"SERRA CARUSO MOR"

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

PROGETTAZIONE

GVC SERVIZI DI INGEGNERIA
Via della Pineta 1 - 85100 - Potenza
email: info@gvcingegneria.it -
website: www.gvcingegneria.it
C.F e P.IVA 01737760767
P.E.C: gvcsrl@gigapec.it

Direttore Tecnico:
dott. ing. MICHELE RESTAINO

Collaboratori GVC s.r.l. per il progetto:
dott. ing. GIORGIO MARIA RESTAINO
dott. ing. CARLO RESTAINO
dott. ing. ATTILIO ZOLFANELLI

GVC s.r.l.
Direttore Tecnico
Ing.Michele Restaino

GEOLOGIA

Nuova Atlantide soc. coop. a r.l.
Località Palazzo snc - 75011 Accettura - Matera
email: progettazione@nuovaatlantide.com

Direttore Tecnico:
geol. ANTONIO DI BIASE

Collaboratore per il progetto:
geol. TOMMASO SANTOCHIRICO

"Nuova Atlantide" Società Cooperativa
Località Palazzo, s.n.c. - 75011 Accettura (MT)

ORDINE DEI GEOLOGI DI BASILICATA
Dott. Geol. DIBIASE Antonio
N. Iscriz. 257

ARCHEOLOGIA

Dott. Antonio Bruscella
Piazza Alcide De Gasperi 27 - 85100 - Potenza
email: antoniobruscella@hotmail.it

Dott. Antonio Bruscella

ANTONIO BRUSCELLA
Archeologo Specializzato

AGRONOMIA

Dott. agr. Paolo Castelli
Viale Croce Rossa 25 - 90144 - Palermo
email: paolo:castelli@hotmail.it
P.IVA 0546509826

ORDINE DEI DOTTORI AGRONOMI E DOTTORI FORESTALI PROVINCIA DI PALERMO
Dott. CASTELLI PAOLO N. 1498 ALBO SEZ. A

Committente

AMBRA SOLARE 17 s.r.l.
Via XX Settembre n.1 - 00187 ROMA, Italia
ambrasolare17srl@legalmail.it
C.F. e P.IVA 15946181003
SOCIETA' DEL GRUPPO POWERTIS s.r.l.

POWERTIS s.r.l.
Via Tevere, 41 - 00198 ROMA, Italia
www.powertis.com

Powertis

Comune

COMUNE DI CRACO (MT)

COD. RIF	G/139/02/A/01/PD		
ELABORATO		FILE	
Categoria	N.°		
PD		Scala	- - - - - - -

Opera

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

Oggetto

PROGETTO DEFINITIVO

RELAZIONE GEOLOGICA

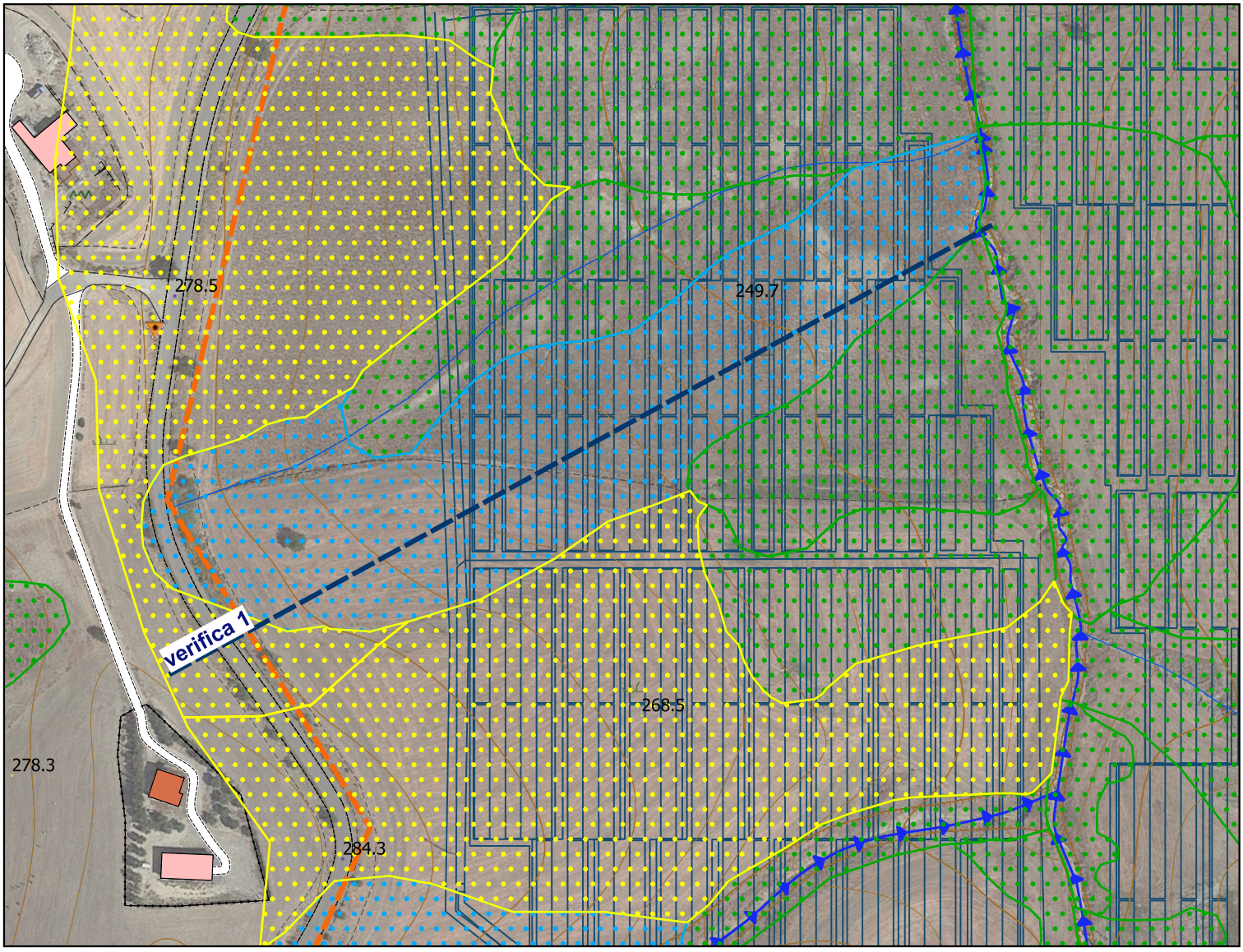
Analisi di stabilità dei pendii

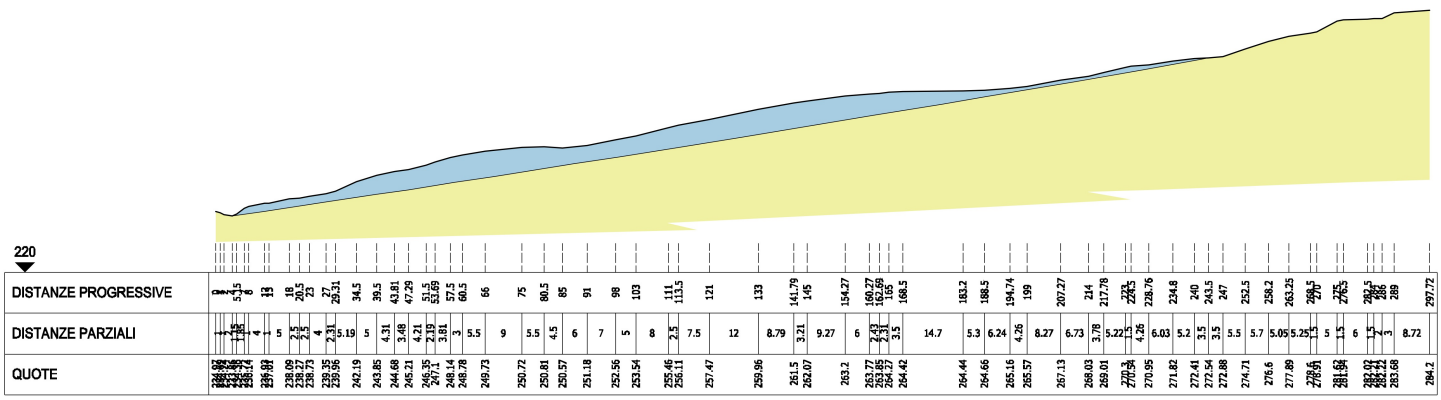
A.2.7

SEZIONE DI VERIFICA N. 1

CONDIZIONI DRENATE

SEZIONE DI VERIFICA N. 1





ARGILLE MARNOSE DEL T. SAURO (Pliocene sup.)
Argille marnose azzurre o grigio verdi a frattura concoide con fitte intercalazioni sottili di sabbie giallastre

CORPI DI FRANA (Olocene)
Coperture di natura limoso argillosa

Report elaborazioni

SSAP 5.0 - Slope Stability Analysis Program (1991,2020)
WWW.SSAP.EU
Build No. 11719
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: 12 settembre 2020

File report: C:\SSAP\CRACO\SERRACARUSOMOR\VERIFICA 1\DRENATA\MORG\MORG.txt
Data: 10/11/2021
Localita' :
Descrizione:
Modello pendio: verifica 1drenata.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
4.00	233.86	4.00	233.86	-	-	-	-
5.15	234.36	11.74	235.00	-	-	-	-
7.00	235.72	27.88	237.41	-	-	-	-
8.00	236.14	39.22	239.10	-	-	-	-
12.00	236.93	47.17	240.30	-	-	-	-
13.00	237.01	58.61	242.07	-	-	-	-
18.00	238.09	68.23	243.55	-	-	-	-
20.50	238.27	76.86	244.89	-	-	-	-
23.00	238.73	87.54	246.55	-	-	-	-
27.00	239.35	98.96	248.37	-	-	-	-
29.31	239.96	113.53	250.69	-	-	-	-
34.50	242.19	129.00	253.18	-	-	-	-
39.50	243.85	146.71	256.07	-	-	-	-
43.81	244.68	161.67	258.54	-	-	-	-
47.29	245.21	178.06	261.28	-	-	-	-
51.50	246.35	188.92	263.11	-	-	-	-
53.69	247.10	196.39	264.38	-	-	-	-
57.50	248.14	210.28	266.76	-	-	-	-
60.50	248.78	227.21	269.69	-	-	-	-
66.00	249.73	240.97	272.10	-	-	-	-
75.00	250.72	243.50	272.54	-	-	-	-
80.50	250.81	240.00	272.41	-	-	-	-
85.00	250.57	234.80	271.82	-	-	-	-
91.00	251.18	228.76	270.95	-	-	-	-
98.00	252.56	224.50	270.54	-	-	-	-
103.00	253.54	223.00	270.30	-	-	-	-
111.00	255.46	217.78	269.01	-	-	-	-
113.50	256.11	214.00	268.03	-	-	-	-
121.00	257.47	207.27	267.13	-	-	-	-
133.00	259.96	199.00	265.57	-	-	-	-
141.79	261.50	194.74	265.16	-	-	-	-
145.00	262.07	188.50	264.66	-	-	-	-
154.27	263.20	183.20	264.44	-	-	-	-
160.27	263.77	168.50	264.42	-	-	-	-
162.69	263.85	165.00	264.27	-	-	-	-
165.00	264.27	162.69	263.85	-	-	-	-
168.50	264.42	160.27	263.77	-	-	-	-
183.20	264.44	154.27	263.20	-	-	-	-
188.50	264.66	145.00	262.07	-	-	-	-
194.74	265.16	141.79	261.50	-	-	-	-
199.00	265.57	133.00	259.96	-	-	-	-
207.27	267.13	121.00	257.47	-	-	-	-
214.00	268.03	113.50	256.11	-	-	-	-
217.78	269.01	111.00	255.46	-	-	-	-
223.00	270.30	103.00	253.54	-	-	-	-
224.50	270.54	98.00	252.56	-	-	-	-
228.76	270.95	91.00	251.18	-	-	-	-
234.80	271.82	85.00	250.57	-	-	-	-
240.00	272.41	80.50	250.81	-	-	-	-

243.50	272.54	75.00	250.72	-	-	-	-
247.00	272.88	66.00	249.73	-	-	-	-
252.50	274.71	60.50	248.78	-	-	-	-
258.20	276.60	57.50	248.14	-	-	-	-
263.25	277.89	53.69	247.10	-	-	-	-
268.50	278.60	51.50	246.35	-	-	-	-
270.00	278.91	47.29	245.21	-	-	-	-
275.00	281.62	43.81	244.68	-	-	-	-
276.50	281.94	39.50	243.85	-	-	-	-
282.50	282.02	34.50	242.19	-	-	-	-
284.00	282.21	29.31	239.96	-	-	-	-
286.00	282.22	27.00	239.35	-	-	-	-
289.00	283.68	23.00	238.73	-	-	-	-
297.72	284.20	20.50	238.27	-	-	-	-
-	-	18.00	238.09	-	-	-	-
-	-	13.00	237.01	-	-	-	-
-	-	12.00	236.93	-	-	-	-
-	-	8.00	236.14	-	-	-	-
-	-	7.00	235.72	-	-	-	-
-	-	5.15	234.36	-	-	-	-
-	-	4.00	233.86	-	-	-	-

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
STRATO 2	22.00	5.00	0.00	18.00	20.00	1.322	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
METODO DI RICERCA: CONVEX RANDOM - Chen (1992)
FILTRAGGIO SUPERFICI : ATTIVATO
COORDINATE X1,X2,Y OSTACOLO : 0.00 0.00 0.00
LUNGHEZZA MEDIA SEGMENTI (m): 11.8 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 9.87 274.22
LIVELLO MINIMO CONSIDERATO (Ymin): 188.55
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 39.25 291.85

*** TOTALE SUPERFICI GENERATE : 10000

---------- 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 : 0.0450
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0225
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) 1.5895 - Min. - X Y Lambda= 0.3976
27.79 239.56
28.99 238.93
29.53 238.66
29.89 238.51
30.17 238.42

