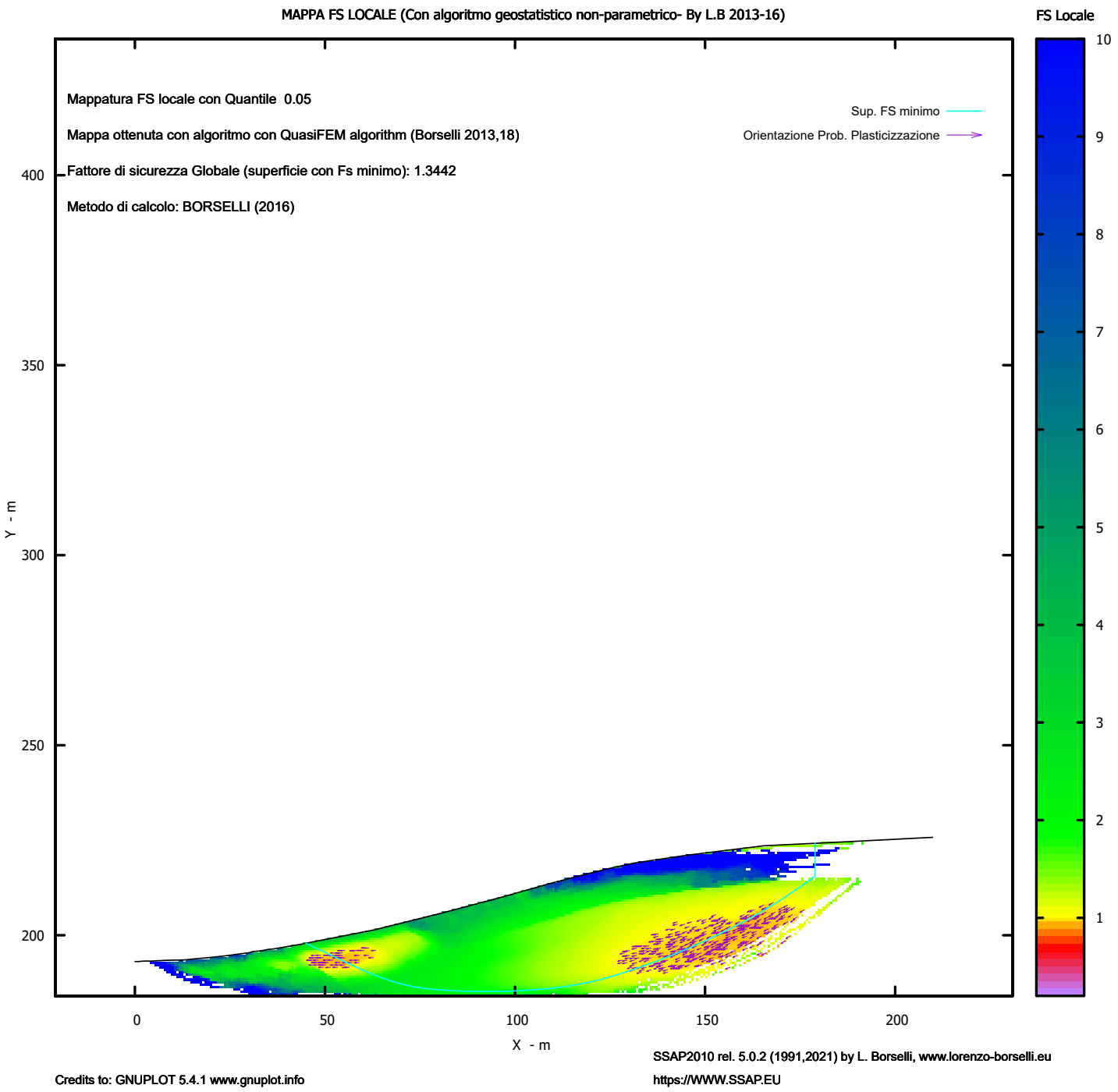


Metodo di calcolo: BORSELLI (2016)

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

18/11/21 13:32


Distribuzione funzione forze interconcio
f(x), f0(x)
X(m)
0
0.2
0.4
0.6
0.8
1
40
60
80
100
120
140
160
180
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): 1.3442
Metodo di calcolo: BORSELLI (2016)
Sup. FS minimo
Orientazione Prob. Plasticizzazione
Y - m
X - m
400
350
300
250
200
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