30.46	238.36
30.71	238.33
30.99	238.33
31.31	238.35
31.72	238.40
32.07	238.45
32.39	238.51
32.69	238.57
32.99	238.65
33.29	238.73
33.59	238.83
33.90	238.94
34.24	239.07
34.57	239.20
34.89	239.32
35.21	239.45
35.53	239.57
35.84	239.70
36.15	239.82
36.47	239.95
36.79	240.08
37.10	240.21
37.42	240.34
37.74	240.48
38.05	240.61
38.37	240.74
38.69	240.87
39.02	241.00
39.35	241.14
39.66	241.28
39.97	241.42
40.27	241.57
40.58	241.73
40.88	241.89
41.18	242.07
41.50	242.26
41.84	242.47
42.16	242.68
42.48	242.88
42.79	243.09
43.11	243.30
43.46	243.53
43.85	243.80
44.29	244.10
44.29	244.75

Fattore di sicurezza (FS) 1.5942 - N.2 -- X Y Lambda= 0.4062

26.41	239.26
27.74	238.77
28.36	238.56
28.77	238.44
29.11	238.36
29.45	238.32
29.75	238.30
30.08	238.30
30.43	238.33
30.86	238.37
31.25	238.42
31.61	238.48
31.96	238.53
32.31	238.60
32.66	238.67
33.01	238.75
33.38	238.84
33.77	238.94
34.14	239.04
34.49	239.15
34.83	239.26
35.18	239.39
35.52	239.52
35.87	239.66
36.24	239.82
36.63	240.00
37.00	240.18
37.35	240.35
37.69	240.54
38.04	240.74
38.38	240.94

38.73	241.16
39.08	241.40
39.46	241.66
39.83	241.91
40.19	242.17
40.55	242.42
40.91	242.67
41.31	242.96
41.75	243.28
42.38	243.74
42.38	244.40

Fattore di sicurezza (FS) 1.5951 - N.3 -- Lambda= 0.4041

X	Y
27.11	239.38
28.49	238.86
29.14	238.63
29.57	238.50
29.92	238.42
30.27	238.38
30.59	238.35
30.94	238.36
31.31	238.38
31.77	238.43
32.17	238.48
32.55	238.54
32.90	238.60
33.26	238.68
33.61	238.77
33.97	238.88
34.35	239.00
34.77	239.14
35.15	239.28
35.53	239.42
35.88	239.57
36.25	239.73
36.61	239.89
36.97	240.06
37.34	240.25
37.74	240.45
38.12	240.65
38.50	240.85
38.87	241.06
39.24	241.26
39.61	241.46
39.98	241.67
40.36	241.88
40.75	242.10
41.12	242.32
41.49	242.54
41.86	242.76
42.23	242.99
42.64	243.26
43.10	243.56
43.75	244.00
43.75	244.67

Fattore di sicurezza (FS) 1.5965 - N.4 -- Lambda= 0.4114

X	Y
26.54	239.28
27.58	238.75
28.07	238.51
28.40	238.37
28.66	238.27
28.93	238.20
29.17	238.16
29.43	238.12
29.72	238.10
30.07	238.10
30.37	238.10
30.65	238.11
30.92	238.12
31.19	238.15
31.46	238.18
31.73	238.22
32.02	238.27
32.34	238.34
32.63	238.41
32.91	238.48

33.17 238.56
33.45 238.65
33.71 238.74
33.99 238.85
34.27 238.97
34.58 239.11
34.87 239.24
35.16 239.38
35.43 239.51
35.71 239.66
35.98 239.81
36.26 239.96
36.54 240.13
36.83 240.30
37.12 240.48
37.41 240.65
37.69 240.82
37.97 241.00
38.25 241.18
38.53 241.36
38.82 241.55
39.12 241.74
39.40 241.94
39.68 242.13
39.94 242.33
40.22 242.55
40.52 242.79
40.87 243.09
41.36 243.52
41.36 244.21

Fattore di sicurezza (FS) 1.6018 - N.5 -- X Y Lambda= 0.4056
26.44 239.26
27.69 238.82
28.27 238.63
28.65 238.52
28.97 238.46
29.29 238.42
29.57 238.41
29.88 238.42
30.21 238.45
30.61 238.50
30.98 238.55
31.32 238.60
31.65 238.66
31.98 238.72
32.31 238.78
32.64 238.86
32.99 238.94
33.35 239.02
33.69 239.11
34.02 239.21
34.34 239.31
34.67 239.42
34.99 239.53
35.31 239.66
35.64 239.79
36.00 239.94
36.34 240.09
36.68 240.24
37.02 240.38
37.36 240.52
37.70 240.67
38.03 240.81
38.37 240.96
38.71 241.10
39.05 241.25
39.38 241.39
39.71 241.54
40.05 241.70
40.38 241.85
40.72 242.01
41.06 242.18
41.42 242.36
41.76 242.53
42.08 242.71
42.40 242.90
42.73 243.10

43.09	243.33
43.49	243.61
44.04	244.01
44.04	244.71

Fattore di sicurezza (FS) 1.6036 - N.6 -- X Y Lambda= 0.3891

27.00	239.35
28.36	238.72
28.98	238.45
29.38	238.31
29.70	238.22
30.03	238.17
30.31	238.16
30.63	238.17
30.98	238.20
31.42	238.28
31.82	238.34
32.19	238.41
32.55	238.48
32.90	238.55
33.26	238.62
33.61	238.70
33.97	238.78
34.34	238.87
34.70	238.96
35.06	239.05
35.41	239.14
35.77	239.24
36.13	239.34
36.49	239.44
36.85	239.54
37.23	239.65
37.59	239.77
37.94	239.88
38.28	240.00
38.63	240.14
38.98	240.28
39.33	240.43
39.69	240.59
40.09	240.77
40.45	240.95
40.80	241.13
41.14	241.31
41.50	241.51
41.84	241.72
42.18	241.93
42.54	242.16
42.91	242.41
43.28	242.66
43.64	242.90
44.01	243.14
44.36	243.38
44.77	243.65
45.22	243.95
45.79	244.33
45.79	244.98

Fattore di sicurezza (FS) 1.6050 - N.7 -- X Y Lambda= 0.3893

26.75	239.31
27.88	238.85
28.41	238.65
28.76	238.53
29.05	238.46
29.34	238.40
29.60	238.37
29.89	238.36
30.20	238.36
30.57	238.38
30.90	238.40
31.20	238.43
31.49	238.47
31.79	238.51
32.08	238.57
32.37	238.63
32.68	238.70
33.02	238.79
33.33	238.87

33.64 238.96
33.94 239.05
34.24 239.14
34.54 239.24
34.84 239.34
35.14 239.44
35.46 239.55
35.77 239.67
36.07 239.78
36.38 239.89
36.69 239.99
37.00 240.10
37.30 240.21
37.61 240.32
37.92 240.43
38.22 240.55
38.53 240.66
38.83 240.77
39.13 240.89
39.44 241.00
39.75 241.12
40.06 241.25
40.38 241.38
40.68 241.51
40.98 241.64
41.28 241.77
41.58 241.92
41.88 242.06
42.18 242.22
42.49 242.39
42.83 242.57
43.13 242.75
43.43 242.93
43.72 243.11
44.02 243.31
44.35 243.54
44.72 243.82
45.19 244.18
45.19 244.89

Fattore di sicurezza (FS) 1.6118 - N.8 -- X Y Lambda= 0.3991
25.69 239.15
26.96 238.77
27.58 238.60
28.01 238.49
28.39 238.41
28.74 238.35
29.07 238.30
29.43 238.26
29.80 238.23
30.23 238.21
30.59 238.20
30.94 238.21
31.25 238.23
31.60 238.27
31.92 238.33
32.26 238.40
32.61 238.50
33.03 238.63
33.41 238.75
33.77 238.87
34.12 239.00
34.47 239.13
34.81 239.27
35.17 239.42
35.53 239.58
35.91 239.76
36.28 239.94
36.63 240.12
36.98 240.30
37.34 240.49
37.69 240.68
38.04 240.88
38.41 241.10
38.80 241.33
39.16 241.55
39.51 241.79
39.85 242.02

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                                    40.20  242.28
                                    40.58  242.57
                                    41.02  242.92
                                    41.64  243.44
                                    41.87  243.63
                                    41.87  244.31


Fattore di sicurezza (FS)    1.6197  - N.9 --    X       Y       Lambda=  0.4052
                                    27.86  239.58
                                    29.07  239.06
                                    29.64  238.82
                                    30.02  238.69
                                    30.33  238.60
                                    30.64  238.54
                                    30.92  238.50
                                    31.23  238.48
                                    31.57  238.48
                                    31.98  238.50
                                    32.33  238.52
                                    32.65  238.55
                                    32.95  238.60
                                    33.27  238.66
                                    33.56  238.73
                                    33.88  238.82
                                    34.20  238.92
                                    34.58  239.06
                                    34.92  239.18
                                    35.25  239.31
                                    35.57  239.44
                                    35.89  239.58
                                    36.21  239.73
                                    36.53  239.88
                                    36.87  240.04
                                    37.22  240.23
                                    37.55  240.40
                                    37.88  240.58
                                    38.19  240.77
                                    38.51  240.96
                                    38.83  241.16
                                    39.15  241.37
                                    39.48  241.59
                                    39.82  241.83
                                    40.16  242.07
                                    40.48  242.31
                                    40.81  242.54
                                    41.14  242.78
                                    41.50  243.05
                                    41.91  243.36
                                    42.32  243.66
                                    42.32  244.39


Fattore di sicurezza (FS)    1.6201  - N.10 --    X       Y       Lambda=  0.3954
                                    25.74  239.15
                                    26.93  238.73
                                    27.50  238.55
                                    27.87  238.44
                                    28.19  238.38
                                    28.50  238.33
                                    28.78  238.31
                                    29.08  238.31
                                    29.41  238.32
                                    29.80  238.36
                                    30.15  238.39
                                    30.48  238.44
                                    30.79  238.49
                                    31.11  238.54
                                    31.41  238.61
                                    31.73  238.68
                                    32.05  238.77
                                    32.39  238.87
                                    32.73  238.96
                                    33.06  239.06
                                    33.39  239.15
                                    33.72  239.25
                                    34.05  239.34
                                    34.37  239.44
                                    34.71  239.53
```

35.04	239.63
35.36	239.73
35.68	239.83
36.00	239.93
36.32	240.04
36.64	240.16
36.96	240.28
37.29	240.41
37.64	240.55
37.96	240.68
38.29	240.82
38.61	240.97
38.93	241.12
39.24	241.27
39.56	241.43
39.89	241.59
40.22	241.77
40.55	241.94
40.88	242.11
41.21	242.29
41.53	242.46
41.86	242.63
42.19	242.80
42.51	242.97
42.84	243.14
43.16	243.31
43.49	243.48
43.82	243.65
44.14	243.82
44.51	244.01
44.75	244.14
44.75	244.82

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

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	1.590	360.0	226.5	110.9	Surplus
2	1.594	333.3	209.0	103.3	Surplus
3	1.595	356.9	223.7	110.8	Surplus
4	1.597	324.6	203.3	101.0	Surplus
5	1.602	349.8	218.4	109.6	Surplus
6	1.604	440.6	274.7	138.4	Surplus
7	1.605	394.3	245.7	124.1	Surplus
8	1.612	337.0	209.1	107.0	Surplus
9	1.620	320.6	198.0	102.9	Surplus
10	1.620	367.5	226.9	118.0	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 101.0

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

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

TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (°)	W (kN/m)	ru (-)	U (kPa)	phi' (°)	(c',Cu) (kPa)
27.786	0.094	-27.73	0.06	0.00	0.00	22.00	5.00
27.880	0.219	-27.73	0.65	0.00	0.00	22.00	5.00
28.099	0.056	-27.73	0.28	0.00	0.00	22.00	5.00
28.155	0.219	-27.73	1.53	0.00	0.00	22.00	5.00
28.374	0.219	-27.73	2.23	0.00	0.00	22.00	5.00
28.594	0.219	-27.73	2.93	0.00	0.00	22.00	5.00
28.813	0.173	-27.73	2.81	0.00	0.00	22.00	5.00
28.986	0.219	-26.31	4.16	0.00	0.00	22.00	5.00
29.206	0.104	-26.31	2.21	0.00	0.00	22.00	5.00
29.310	0.219	-26.31	5.23	0.00	0.00	22.00	5.00
29.529	0.004	-26.31	0.11	0.00	0.00	22.00	5.00

29.534	0.219	-22.83	6.03	0.00	0.00	22.00	5.00
29.753	0.135	-22.83	4.08	0.00	0.00	22.00	5.00
29.888	0.219	-17.91	7.20	0.00	0.00	22.00	5.00
30.107	0.062	-17.91	2.16	0.00	0.00	22.00	5.00
30.169	0.219	-11.40	8.01	0.00	0.00	22.00	5.00
30.389	0.071	-11.40	2.72	0.00	0.00	22.00	5.00
30.460	0.219	-5.99	8.70	0.00	0.00	22.00	5.00
30.679	0.031	-5.99	1.27	0.00	0.00	22.00	5.00
30.711	0.219	-0.40	9.20	0.00	0.00	22.00	5.00
30.930	0.065	-0.40	2.79	0.00	0.00	22.00	5.00
30.995	0.219	4.01	9.67	0.00	0.00	22.00	5.00
31.214	0.098	4.01	4.40	0.00	0.00	22.00	5.00
31.312	0.219	6.97	10.10	0.00	0.00	22.00	5.00
31.531	0.190	6.97	8.99	0.00	0.00	22.00	5.00
31.721	0.184	8.38	8.86	0.00	0.00	22.00	5.00
31.905	0.164	8.38	8.06	0.00	0.00	22.00	5.00
32.069	0.219	10.15	10.98	0.00	0.00	22.00	5.00
32.288	0.099	10.15	5.05	0.00	0.00	22.00	5.00
32.388	0.219	12.11	11.29	0.00	0.00	22.00	5.00
32.607	0.079	12.11	4.13	0.00	0.00	22.00	5.00
32.687	0.219	14.11	11.53	0.00	0.00	22.00	5.00
32.906	0.088	14.11	4.65	0.00	0.00	22.00	5.00
32.994	0.219	15.94	11.74	0.00	0.00	22.00	5.00
33.213	0.072	15.94	3.89	0.00	0.00	22.00	5.00
33.285	0.219	17.77	11.89	0.00	0.00	22.00	5.00
33.505	0.083	17.77	4.52	0.00	0.00	22.00	5.00
33.587	0.219	19.42	12.01	0.00	0.00	22.00	5.00
33.807	0.092	19.42	5.09	0.00	0.00	22.00	5.00
33.899	0.219	20.83	12.10	0.00	0.00	22.00	5.00
34.119	0.123	20.83	6.78	0.00	0.00	22.00	5.00
34.241	0.219	21.01	12.17	0.00	0.00	22.00	5.00
34.461	0.039	21.01	2.19	0.00	0.00	22.00	5.00
34.500	0.071	21.01	3.97	0.00	0.00	22.00	5.00
34.571	0.219	21.21	12.15	0.00	0.00	22.00	5.00
34.791	0.102	21.21	5.64	0.00	0.00	22.00	5.00
34.893	0.219	21.40	12.08	0.00	0.00	22.00	5.00
35.112	0.098	21.40	5.40	0.00	0.00	22.00	5.00
35.211	0.219	21.60	12.00	0.00	0.00	22.00	5.00
35.430	0.095	21.60	5.18	0.00	0.00	22.00	5.00
35.525	0.219	21.80	11.92	0.00	0.00	22.00	5.00
35.745	0.095	21.80	5.13	0.00	0.00	22.00	5.00
35.839	0.219	21.99	11.83	0.00	0.00	22.00	5.00
36.059	0.095	21.99	5.10	0.00	0.00	22.00	5.00
36.154	0.219	22.18	11.74	0.00	0.00	22.00	5.00
36.373	0.096	22.18	5.12	0.00	0.00	22.00	5.00
36.469	0.219	22.37	11.64	0.00	0.00	22.00	5.00
36.689	0.097	22.37	5.14	0.00	0.00	22.00	5.00
36.786	0.214	22.38	11.26	0.00	0.00	22.00	5.00
37.000	0.104	22.38	5.44	0.00	0.00	22.00	5.00
37.104	0.219	22.39	11.43	0.00	0.00	22.00	5.00
37.323	0.097	22.39	5.05	0.00	0.00	22.00	5.00
37.421	0.219	22.40	11.33	0.00	0.00	22.00	5.00
37.640	0.098	22.40	5.04	0.00	0.00	22.00	5.00
37.738	0.219	22.41	11.23	0.00	0.00	22.00	5.00
37.957	0.096	22.41	4.88	0.00	0.00	22.00	5.00
38.053	0.219	22.42	11.13	0.00	0.00	22.00	5.00
38.272	0.100	22.42	5.05	0.00	0.00	22.00	5.00
38.372	0.219	22.43	11.02	0.00	0.00	22.00	5.00
38.592	0.102	22.43	5.08	0.00	0.00	22.00	5.00
38.693	0.219	22.44	10.92	0.00	0.00	22.00	5.00
38.913	0.107	22.44	5.31	0.00	0.00	22.00	5.00
39.020	0.200	22.45	9.86	0.00	0.00	22.00	5.00
39.220	0.132	22.45	6.48	0.00	0.00	22.00	5.00
39.352	0.148	23.63	7.21	0.00	0.00	22.00	5.00
39.500	0.163	23.63	7.89	0.00	0.00	22.00	5.00
39.663	0.219	24.90	10.39	0.00	0.00	22.00	5.00
39.883	0.086	24.90	4.01	0.00	0.00	22.00	5.00
39.969	0.219	26.22	10.04	0.00	0.00	22.00	5.00
40.188	0.079	26.22	3.56	0.00	0.00	22.00	5.00
40.268	0.219	27.49	9.67	0.00	0.00	22.00	5.00
40.487	0.090	27.49	3.89	0.00	0.00	22.00	5.00
40.577	0.219	28.74	9.25	0.00	0.00	22.00	5.00
40.796	0.081	28.74	3.32	0.00	0.00	22.00	5.00
40.877	0.219	29.97	8.80	0.00	0.00	22.00	5.00
41.096	0.088	29.97	3.44	0.00	0.00	22.00	5.00
41.184	0.219	31.10	8.32	0.00	0.00	22.00	5.00
41.404	0.096	31.10	3.51	0.00	0.00	22.00	5.00
41.499	0.156	32.10	5.56	0.00	0.00	22.00	5.00
41.655	0.181	32.10	6.22	0.00	0.00	22.00	5.00

41.836	0.219	32.45	7.19	0.00	0.00	22.00	5.00
42.055	0.106	32.45	3.32	0.00	0.00	22.00	5.00
42.161	0.219	32.80	6.60	0.00	0.00	22.00	5.00
42.380	0.099	32.80	2.84	0.00	0.00	22.00	5.00
42.479	0.219	33.17	6.02	0.00	0.00	22.00	5.00
42.698	0.095	33.17	2.48	0.00	0.00	22.00	5.00
42.793	0.219	33.53	5.43	0.00	0.00	22.00	5.00
43.013	0.094	33.53	2.21	0.00	0.00	22.00	5.00
43.107	0.219	34.00	4.83	0.00	0.00	22.00	5.00
43.326	0.131	34.00	2.69	0.00	0.00	22.00	5.00
43.458	0.219	34.37	4.14	0.00	0.00	22.00	5.00
43.677	0.133	34.37	2.29	0.00	0.00	22.00	5.00
43.810	0.040	34.37	0.65	0.00	0.00	22.00	5.00
43.850	0.219	34.72	3.34	0.00	0.00	22.00	5.00
44.069	0.219	34.72	2.86	0.00	0.00	22.00	5.00

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 (--)
27.786	0.000	239.558	-0.332	0.0000000000E+000	0.0000000000E+000	4.4206729956E-001	0.053	12.381	11.305
27.880	0.019	239.527	-0.332	6.0051105048E-002	7.3929006959E-005	8.3354377824E-001	0.053	12.381	11.305
28.099	0.061	239.453	-0.311	3.4297466931E-001	3.6659089582E-003	1.4706809043E+000	0.053	7.846	7.503
28.155	0.078	239.441	-0.260	4.2732149333E-001	6.3580746262E-003	1.9970608397E+000	0.053	7.842	7.606
28.374	0.134	239.382	-0.288	1.2812402943E+000	9.0276822982E-002	6.3366428318E+000	0.053	9.464	7.296
28.594	0.182	239.315	-0.298	3.2076314646E+000	4.7000228039E-001	1.2737740138E+001	0.167	11.337	5.425
28.813	0.234	239.251	-0.270	6.8701407351E+000	1.2408127763E+000	1.6974349072E+001	0.289	10.403	4.260
28.986	0.282	239.209	-0.228	9.8500953089E+000	1.8862731082E+000	1.8454178870E+001	0.344	9.190	3.829
29.206	0.344	239.162	-0.190	1.4248235809E+001	2.8759622396E+000	1.9239819339E+001	0.404	7.546	3.450
29.310	0.381	239.147	-0.126	1.6212414960E+001	3.3342681026E+000	2.0113757943E+001	0.423	6.839	3.327
29.529	0.463	239.121	-0.119	2.1206079484E+001	4.5917482371E+000	2.1482126526E+001	0.469	5.366	3.094
29.534	0.465	239.121	-0.072	2.1301440780E+001	4.6166376058E+000	2.1521757834E+001	0.470	5.341	3.090
29.753	0.542	239.105	-0.062	2.6732967336E+001	6.1201827660E+000	2.5274720597E+001	0.519	4.224	2.904
29.888	0.592	239.099	-0.016	3.0181720336E+001	7.1260786527E+000	2.5586296517E+001	0.547	3.719	2.805
30.107	0.663	239.099	0.007	3.5792880890E+001	8.9070678907E+000	2.3620744834E+001	0.595	3.103	2.658
30.169	0.685	239.101	0.054	3.7222769934E+001	9.3868757207E+000	2.3231596082E+001	0.606	2.975	2.623
30.389	0.743	239.114	0.066	4.2446401274E+001	1.1252734314E+001	1.9897318939E+001	0.653	2.594	2.494
30.460	0.763	239.120	0.105	4.3775299219E+001	1.1759750077E+001	1.8564054125E+001	0.664	2.509	2.461
30.679	0.811	239.145	0.116	4.7807102619E+001	1.3400407614E+001	1.5364235972E+001	0.701	2.295	2.359
30.711	0.818	239.149	0.155	4.8271667135E+001	1.3607446725E+001	1.4860572585E+001	0.706	2.271	2.345
30.930	0.854	239.184	0.161	5.1413565683E+001	1.5074322278E+001	1.2560378421E+001	0.739	2.127	2.252
30.995	0.866	239.195	0.204	5.2192166037E+001	1.5466182230E+001	1.2063349415E+001	0.748		

2.094 2.228
31.214 0.897 239.242 0.220 5.4855069604E+001 1.6906536808E+001 1.0690360199E+001 0.783
1.982 2.136
31.312 0.913 239.264 0.268 5.5834804873E+001 1.7492110752E+001 1.0141709494E+001 0.797
1.942 2.098
31.531 0.949 239.327 0.301 5.8106558892E+001 1.8933097190E+001 9.6364633819E+000 0.832
1.851 2.004
31.721 0.987 239.388 0.317 5.9822494182E+001 2.0129255022E+001 8.1624312921E+000 0.861
1.779 1.924
31.905 1.017 239.445 0.328 6.1171362432E+001 2.1122197383E+001 7.0294830621E+000 0.885
1.724 1.860
32.069 1.050 239.502 0.334 6.2278716488E+001 2.1977302668E+001 5.9456461640E+000 0.904
1.676 1.804
32.288 1.081 239.573 0.320 6.3346940275E+001 2.2859197946E+001 4.0929601181E+000 0.924
1.624 1.745
32.388 1.094 239.604 0.316 6.3718928039E+001 2.3184611945E+001 3.4133521554E+000 0.930
1.603 1.722
32.607 1.117 239.674 0.313 6.4309098056E+001 2.3769122930E+001 1.9842902882E+000 0.943
1.562 1.679
32.687 1.124 239.697 0.323 6.4446291768E+001 2.3930206546E+001 1.5544578218E+000 0.946
1.548 1.665
32.906 1.141 239.770 0.333 6.4681448127E+001 2.4324169339E+001 5.6914825528E-001 0.954
1.511 1.629
32.994 1.149 239.800 0.337 6.4713717937E+001 2.4447919429E+001 9.8799685078E-002 0.957
1.497 1.616
33.213 1.160 239.874 0.342 6.4587232318E+001 2.4646084087E+001 -1.1461927754E+000 0.962
1.465 1.587
33.285 1.165 239.899 0.370 6.4490915900E+001 2.4686232430E+001 -1.5256025338E+000 0.964
1.454 1.577
33.505 1.177 239.981 0.389 6.4028335803E+001 2.4730542954E+001 -3.0910899930E+000 0.967
1.425 1.549
33.587 1.186 240.017 0.398 6.3741527409E+001 2.4699404301E+001 -3.5308000693E+000 0.967
1.414 1.539
33.807 1.194 240.102 0.386 6.2927021763E+001 2.4569978234E+001 -4.2133341929E+000 0.968
1.390 1.513
33.899 1.196 240.137 0.395 6.2517793706E+001 2.4476182833E+001 -4.4619120799E+000 0.967
1.382 1.504
34.119 1.201 240.225 0.400 6.1519406141E+001 2.4218838421E+001 -4.8767451244E+000 0.966
1.365 1.484
34.241 1.203 240.274 0.385 6.0899142897E+001 2.4031883214E+001 -4.9632109178E+000 0.964
1.358 1.474
34.461 1.202 240.357 0.377 5.9847844785E+001 2.3686319488E+001 -5.2381469269E+000 0.959
1.350 1.460
34.500 1.201 240.372 0.374 5.9638506361E+001 2.3610675104E+001 -5.3299826631E+000 0.958
1.349 1.457
34.571 1.201 240.398 0.346 5.9256279610E+001 2.3470953382E+001 -5.2731997662E+000 0.956
1.347 1.453
34.791 1.189 240.472 0.350 5.8152112053E+001 2.3036913159E+001 -5.5581290701E+000 0.951
1.343 1.443
34.893 1.188 240.511 0.360 5.7559101913E+001 2.2790987459E+001 -5.7042346513E+000 0.947
1.342 1.439
35.112 1.179 240.588 0.363 5.6354072266E+001 2.2264353187E+001 -5.9796000884E+000 0.939
1.341 1.430
35.211 1.179 240.626 0.381 5.5743984060E+001 2.1989525697E+001 -6.1485539266E+000 0.934
1.341 1.426
35.430 1.175 240.709 0.391 5.4419278044E+001 2.1376328659E+001 -6.6250377763E+000 0.923
1.341 1.418
35.525 1.178 240.749 0.380 5.3765961610E+001 2.1070849533E+001 -6.5720676860E+000 0.917
1.341 1.414
35.745 1.169 240.828 0.366 5.2479720072E+001 2.0463202492E+001 -6.1283266433E+000 0.905
1.342 1.407
35.839 1.167 240.864 0.363 5.1887626329E+001 2.0183447127E+001 -6.1236491645E+000 0.900
1.343 1.404
36.059 1.156 240.942 0.363 5.0604784649E+001 1.9581067259E+001 -6.1738321196E+000 0.888
1.344 1.398
36.154 1.154 240.979 0.364 5.0005146071E+001 1.9300903292E+001 -6.1963325348E+000 0.882
1.345 1.394
36.373 1.143 241.057 0.365 4.8705963364E+001 1.8699582147E+001 -6.2513238190E+000 0.870
1.347 1.388
36.469 1.141 241.094 0.367 4.8090717218E+001 1.8416430050E+001 -6.2680124070E+000 0.864
1.349 1.385
36.689 1.129 241.173 0.368 4.6779523637E+001 1.7817167905E+001 -6.2975804888E+000 0.851
1.352 1.378
36.786 1.127 241.210 0.369 4.6153259154E+001 1.7531851325E+001 -6.2908973310E+000 0.845
1.353 1.374
37.000 1.116 241.287 0.370 4.4876849259E+001 1.6953085587E+001 -6.2896763117E+000 0.832
1.357 1.367
37.104 1.114 241.328 0.371 4.4207235277E+001 1.6650457613E+001 -6.2825278317E+000 0.825
1.359 1.363

37.323	1.103	241.407	0.371	4.2905690054E+001	1.6065565323E+001	-6.2525363704E+000	0.812
1.363	1.355						
37.421	1.101	241.445	0.369	4.2283676204E+001	1.5787297479E+001	-6.2211589885E+000	0.805
1.365	1.350						
37.640	1.089	241.524	0.370	4.1004539250E+001	1.5218678086E+001	-6.1759519345E+000	0.792
1.369	1.341						
37.738	1.087	241.563	0.368	4.0384505753E+001	1.4944141891E+001	-6.1387990543E+000	0.785
1.370	1.336						
37.957	1.075	241.641	0.368	3.9131775247E+001	1.4393114380E+001	-6.1060037193E+000	0.771
1.374	1.327						
38.053	1.073	241.679	0.369	3.8530639976E+001	1.4129245155E+001	-6.0879803256E+000	0.764
1.376	1.322						
38.272	1.061	241.757	0.368	3.7290923829E+001	1.3586999841E+001	-5.9948380757E+000	0.750
1.380	1.311						
38.372	1.059	241.796	0.375	3.6675149459E+001	1.3316231455E+001	-6.0233721854E+000	0.742
1.382	1.306						
38.592	1.049	241.877	0.375	3.5415453522E+001	1.2760536122E+001	-6.0218199317E+000	0.727
1.385	1.295						
38.693	1.047	241.917	0.364	3.4790764338E+001	1.2482175124E+001	-5.9597091493E+000	0.718
1.386	1.290						
38.913	1.033	241.994	0.364	3.3574130700E+001	1.1935815081E+001	-6.0407883379E+000	0.702
1.386	1.282						
39.020	1.031	242.036	0.362	3.2900122917E+001	1.1628663160E+001	-6.0951917770E+000	0.692
1.385	1.278						
39.220	1.018	242.105	0.359	3.1751293916E+001	1.1099707099E+001	-6.1781597528E+000	0.674
1.381	1.273						
39.352	1.013	242.155	0.355	3.0897104129E+001	1.0703422433E+001	-6.2520808849E+000	0.660
1.376	1.270						
39.500	0.998	242.204	0.354	3.0007774798E+001	1.0290301919E+001	-6.4553810458E+000	0.645
1.370	1.269						
39.663	0.987	242.265	0.357	2.8873486816E+001	9.7640847772E+000	-6.9069602185E+000	0.629
1.362	1.270						
39.883	0.961	242.341	0.350	2.7368622340E+001	9.0738215733E+000	-7.1609205225E+000	0.607
1.353	1.273						
39.969	0.952	242.372	0.352	2.6741778243E+001	8.7889080165E+000	-7.2934634873E+000	0.597
1.349	1.276						
40.188	0.921	242.449	0.352	2.5133757794E+001	8.0746094983E+000	-7.5241234874E+000	0.572
1.342	1.284						
40.268	0.910	242.477	0.358	2.4531833816E+001	7.8114953329E+000	-7.6217276388E+000	0.563
1.340	1.288						
40.487	0.874	242.556	0.360	2.2843131893E+001	7.0928318828E+000	-7.7986642147E+000	0.536
1.336	1.301						
40.577	0.860	242.588	0.366	2.2135963358E+001	6.7988295636E+000	-7.8484227850E+000	0.525
1.336	1.306						
40.796	0.821	242.669	0.370	2.0409794064E+001	6.1036781216E+000	-7.9518135601E+000	0.497
1.336	1.322						
40.877	0.807	242.699	0.376	1.9766435245E+001	5.8503080764E+000	-7.9529067936E+000	0.487
1.337	1.328						
41.096	0.763	242.782	0.385	1.8039373274E+001	5.1847694188E+000	-8.1718414033E+000	0.458
1.341	1.343						
41.184	0.748	242.817	0.399	1.7309702600E+001	4.9119858917E+000	-8.1885319442E+000	0.446
1.343	1.350						
41.404	0.702	242.904	0.408	1.5569850289E+001	4.2740077169E+000	-8.2352319474E+000	0.415
1.351	1.365						
41.499	0.686	242.946	0.429	1.4769656363E+001	3.9887696693E+000	-8.2322465197E+000	0.400
1.356	1.372						
41.655	0.655	243.012	0.441	1.3523700562E+001	3.5502483582E+000	-8.0767736987E+000	0.376
1.364	1.382						
41.836	0.624	243.095	0.452	1.2048031242E+001	3.0467975780E+000	-7.9213910295E+000	0.346
1.376	1.393						
42.055	0.583	243.193	0.463	1.0371735853E+001	2.4897376427E+000	-7.8855142096E+000	0.308
1.392	1.404						
42.161	0.568	243.245	0.455	9.5267439917E+000	2.2158088775E+000	-7.5825458745E+000	0.287
1.402	1.410						
42.380	0.522	243.341	0.453	8.0550224400E+000	1.7536974552E+000	-6.9755691434E+000	0.249
1.421	1.421						
42.479	0.507	243.389	0.447	7.3552352230E+000	1.5405450883E+000	-6.6970257479E+000	0.229
1.431	1.427						
42.698	0.457	243.483	0.430	6.0805552425E+000	1.1683320318E+000	-5.5280384955E+000	0.192
1.454	1.442						
42.793	0.437	243.524	0.462	5.5673795463E+000	1.0274673948E+000	-5.3995153654E+000	0.177
1.465	1.449						
43.013	0.395	243.628	0.479	4.3860570648E+000	7.2215287103E-001	-5.2743101071E+000	0.139
1.500	1.476						
43.107	0.379	243.675	0.470	3.8925006454E+000	6.0207403714E-001	-5.0648042929E+000	0.122
1.517	1.488						
43.326	0.332	243.775	0.460	2.8639231215E+000	3.6012552271E-001	-4.4865245238E+000	0.083
1.562	1.524						
43.458	0.304	243.836	0.485	2.2902747054E+000	2.3570478455E-001	-4.2535722385E+000	0.059

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  1.598       1.555
      43.677       0.263     243.946       0.472   1.3981265407E+000   7.6579437585E-002  -3.3153997717E+000       0.053
  1.677       1.624
      43.810       0.229     244.002       0.408   1.0183911753E+000   3.1229769601E-002  -2.2296986249E+000       0.053
  1.722       1.665
      43.850       0.215     244.016       0.556   9.3741981077E-001   2.4337277934E-002  -2.1557915822E+000       0.053
  1.729       1.673
      44.069       0.194     244.146       0.556   3.2526608424E-001   2.4864654957E-003  -2.1364864298E+000       0.053
  1.938       1.881

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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           dx          dl         alpha     TauStress    TauF      TauStrength   TauS
      (m)          (m)         (m)          (°)       (kPa)     (kN/m)       (kPa)     (kN/m)
     27.786       0.094       0.106      -27.729      -0.258     -0.027       5.222       0.556
     27.880       0.219       0.248      -27.729      -1.116     -0.277       5.976       1.481
     28.099       0.056       0.063      -27.729      -1.868     -0.117       6.655       0.418
     28.155       0.219       0.248      -27.729      -2.621     -0.650       7.627       1.890
     28.374       0.219       0.248      -27.729      -3.822     -0.947       9.970       2.471
     28.594       0.219       0.248      -27.729      -5.023     -1.245      12.734       3.156
     28.813       0.173       0.196      -27.729      -6.097     -1.194      13.864       2.714
     28.986       0.219       0.245      -26.310      -6.855     -1.678      15.613       3.821
     29.206       0.104       0.116      -26.310      -7.671     -0.891      16.256       1.889
     29.310       0.219       0.245      -26.310      -8.607     -2.107      18.390       4.501
     29.529       0.004       0.005      -26.310      -9.295     -0.046      18.896       0.094
     29.534       0.219       0.238      -22.830      -8.780     -2.090      20.862       4.966
     29.753       0.135       0.146      -22.830      -9.666     -1.413      22.388       3.273
     29.888       0.219       0.231      -17.908      -8.270     -1.907      23.933       5.518
     30.107       0.062       0.065      -17.908      -8.761     -0.571      24.343       1.586
     30.169       0.219       0.224      -11.401      -5.493     -1.229      25.218       5.644
     30.389       0.071       0.073      -11.401      -5.748     -0.418      24.905       1.813
     30.460       0.219       0.221       -5.985      -2.348     -0.518      25.152       5.548
     30.679       0.031       0.031       -5.985      -2.421     -0.076      25.182       0.788
     30.711       0.219       0.219       -0.401       1.594      0.350      24.726       5.425
     30.930       0.065       0.065       -0.401       1.637      0.106      24.927       1.612
     30.995       0.219       0.220        4.014       5.050      1.111      24.573       5.404
     31.214       0.098       0.098        4.014       5.170      0.505      24.830       2.427
     31.312       0.219       0.221        6.975       7.594      1.678      24.590       5.435
     31.531       0.190       0.192        6.975       7.785      1.493      24.990       4.793
     31.721       0.184       0.186        8.380       9.079      1.686      24.846       4.614
     31.905       0.164       0.166        8.380       9.249      1.534      25.169       4.173
     32.069       0.219       0.223       10.152      10.870      2.423      24.909       5.551
     32.288       0.099       0.101       10.152      11.030      1.114      25.108       2.536
     32.388       0.219       0.224       12.107      12.769      2.865      24.849       5.575
     32.607       0.079       0.081       12.107      12.916      1.048      25.037       2.032
     32.687       0.219       0.226       14.110      14.657      3.315      24.762       5.601
     32.906       0.088       0.090       14.110      14.797      1.336      24.950       2.253
     32.994       0.219       0.228       15.945      16.362      3.733      24.691       5.634
     33.213       0.072       0.075       15.945      16.481      1.238      24.850       1.866
     33.285       0.219       0.230       17.769      17.970      4.140      24.560       5.658
     33.505       0.083       0.087       17.769      18.071      1.572      24.725       2.151
     33.587       0.219       0.233       19.415      19.360      4.503      24.450       5.687
     33.807       0.092       0.098       19.415      19.439      1.906      24.588       2.411
     33.899       0.219       0.235       20.827      20.495      4.811      24.337       5.712
     34.119       0.123       0.131       20.827      20.552      2.696      24.452       3.208
     34.241       0.219       0.235       21.012      20.735      4.873      24.469       5.751
     34.461       0.039       0.042       21.012      20.776      0.876      24.569       1.036
     34.500       0.071       0.077       21.012      20.769      1.589      24.569       1.880
     34.571       0.219       0.235       21.206      20.847      4.906      24.479       5.760
     34.791       0.102       0.110       21.206      20.785      2.278      24.500       2.686
     34.893       0.219       0.236       21.404      20.853      4.914      24.397       5.749
     35.112       0.098       0.106       21.404      20.787      2.198      24.411       2.581
     35.211       0.219       0.236       21.605      20.852      4.920      24.307       5.735
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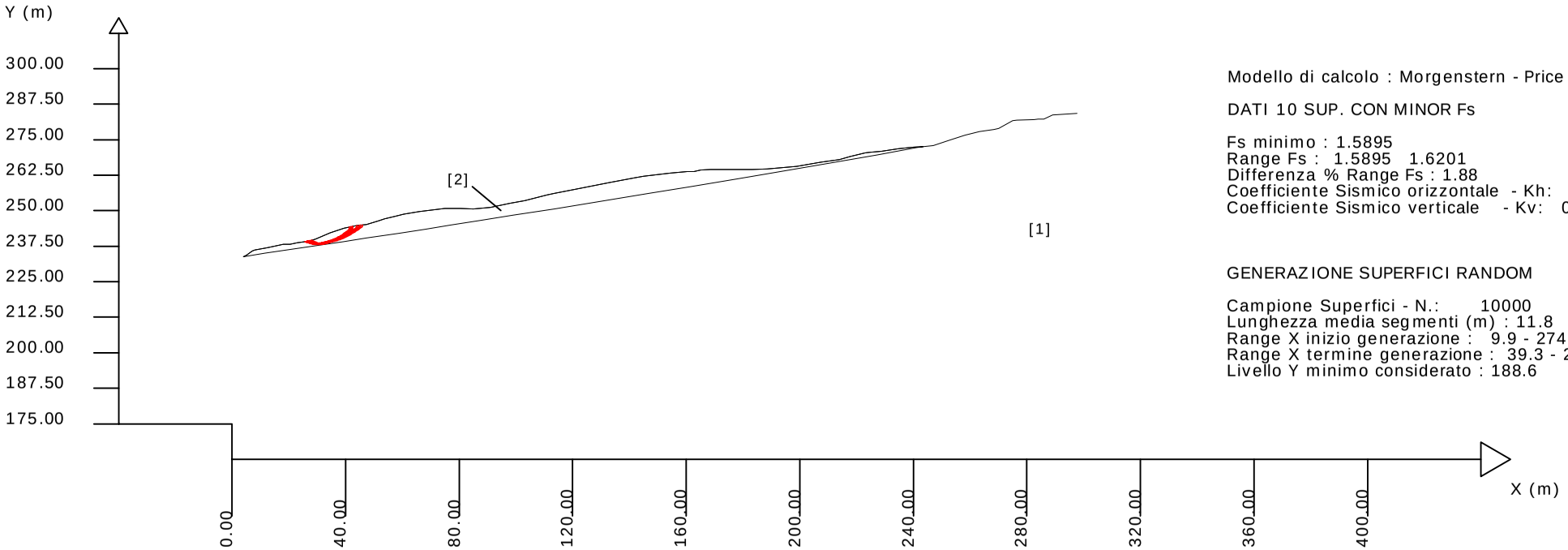
35.430	0.095	0.102	21.605	20.781	2.123	24.326	2.485
35.525	0.219	0.236	21.799	20.836	4.923	24.132	5.702
35.745	0.095	0.102	21.799	20.760	2.121	24.101	2.462
35.839	0.219	0.237	21.993	20.808	4.923	23.950	5.667
36.059	0.095	0.102	21.993	20.728	2.123	23.921	2.450
36.154	0.219	0.237	22.185	20.767	4.920	23.765	5.630
36.373	0.096	0.104	22.185	20.682	2.149	23.732	2.465
36.469	0.219	0.237	22.374	20.713	4.914	23.571	5.592
36.689	0.097	0.105	22.374	20.622	2.169	23.536	2.475
36.786	0.214	0.231	22.384	20.539	4.755	23.407	5.419
37.000	0.104	0.112	22.384	20.448	2.296	23.373	2.625
37.104	0.219	0.237	22.393	20.360	4.831	23.238	5.514
37.323	0.097	0.105	22.393	20.269	2.133	23.200	2.441
37.421	0.219	0.237	22.402	20.184	4.789	23.061	5.472
37.640	0.098	0.106	22.402	20.092	2.129	23.027	2.440
37.738	0.219	0.237	22.412	20.006	4.748	22.883	5.430
37.957	0.096	0.104	22.412	19.915	2.062	22.857	2.367
38.053	0.219	0.237	22.421	19.829	4.706	22.715	5.391
38.272	0.100	0.108	22.421	19.737	2.137	22.685	2.456
38.372	0.219	0.237	22.430	19.650	4.664	22.565	5.356
38.592	0.102	0.110	22.430	19.556	2.149	22.529	2.475
38.693	0.219	0.237	22.440	19.468	4.621	22.393	5.315
38.913	0.107	0.116	22.440	19.373	2.249	22.390	2.599
39.020	0.200	0.216	22.449	19.289	4.173	22.264	4.817
39.220	0.132	0.143	22.449	19.191	2.744	22.256	3.182
39.352	0.148	0.161	23.630	19.762	3.189	21.905	3.535
39.500	0.163	0.178	23.630	19.555	3.487	21.839	3.895
39.663	0.219	0.242	24.901	19.844	4.800	21.280	5.147
39.883	0.086	0.095	24.901	19.524	1.854	21.076	2.001
39.969	0.219	0.245	26.217	19.803	4.843	20.550	5.025
40.188	0.079	0.088	26.217	19.447	1.718	20.307	1.794
40.268	0.219	0.247	27.487	19.609	4.849	19.777	4.891
40.487	0.090	0.102	27.487	19.193	1.951	19.482	1.981
40.577	0.219	0.250	28.738	19.230	4.811	18.910	4.731
40.796	0.081	0.092	28.738	18.782	1.726	18.604	1.710
40.877	0.219	0.253	29.967	18.722	4.741	18.020	4.563
41.096	0.088	0.102	29.967	18.215	1.850	17.725	1.800
41.184	0.219	0.256	31.099	18.016	4.616	17.108	4.383
41.404	0.096	0.112	31.099	17.451	1.949	16.795	1.876
41.499	0.156	0.184	32.104	17.240	3.165	16.267	2.987
41.655	0.181	0.214	32.104	16.591	3.545	15.872	3.391
41.836	0.219	0.260	32.446	15.886	4.130	15.255	3.966
42.055	0.106	0.125	32.446	15.243	1.907	14.909	1.865
42.161	0.219	0.261	32.804	14.663	3.827	14.266	3.723
42.380	0.099	0.117	32.804	14.019	1.645	13.923	1.634
42.479	0.219	0.262	33.167	13.429	3.520	13.293	3.484
42.698	0.095	0.113	33.167	12.777	1.449	12.832	1.455
42.793	0.219	0.263	33.532	12.171	3.203	12.369	3.255
43.013	0.094	0.113	33.532	11.503	1.303	11.945	1.353
43.107	0.219	0.265	34.002	10.885	2.881	11.433	3.025
43.326	0.131	0.159	34.002	10.116	1.603	10.942	1.734
43.458	0.219	0.266	34.374	9.377	2.492	10.374	2.757
43.677	0.133	0.161	34.374	8.586	1.381	9.771	1.571
43.810	0.040	0.048	34.374	8.191	0.394	9.481	0.456
43.850	0.219	0.267	34.724	7.582	2.024	9.068	2.420
44.069	0.219	0.267	34.724	6.493	1.733	8.449	2.255

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

Data : 10/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Morgenstern - Price (1965)

DATI 10 SUP. CON MINOR Fs

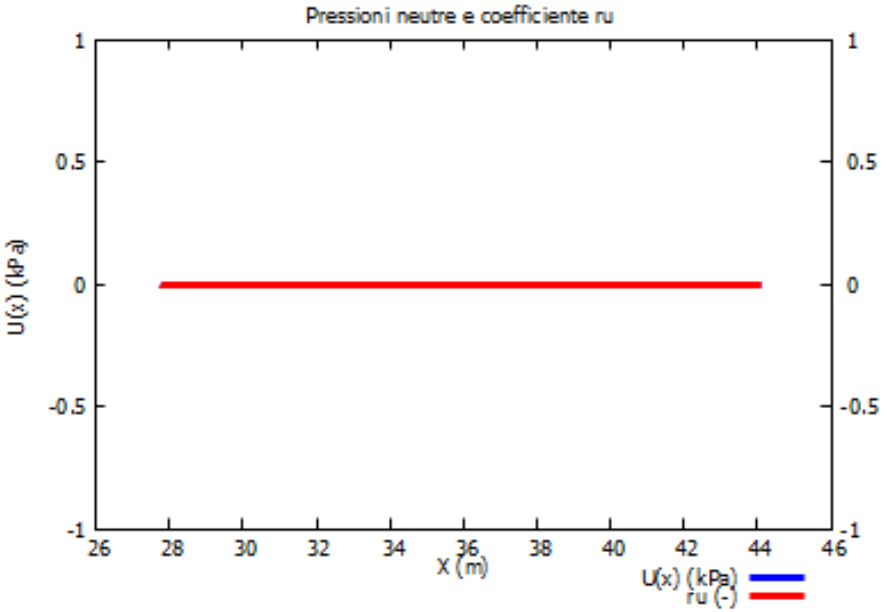
Fs minimo : 1.5895
Range Fs : 1.5895 1.6201
Differenza % Range Fs : 1.88
Coefficiente Sismico orizzontale - Kh: 0.0450
Coefficiente Sismico verticale - Kv: 0.0225

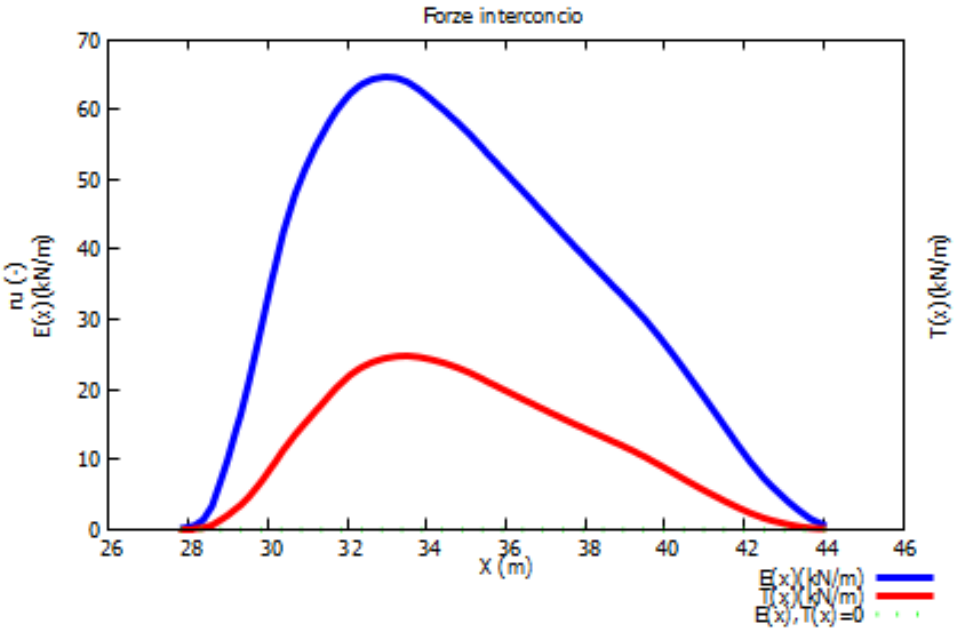
GENERAZIONE SUPERFICI RANDOM

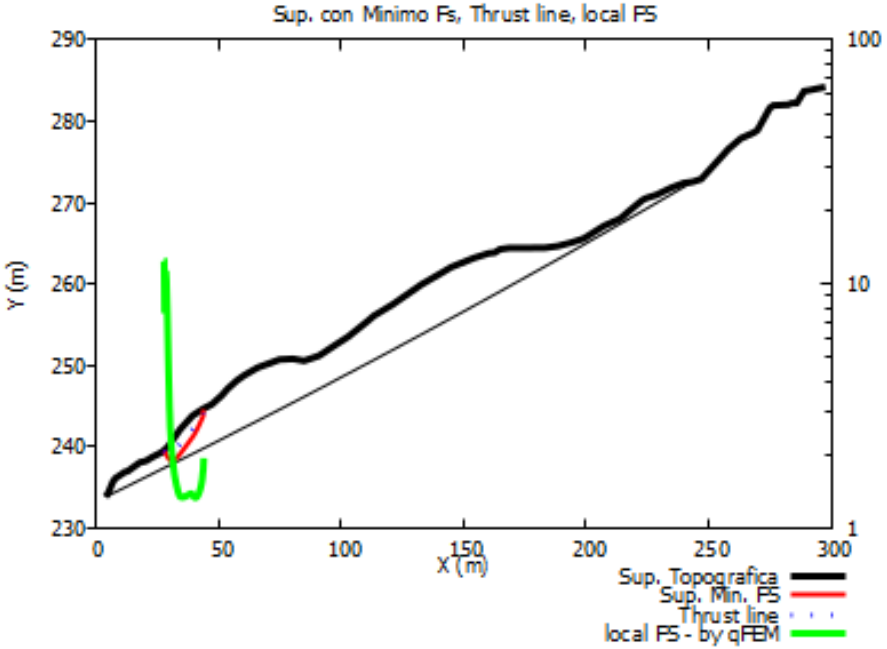
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 11.8
Range X inizio generazione : 9.9 - 274.2
Range X termine generazione : 39.3 - 291.9
Livello Y minimo considerato : 188.6

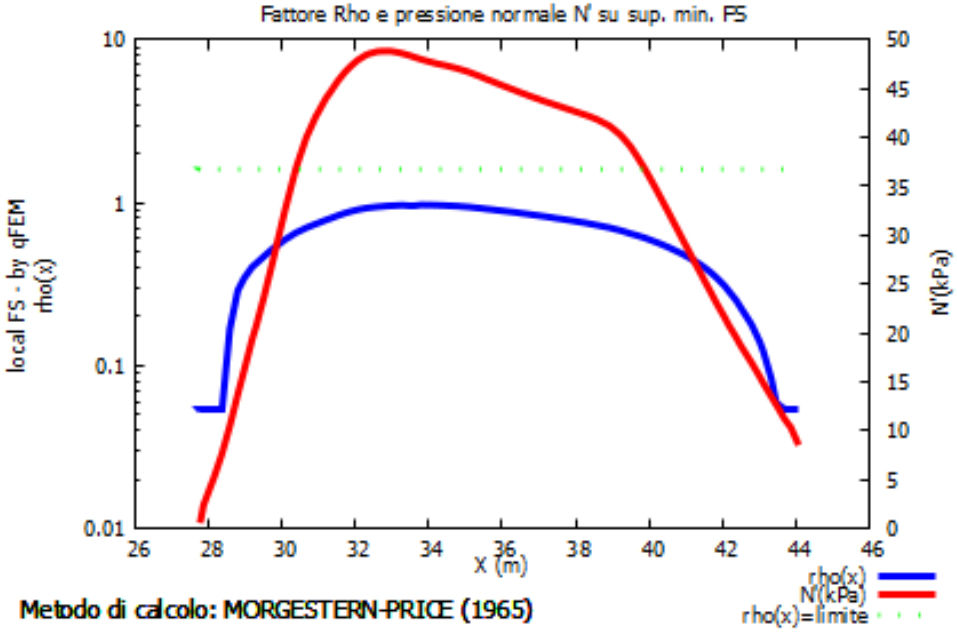
Parametri Geotecnici degli strati # ----------

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
2	22.00	5.00	0	18.00	20.00	0	0	0	0





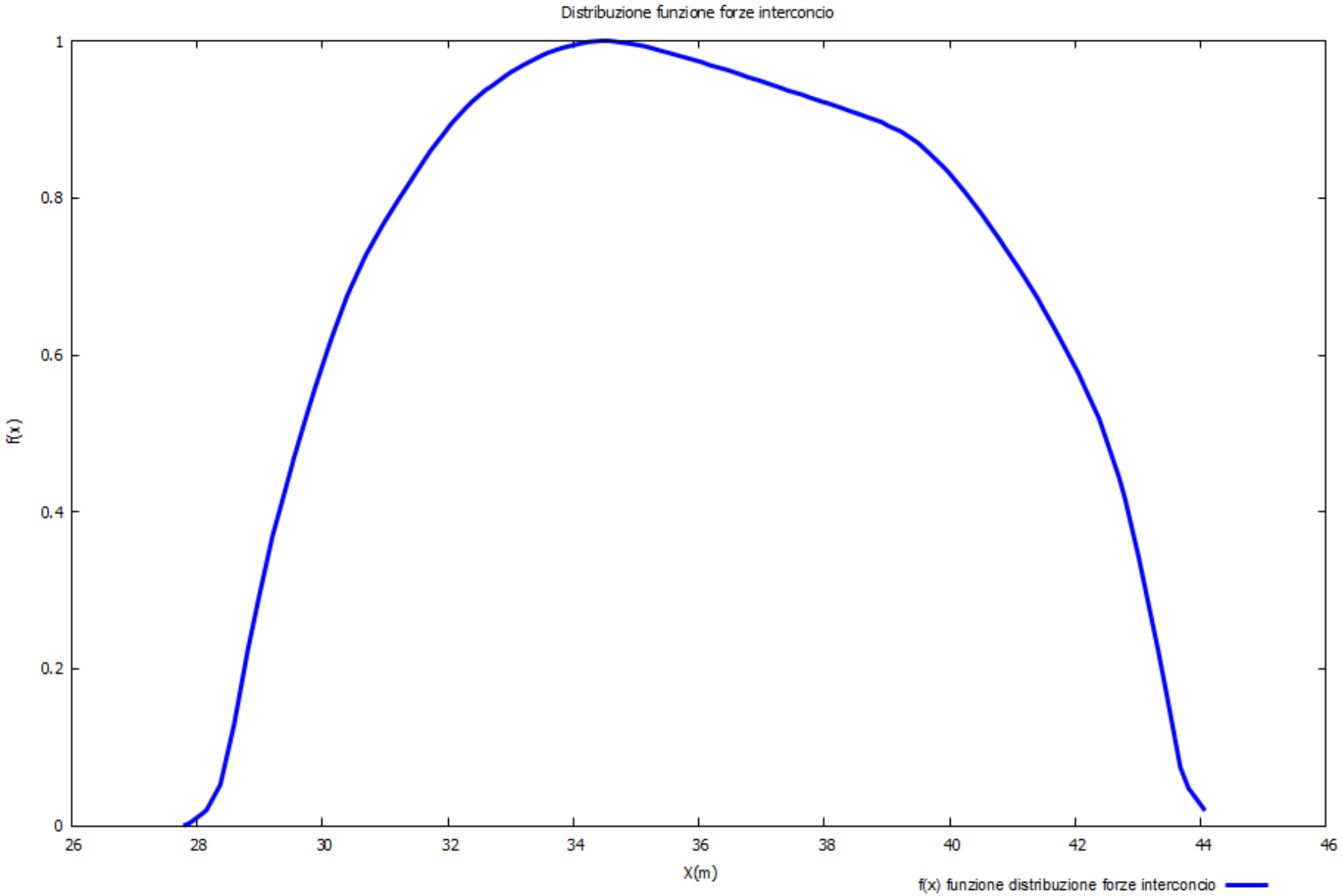


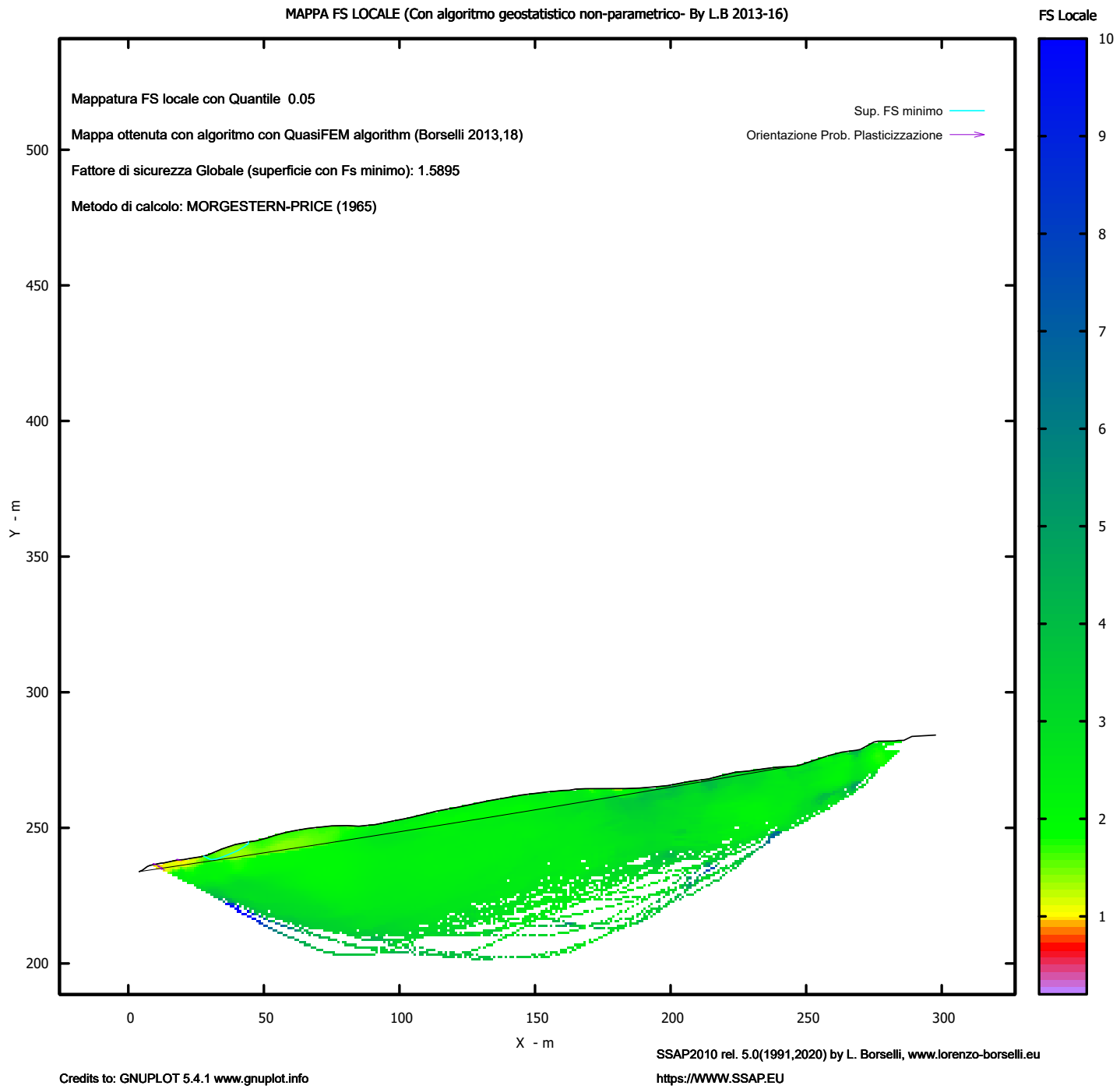


Metodo di calcolo: MORGESTERN-PRICE (1965)

SSAP2010 (versione 5.0 - 2020) - DISTRIBUZIONE FORZE e PRESSIONI

10/11/21 16:26




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): 1.5895
Metodo di calcolo: MORGESTERN-PRICE (1965)
Sup. FS minimo
Orientazione Prob. Plasticizzazione
Y - m
X - m
500
450
400
350
300
250
200
0
50
100
150
200
250
300
10
9
8
7
6
5
4
3
2
1
Credits to: GNUPLOT 5.4.1 www.gnuplot.info
SSAP2010 rel. 5.0(1991,2020) by L. Borselli, www.lorenzo-borselli.eu
https://WWW.SSAP.EU

Report elaborazioni

```
---------------------------------------------------------------------
    SSAP 5.0 - Slope Stability Analysis Program (1991,2020)
                          WWW.SSAP.EU
                        Build No. 11719
                             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: 12 settembre 2020
---------------------------------------------------------------------


    File report: C:\SSAP\CRACO\SERRACARUSOMOR\VERIFICA 1\DRENATA\BERSELLI\BERSELLI.txt
           Data: 10/11/2021
    Localita' :
    Descrizione:
 Modello pendio: verifica 1drenata.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
4.00	233.86	4.00	233.86	-	-	-	-
5.15	234.36	11.74	235.00	-	-	-	-
7.00	235.72	27.88	237.41	-	-	-	-
8.00	236.14	39.22	239.10	-	-	-	-
12.00	236.93	47.17	240.30	-	-	-	-
13.00	237.01	58.61	242.07	-	-	-	-
18.00	238.09	68.23	243.55	-	-	-	-
20.50	238.27	76.86	244.89	-	-	-	-
23.00	238.73	87.54	246.55	-	-	-	-
27.00	239.35	98.96	248.37	-	-	-	-
29.31	239.96	113.53	250.69	-	-	-	-
34.50	242.19	129.00	253.18	-	-	-	-
39.50	243.85	146.71	256.07	-	-	-	-
43.81	244.68	161.67	258.54	-	-	-	-
47.29	245.21	178.06	261.28	-	-	-	-
51.50	246.35	188.92	263.11	-	-	-	-
53.69	247.10	196.39	264.38	-	-	-	-
57.50	248.14	210.28	266.76	-	-	-	-
60.50	248.78	227.21	269.69	-	-	-	-
66.00	249.73	240.97	272.10	-	-	-	-
75.00	250.72	243.50	272.54	-	-	-	-
80.50	250.81	240.00	272.41	-	-	-	-
85.00	250.57	234.80	271.82	-	-	-	-
91.00	251.18	228.76	270.95	-	-	-	-
98.00	252.56	224.50	270.54	-	-	-	-
103.00	253.54	223.00	270.30	-	-	-	-
111.00	255.46	217.78	269.01	-	-	-	-
113.50	256.11	214.00	268.03	-	-	-	-
121.00	257.47	207.27	267.13	-	-	-	-
133.00	259.96	199.00	265.57	-	-	-	-
141.79	261.50	194.74	265.16	-	-	-	-
145.00	262.07	188.50	264.66	-	-	-	-
154.27	263.20	183.20	264.44	-	-	-	-
160.27	263.77	168.50	264.42	-	-	-	-
162.69	263.85	165.00	264.27	-	-	-	-
165.00	264.27	162.69	263.85	-	-	-	-
168.50	264.42	160.27	263.77	-	-	-	-
183.20	264.44	154.27	263.20	-	-	-	-
188.50	264.66	145.00	262.07	-	-	-	-
194.74	265.16	141.79	261.50	-	-	-	-
199.00	265.57	133.00	259.96	-	-	-	-
207.27	267.13	121.00	257.47	-	-	-	-
214.00	268.03	113.50	256.11	-	-	-	-
217.78	269.01	111.00	255.46	-	-	-	-
223.00	270.30	103.00	253.54	-	-	-	-
224.50	270.54	98.00	252.56	-	-	-	-
228.76	270.95	91.00	251.18	-	-	-	-
234.80	271.82	85.00	250.57	-	-	-	-
240.00	272.41	80.50	250.81	-	-	-	-

243.50	272.54	75.00	250.72	-	-	-	-
247.00	272.88	66.00	249.73	-	-	-	-
252.50	274.71	60.50	248.78	-	-	-	-
258.20	276.60	57.50	248.14	-	-	-	-
263.25	277.89	53.69	247.10	-	-	-	-
268.50	278.60	51.50	246.35	-	-	-	-
270.00	278.91	47.29	245.21	-	-	-	-
275.00	281.62	43.81	244.68	-	-	-	-
276.50	281.94	39.50	243.85	-	-	-	-
282.50	282.02	34.50	242.19	-	-	-	-
284.00	282.21	29.31	239.96	-	-	-	-
286.00	282.22	27.00	239.35	-	-	-	-
289.00	283.68	23.00	238.73	-	-	-	-
297.72	284.20	20.50	238.27	-	-	-	-
-	-	18.00	238.09	-	-	-	-
-	-	13.00	237.01	-	-	-	-
-	-	12.00	236.93	-	-	-	-
-	-	8.00	236.14	-	-	-	-
-	-	7.00	235.72	-	-	-	-
-	-	5.15	234.36	-	-	-	-
-	-	4.00	233.86	-	-	-	-

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
STRATO 2	22.00	5.00	0.00	18.00	20.00	1.322	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
METODO DI RICERCA: CONVEX RANDOM - Chen (1992)
FILTRAGGIO SUPERFICI : ATTIVATO
COORDINATE X1,X2,Y OSTACOLO : 0.00 0.00 0.00
LUNGHEZZA MEDIA SEGMENTI (m): 11.8 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 9.87 274.22
LIVELLO MINIMO CONSIDERATO (Ymin): 188.55
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 39.25 291.85

*** TOTALE SUPERFICI GENERATE : 10000

---------- INFORMAZIONI PARAMETRI DI CALCOLO ----------
METODO DI CALCOLO : BORSELLI (Borselli, 2016)
METODO DI ESPLORAZIONE CAMPO VALORI (lambda0,Fs0) ADOTTATO : A (rapido)
COEFFICIENTE SISMICO UTILIZZATO Kh : 0.0450
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0225
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) 1.5837 - Min. - X Y Lambda= 0.2928
27.35 239.44
28.34 238.93
28.81 238.70
29.11 238.57
29.36 238.49

29.61	238.43
29.83	238.40
30.07	238.38
30.34	238.38
30.67	238.39
30.96	238.41
31.23	238.43
31.49	238.46
31.75	238.50
32.00	238.55
32.26	238.60
32.53	238.66
32.83	238.74
33.10	238.81
33.36	238.89
33.62	238.97
33.88	239.06
34.14	239.15
34.40	239.24
34.66	239.35
34.94	239.47
35.22	239.58
35.49	239.69
35.76	239.81
36.02	239.92
36.29	240.03
36.56	240.15
36.84	240.27
37.12	240.39
37.38	240.51
37.64	240.64
37.89	240.77
38.15	240.91
38.41	241.06
38.67	241.22
38.95	241.40
39.25	241.60
39.52	241.79
39.78	241.99
40.03	242.19
40.29	242.41
40.57	242.66
40.89	242.97
41.36	243.43
41.55	243.63
41.55	244.25

Fattore di sicurezza (FS) 1.6019 - N.2 -- X Y Lambda= 0.2942

25.78	239.16
27.19	238.69
27.85	238.49
28.30	238.37
28.66	238.30
29.02	238.26
29.35	238.25
29.70	238.26
30.08	238.29
30.53	238.34
30.94	238.40
31.34	238.45
31.71	238.51
32.09	238.58
32.47	238.65
32.85	238.72
33.25	238.81
33.67	238.90
34.05	238.99
34.42	239.10
34.78	239.21
35.15	239.34
35.51	239.48
35.88	239.63
36.26	239.80
36.68	240.00
37.08	240.19
37.46	240.38
37.83	240.58
38.21	240.78

38.59	240.99
38.97	241.20
39.35	241.43
39.76	241.67
40.14	241.91
40.52	242.14
40.90	242.39
41.27	242.64
41.69	242.93
42.16	243.27
42.83	243.75
42.83	244.49

Fattore di sicurezza (FS) 1.6027 - N.3 -- X Y Lambda= 0.2889

25.70	239.15
26.83	238.75
27.37	238.56
27.75	238.45
28.06	238.37
28.37	238.31
28.65	238.27
28.95	238.24
29.28	238.22
29.65	238.21
29.98	238.21
30.29	238.23
30.58	238.25
30.88	238.28
31.17	238.33
31.47	238.38
31.78	238.45
32.13	238.54
32.46	238.63
32.78	238.71
33.09	238.80
33.40	238.89
33.71	238.98
34.03	239.07
34.35	239.17
34.68	239.28
35.00	239.38
35.30	239.49
35.61	239.60
35.92	239.72
36.22	239.84
36.54	239.97
36.86	240.12
37.21	240.28
37.52	240.43
37.83	240.59
38.13	240.75
38.43	240.93
38.73	241.11
39.03	241.31
39.35	241.53
39.69	241.77
40.01	242.00
40.33	242.23
40.64	242.47
40.95	242.70
41.30	242.97
41.69	243.28
42.13	243.63
42.13	244.36

Fattore di sicurezza (FS) 1.6030 - N.4 -- X Y Lambda= 0.2913

25.25	239.08
26.87	238.47
27.63	238.21
28.13	238.06
28.55	237.97
28.96	237.91
29.33	237.89
29.74	237.89
30.17	237.91
30.70	237.97
31.17	238.02

31.62	238.08
32.04	238.15
32.47	238.23
32.90	238.31
33.33	238.40
33.78	238.51
34.27	238.64
34.72	238.76
35.14	238.89
35.55	239.04
35.97	239.20
36.38	239.37
36.80	239.56
37.24	239.78
37.71	240.02
38.17	240.26
38.61	240.50
39.05	240.73
39.48	240.97
39.92	241.21
40.35	241.45
40.79	241.70
41.24	241.96
41.68	242.21
42.12	242.47
42.55	242.73
42.99	242.99
43.47	243.29
44.02	243.63
44.75	244.09
44.75	244.82

Fattore di sicurezza (FS) 1.6056 - N.5 -- X Y Lambda= 0.2948

25.50	239.12
27.07	238.60
27.80	238.37
28.29	238.24
28.70	238.17
29.10	238.12
29.46	238.11
29.86	238.11
30.29	238.15
30.81	238.21
31.26	238.27
31.68	238.34
32.09	238.42
32.50	238.52
32.90	238.62
33.31	238.75
33.74	238.88
34.21	239.05
34.65	239.21
35.07	239.37
35.48	239.54
35.90	239.72
36.30	239.90
36.72	240.10
37.14	240.30
37.58	240.53
38.01	240.75
38.44	240.97
38.87	241.19
39.30	241.40
39.72	241.62
40.15	241.84
40.58	242.06
41.01	242.27
41.43	242.49
41.85	242.72
42.27	242.94
42.69	243.17
43.16	243.43
43.69	243.73
44.29	244.08
44.29	244.75

Fattore di sicurezza (FS) 1.6057 - N.6 -- X Y Lambda= 0.2883

26.85	239.33
28.53	238.83
29.31	238.61
29.83	238.50
30.26	238.44
30.68	238.41
31.07	238.41
31.48	238.44
31.93	238.50
32.48	238.59
32.96	238.68
33.42	238.78
33.86	238.88
34.31	238.99
34.74	239.11
35.19	239.24
35.66	239.38
36.16	239.55
36.62	239.71
37.06	239.88
37.48	240.06
37.92	240.26
38.35	240.46
38.79	240.69
39.25	240.94
39.75	241.22
40.21	241.50
40.66	241.78
41.10	242.06
41.55	242.35
42.03	242.69
42.59	243.09
43.38	243.68
43.81	244.00
43.81	244.68

Fattore di sicurezza (FS) 1.6079 - N.7 -- X Y Lambda= 0.2971

26.91	239.34
28.32	238.79
28.97	238.55
29.40	238.43
29.75	238.35
30.10	238.31
30.41	238.29
30.76	238.30
31.14	238.34
31.62	238.41
32.03	238.48
32.40	238.56
32.76	238.65
33.12	238.75
33.47	238.87
33.83	239.00
34.22	239.15
34.65	239.34
35.04	239.52
35.41	239.70
35.77	239.88
36.14	240.08
36.50	240.29
36.87	240.51
37.25	240.75
37.66	241.01
38.05	241.27
38.42	241.53
38.79	241.79
39.16	242.06
39.57	242.37
40.03	242.74
40.69	243.27
40.89	243.43
40.89	244.12

Fattore di sicurezza (FS) 1.6109 - N.8 -- X Y Lambda= 0.2908

26.46	239.27
27.77	238.95
28.40	238.81

28.83	238.73
29.19	238.68
29.54	238.65
29.87	238.64
30.22	238.65
30.59	238.67
31.02	238.70
31.40	238.75
31.75	238.80
32.09	238.86
32.45	238.93
32.78	239.01
33.13	239.10
33.49	239.21
33.89	239.35
34.27	239.47
34.63	239.60
35.00	239.73
35.36	239.86
35.72	239.99
36.08	240.13
36.46	240.27
36.84	240.43
37.21	240.58
37.56	240.73
37.90	240.90
38.26	241.07
38.60	241.26
38.96	241.45
39.32	241.66
39.71	241.90
40.08	242.12
40.45	242.35
40.81	242.58
41.17	242.82
41.57	243.08
42.02	243.39
42.45	243.69
42.45	244.42

Fattore di sicurezza (FS) 1.6168 - N.9 -- X Y Lambda= 0.2885

25.38	239.10
27.15	238.70
28.01	238.52
28.59	238.42
29.09	238.35
29.57	238.32
30.02	238.30
30.50	238.30
31.01	238.32
31.60	238.37
32.11	238.42
32.59	238.48
33.04	238.57
33.52	238.67
33.97	238.79
34.44	238.93
34.94	239.10
35.50	239.31
36.02	239.50
36.51	239.71
36.99	239.91
37.47	240.13
37.95	240.35
38.44	240.59
38.94	240.85
39.47	241.14
39.98	241.41
40.46	241.69
40.94	241.98
41.42	242.28
41.96	242.63
42.56	243.04
43.42	243.65
44.04	244.10
44.04	244.72

Fattore di sicurezza (FS) 1.6172 - N.10 -- X Y Lambda= 0.2940

X	Y
27.41	239.46
28.85	239.13
29.53	238.99
29.99	238.91
30.37	238.88
30.75	238.87
31.09	238.88
31.46	238.92
31.85	238.97
32.32	239.06
32.74	239.14
33.14	239.23
33.52	239.32
33.91	239.42
34.29	239.53
34.68	239.65
35.08	239.78
35.52	239.93
35.92	240.07
36.30	240.22
36.67	240.38
37.06	240.56
37.43	240.74
37.81	240.94
38.21	241.16
38.64	241.42
39.05	241.66
39.44	241.90
39.82	242.15
40.21	242.41
40.64	242.70
41.13	243.05
41.81	243.55
42.02	243.70
42.02	244.33

---------- 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	1.584	303.0	191.3	92.5	Surplus
2	1.602	352.7	220.2	110.5	Surplus
3	1.603	341.4	213.0	107.1	Surplus
4	1.603	442.3	275.9	138.8	Surplus
5	1.606	382.1	238.0	120.3	Surplus
6	1.606	370.5	230.8	116.7	Surplus
7	1.608	290.2	180.5	91.7	Surplus
8	1.611	301.9	187.4	95.8	Surplus
9	1.617	394.1	243.8	126.0	Surplus
10	1.617	273.4	169.0	87.4	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 87.4

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

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

TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (°)	W (kN/m)	ru (-)	U (kPa)	phi' (°)	(c',Cu) (kPa)
27.345	0.197	-27.28	0.28	0.00	0.00	22.00	5.00
27.542	0.197	-27.28	0.83	0.00	0.00	22.00	5.00
27.739	0.141	-27.28	0.94	0.00	0.00	22.00	5.00
27.880	0.197	-27.28	1.79	0.00	0.00	22.00	5.00
28.077	0.078	-27.28	0.86	0.00	0.00	22.00	5.00
28.155	0.188	-27.28	2.44	0.00	0.00	22.00	5.00
28.343	0.197	-25.97	3.09	0.00	0.00	22.00	5.00

28.540	0.197	-25.97	3.62	0.00	0.00	22.00	5.00
28.737	0.069	-25.97	1.39	0.00	0.00	22.00	5.00
28.806	0.197	-22.89	4.32	0.00	0.00	22.00	5.00
29.003	0.107	-22.89	2.57	0.00	0.00	22.00	5.00
29.110	0.197	-18.74	5.05	0.00	0.00	22.00	5.00
29.307	0.003	-18.74	0.08	0.00	0.00	22.00	5.00
29.310	0.047	-18.74	1.28	0.00	0.00	22.00	5.00
29.357	0.197	-13.30	5.64	0.00	0.00	22.00	5.00
29.554	0.053	-13.30	1.59	0.00	0.00	22.00	5.00
29.607	0.197	-8.82	6.22	0.00	0.00	22.00	5.00
29.804	0.023	-8.82	0.76	0.00	0.00	22.00	5.00
29.827	0.197	-4.17	6.65	0.00	0.00	22.00	5.00
30.024	0.047	-4.17	1.64	0.00	0.00	22.00	5.00
30.071	0.197	-0.31	7.07	0.00	0.00	22.00	5.00
30.268	0.070	-0.31	2.58	0.00	0.00	22.00	5.00
30.338	0.197	2.45	7.48	0.00	0.00	22.00	5.00
30.535	0.137	2.45	5.36	0.00	0.00	22.00	5.00
30.672	0.197	3.66	7.94	0.00	0.00	22.00	5.00
30.868	0.093	3.66	3.84	0.00	0.00	22.00	5.00
30.962	0.197	5.14	8.31	0.00	0.00	22.00	5.00
31.159	0.072	5.14	3.12	0.00	0.00	22.00	5.00
31.231	0.197	6.75	8.64	0.00	0.00	22.00	5.00
31.428	0.058	6.75	2.60	0.00	0.00	22.00	5.00
31.486	0.197	8.41	8.91	0.00	0.00	22.00	5.00
31.683	0.064	8.41	2.92	0.00	0.00	22.00	5.00
31.747	0.158	9.98	7.36	0.00	0.00	22.00	5.00
31.905	0.093	9.98	4.36	0.00	0.00	22.00	5.00
31.998	0.197	11.54	9.39	0.00	0.00	22.00	5.00
32.195	0.063	11.54	3.05	0.00	0.00	22.00	5.00
32.258	0.197	12.96	9.59	0.00	0.00	22.00	5.00
32.455	0.073	12.96	3.61	0.00	0.00	22.00	5.00
32.528	0.197	14.20	9.78	0.00	0.00	22.00	5.00
32.725	0.100	14.20	5.02	0.00	0.00	22.00	5.00
32.825	0.197	15.16	9.96	0.00	0.00	22.00	5.00
33.022	0.077	15.16	3.94	0.00	0.00	22.00	5.00
33.099	0.197	16.23	10.11	0.00	0.00	22.00	5.00
33.296	0.068	16.23	3.50	0.00	0.00	22.00	5.00
33.364	0.197	17.35	10.24	0.00	0.00	22.00	5.00
33.561	0.060	17.35	3.14	0.00	0.00	22.00	5.00
33.621	0.197	18.46	10.34	0.00	0.00	22.00	5.00
33.818	0.065	18.46	3.45	0.00	0.00	22.00	5.00
33.883	0.197	19.54	10.43	0.00	0.00	22.00	5.00
34.080	0.058	19.54	3.09	0.00	0.00	22.00	5.00
34.138	0.197	20.61	10.49	0.00	0.00	22.00	5.00
34.335	0.063	20.61	3.37	0.00	0.00	22.00	5.00
34.398	0.102	21.61	5.43	0.00	0.00	22.00	5.00
34.500	0.163	21.61	8.70	0.00	0.00	22.00	5.00
34.663	0.197	22.53	10.46	0.00	0.00	22.00	5.00
34.860	0.082	22.53	4.36	0.00	0.00	22.00	5.00
34.942	0.197	22.64	10.38	0.00	0.00	22.00	5.00
35.139	0.077	22.64	4.06	0.00	0.00	22.00	5.00
35.217	0.197	22.75	10.29	0.00	0.00	22.00	5.00
35.414	0.073	22.75	3.80	0.00	0.00	22.00	5.00
35.487	0.197	22.86	10.21	0.00	0.00	22.00	5.00
35.684	0.071	22.86	3.69	0.00	0.00	22.00	5.00
35.755	0.197	22.97	10.12	0.00	0.00	22.00	5.00
35.952	0.069	22.97	3.53	0.00	0.00	22.00	5.00
36.021	0.197	23.09	10.03	0.00	0.00	22.00	5.00
36.218	0.072	23.09	3.65	0.00	0.00	22.00	5.00
36.290	0.197	23.20	9.94	0.00	0.00	22.00	5.00
36.487	0.074	23.20	3.71	0.00	0.00	22.00	5.00
36.561	0.197	23.31	9.84	0.00	0.00	22.00	5.00
36.758	0.079	23.31	3.95	0.00	0.00	22.00	5.00
36.837	0.163	23.42	8.07	0.00	0.00	22.00	5.00
37.000	0.120	23.42	5.92	0.00	0.00	22.00	5.00
37.120	0.197	24.69	9.63	0.00	0.00	22.00	5.00
37.317	0.066	24.69	3.23	0.00	0.00	22.00	5.00
37.384	0.197	26.07	9.50	0.00	0.00	22.00	5.00
37.581	0.061	26.07	2.91	0.00	0.00	22.00	5.00
37.641	0.197	27.51	9.34	0.00	0.00	22.00	5.00
37.838	0.054	27.51	2.55	0.00	0.00	22.00	5.00
37.893	0.197	28.89	9.15	0.00	0.00	22.00	5.00
38.090	0.064	28.89	2.95	0.00	0.00	22.00	5.00
38.154	0.197	30.27	8.93	0.00	0.00	22.00	5.00
38.351	0.057	30.27	2.56	0.00	0.00	22.00	5.00
38.408	0.197	31.60	8.69	0.00	0.00	22.00	5.00
38.605	0.066	31.60	2.87	0.00	0.00	22.00	5.00
38.671	0.197	32.81	8.41	0.00	0.00	22.00	5.00
38.868	0.077	32.81	3.24	0.00	0.00	22.00	5.00

38.945	0.197	33.84	8.09	0.00	0.00	22.00	5.00
39.142	0.078	33.84	3.13	0.00	0.00	22.00	5.00
39.220	0.026	33.84	1.03	0.00	0.00	22.00	5.00
39.246	0.197	35.29	7.71	0.00	0.00	22.00	5.00
39.443	0.057	35.29	2.19	0.00	0.00	22.00	5.00
39.500	0.017	35.29	0.64	0.00	0.00	22.00	5.00
39.517	0.197	36.91	7.27	0.00	0.00	22.00	5.00
39.714	0.064	36.91	2.26	0.00	0.00	22.00	5.00
39.777	0.197	38.58	6.72	0.00	0.00	22.00	5.00
39.974	0.054	38.58	1.76	0.00	0.00	22.00	5.00
40.028	0.197	40.17	6.16	0.00	0.00	22.00	5.00
40.225	0.064	40.17	1.90	0.00	0.00	22.00	5.00
40.289	0.197	42.12	5.52	0.00	0.00	22.00	5.00
40.486	0.084	42.12	2.20	0.00	0.00	22.00	5.00
40.570	0.197	43.61	4.78	0.00	0.00	22.00	5.00
40.767	0.126	43.61	2.76	0.00	0.00	22.00	5.00
40.893	0.197	44.88	3.87	0.00	0.00	22.00	5.00
41.090	0.197	44.88	3.30	0.00	0.00	22.00	5.00
41.287	0.071	44.88	1.06	0.00	0.00	22.00	5.00
41.358	0.197	45.51	2.51	0.00	0.00	22.00	5.00

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 (--)
27.345	0.000	239.441	-0.330	0.0000000000E+000	0.0000000000E+000	0.0000000000E+000	0.053	50.000	38.253
27.542	0.039	239.378	-0.330	2.0082542518E-001	4.4940651258E-004	2.2112951130E+000	0.053	50.000	38.253
27.739	0.073	239.311	-0.331	8.7094649237E-001	1.6669974178E-002	5.0864970986E+000	0.053	21.971	10.420
27.880	0.101	239.266	-0.272	1.7579809527E+000	7.4995464037E-002	7.0547473540E+000	0.053	13.563	6.081
28.077	0.155	239.219	-0.247	3.3571474527E+000	2.6544084270E-001	1.3025021004E+001	0.100	11.287	4.210
28.155	0.175	239.198	-0.247	4.5257833530E+000	4.4727836411E-001	1.5216093414E+001	0.142	11.555	3.712
28.343	0.227	239.153	-0.245	7.4990957938E+000	9.6764641802E-001	1.8134729483E+001	0.221	12.523	3.063
28.540	0.273	239.104	-0.233	1.1549694803E+001	1.7571140722E+000	2.1483616013E+001	0.299	12.096	2.669
28.737	0.327	239.062	-0.206	1.5960689138E+001	2.6989375678E+000	2.2674179490E+001	0.362	10.799	2.447
28.806	0.348	239.049	-0.152	1.7526011102E+001	3.0564694156E+000	2.2678767187E+001	0.381	10.067	2.398
29.003	0.403	239.021	-0.125	2.1940497055E+001	4.1430386840E+000	2.0401487037E+001	0.433	7.726	2.308
29.110	0.439	239.011	-0.067	2.4013996181E+001	4.6891959194E+000	1.9175594400E+001	0.454	6.608	2.284
29.307	0.495	239.001	-0.053	2.7744487660E+001	5.7716622903E+000	1.5563670913E+001	0.495	4.931	2.257
29.310	0.496	239.001	-0.020	2.7791798026E+001	5.7860616176E+000	1.5538060330E+001	0.495	4.912	2.257
29.357	0.511	239.000	0.004	2.8544615448E+001	6.0201323702E+000	1.6304295003E+001	0.502	4.620	2.253
29.554	0.559	239.002	0.013	3.2045229139E+001	7.2007908321E+000	1.6827793012E+001	0.542	3.569	2.236
29.607	0.573	239.003	0.055	3.2917083162E+001	7.5073189283E+000	1.6512355310E+001	0.551	3.365	2.231
29.804	0.616	239.016	0.066	3.6123013746E+001	8.7443061753E+000	1.5236713900E+001	0.590	2.781	2.208
29.827	0.622	239.018	0.107	3.6473850116E+001	8.8899728109E+000	1.5128720643E+001	0.595	2.726	2.205

30.024	0.658	239.039	0.116	3.9478088999E+001	1.0196620093E+001	1.4722908675E+001	0.636	2.359	2.170
30.071	0.668	239.046	0.169	4.0164872415E+001	1.0523920729E+001	1.4728036882E+001	0.647	2.294	2.160
30.268	0.703	239.080	0.178	4.3174347894E+001	1.2015994821E+001	1.3126209975E+001	0.694	2.064	2.105
30.338	0.717	239.094	0.215	4.4038051012E+001	1.2489584809E+001	1.2545663928E+001	0.709	2.017	2.085
30.535	0.753	239.138	0.237	4.6610966529E+001	1.3938654603E+001	1.2693655170E+001	0.752	1.899	2.019
30.672	0.782	239.173	0.259	4.8314090493E+001	1.4939541821E+001	1.1976359827E+001	0.781	1.839	1.971
30.868	0.821	239.224	0.267	5.0542634006E+001	1.6262395823E+001	1.1054088497E+001	0.816	1.776	1.911
30.962	0.841	239.250	0.271	5.1560413072E+001	1.6866336603E+001	1.0355520575E+001	0.831	1.751	1.883
31.159	0.876	239.303	0.265	5.3360443602E+001	1.7924828191E+001	8.4329903869E+000	0.855	1.710	1.836
31.231	0.888	239.321	0.259	5.3952107875E+001	1.8270015085E+001	7.8759555005E+000	0.862	1.698	1.822
31.428	0.916	239.372	0.258	5.5344029615E+001	1.9077819706E+001	6.5080472842E+000	0.878	1.669	1.787
31.486	0.923	239.387	0.267	5.5713271687E+001	1.9292783887E+001	6.2174400552E+000	0.881	1.661	1.778
31.683	0.948	239.440	0.272	5.6854372836E+001	1.9971241696E+001	5.4759351376E+000	0.893	1.636	1.749
31.747	0.956	239.458	0.281	5.7196432897E+001	2.0179146092E+001	5.2020016736E+000	0.897	1.627	1.740
31.905	0.973	239.503	0.289	5.7952767872E+001	2.0655623288E+001	4.3774948717E+000	0.905	1.609	1.718
31.998	0.984	239.531	0.306	5.8336958710E+001	2.0915038704E+001	3.9952462367E+000	0.910	1.597	1.705
32.195	1.005	239.591	0.313	5.9061653881E+001	2.1433231435E+001	3.1718600093E+000	0.919	1.574	1.677
32.258	1.013	239.612	0.331	5.9251864711E+001	2.1585810840E+001	2.9048407980E+000	0.922	1.566	1.668
32.455	1.033	239.678	0.339	5.9760171707E+001	2.2026401653E+001	2.1052902707E+000	0.931	1.543	1.638
32.528	1.042	239.704	0.359	5.9901522831E+001	2.2173564473E+001	1.8036905949E+000	0.934	1.534	1.626
32.725	1.063	239.774	0.367	6.0190883323E+001	2.2524512057E+001	1.0654304593E+000	0.941	1.511	1.596
32.825	1.076	239.813	0.367	6.0276946600E+001	2.2676757850E+001	6.2693401923E-001	0.945	1.498	1.579
33.022	1.093	239.883	0.366	6.0309975831E+001	2.2889144032E+001	-1.1747145812E-001	0.949	1.477	1.550
33.099	1.102	239.913	0.371	6.0292258044E+001	2.2959708211E+001	-4.0275793526E-001	0.951	1.468	1.539
33.296	1.117	239.985	0.369	6.0125888266E+001	2.3062214740E+001	-1.1338538748E+000	0.953	1.447	1.513
33.364	1.123	240.011	0.368	6.0042474118E+001	2.3084675109E+001	-1.3810330243E+000	0.954	1.440	1.504
33.561	1.133	240.083	0.371	5.9685712945E+001	2.3079393590E+001	-2.3538711045E+000	0.954	1.421	1.481
33.621	1.138	240.106	0.376	5.9534222847E+001	2.3061074213E+001	-2.5792550612E+000	0.954	1.414	1.474
33.818	1.145	240.179	0.372	5.8987707313E+001	2.2958873044E+001	-2.9280897329E+000	0.953	1.396	1.455
33.883	1.148	240.204	0.378	5.8792861255E+001	2.2914467555E+001	-3.1157184678E+000	0.953	1.390	1.449
34.080	1.152	240.278	0.376	5.8098148069E+001	2.2725806963E+001	-3.8016007916E+000	0.950	1.374	1.434
34.138	1.153	240.299	0.370	5.7872445340E+001	2.2656721553E+001	-3.9853072027E+000	0.949	1.370	1.430
34.335	1.152	240.373	0.372	5.7019001641E+001	2.2373940046E+001	-4.6635271570E+000	0.944	1.357	1.417
34.398	1.152	240.396	0.371	5.6718268292E+001	2.2265211782E+001	-4.8203234521E+000	0.942	1.353	1.413
34.500	1.149	240.434	0.381	5.6219648464E+001	2.2081835215E+001	-5.1824273456E+000	0.939	1.347	1.408
34.663	1.148	240.497	0.390	5.5301423856E+001	2.1715203927E+001	-5.8221252037E+000	0.934	1.340	1.400
34.860	1.143	240.574	0.397	5.4109337138E+001	2.1218975134E+001	-6.3544596397E+000	0.927	1.333	1.391
34.942	1.143	240.608	0.396	5.3575280938E+001	2.0988218093E+001	-6.4689109734E+000	0.923	1.332	1.387
35.139	1.138	240.685	0.396	5.2306794631E+001	2.0428504146E+001	-6.6583121831E+000	0.914	1.329	1.380
35.217	1.137	240.716	0.390	5.1784828261E+001	2.0194574380E+001	-6.6708711791E+000	0.910		

1.329 1.378
35.414 1.130 240.792 0.375 5.0507576023E+001 1.9617761177E+001 -6.0337941932E+000 0.899
1.330 1.373
35.487 1.125 240.817 0.355 5.0079610983E+001 1.9423860327E+001 -5.9234311799E+000 0.895
1.331 1.372
35.684 1.112 240.888 0.366 4.8882762326E+001 1.8882993840E+001 -6.4122746204E+000 0.885
1.333 1.369
35.755 1.110 240.916 0.369 4.8415851239E+001 1.8672180055E+001 -6.4290076142E+000 0.881
1.334 1.367
35.952 1.098 240.987 0.369 4.7206626364E+001 1.8128565015E+001 -6.4082058125E+000 0.870
1.338 1.365
36.021 1.095 241.014 0.374 4.6757957443E+001 1.7926976357E+001 -6.4340348612E+000 0.866
1.339 1.364
36.218 1.084 241.087 0.374 4.5529129473E+001 1.7374767707E+001 -6.4242997071E+000 0.855
1.342 1.361
36.290 1.081 241.114 0.370 4.5062180330E+001 1.7163831415E+001 -6.3961010041E+000 0.851
1.343 1.360
36.487 1.068 241.186 0.372 4.3854109113E+001 1.6615497125E+001 -6.4960054030E+000 0.839
1.346 1.356
36.561 1.066 241.215 0.381 4.3364118991E+001 1.6390752630E+001 -6.5639397240E+000 0.833
1.346 1.355
36.758 1.055 241.289 0.383 4.2107011722E+001 1.5811050346E+001 -6.7185174908E+000 0.820
1.346 1.350
36.837 1.053 241.321 0.390 4.1562340147E+001 1.5558443030E+001 -6.7998164269E+000 0.814
1.344 1.348
37.000 1.045 241.384 0.396 4.0472275082E+001 1.5052174232E+001 -7.0362242368E+000 0.801
1.340 1.343
37.120 1.042 241.433 0.406 3.9595195388E+001 1.4646210659E+001 -7.3264323665E+000 0.791
1.335 1.339
37.317 1.031 241.513 0.403 3.8141383166E+001 1.3982522110E+001 -7.5549378053E+000 0.774
1.325 1.334
37.384 1.027 241.540 0.407 3.7635625955E+001 1.3754016931E+001 -7.6904705306E+000 0.767
1.321 1.332
37.581 1.011 241.620 0.407 3.6076001175E+001 1.3062971516E+001 -8.0106104245E+000 0.750
1.309 1.327
37.641 1.006 241.644 0.415 3.5586980930E+001 1.2848536536E+001 -8.1609767861E+000 0.744
1.305 1.326
37.838 0.986 241.727 0.417 3.3901883765E+001 1.2119106440E+001 -8.5369484659E+000 0.725
1.292 1.321
37.893 0.980 241.749 0.419 3.3438730197E+001 1.1919939496E+001 -8.6242743119E+000 0.719
1.289 1.320
38.090 0.954 241.832 0.422 3.1674052036E+001 1.1164612103E+001 -9.0456316658E+000 0.698
1.277 1.315
38.154 0.946 241.859 0.449 3.1090791803E+001 1.0914660358E+001 -9.2836950439E+000 0.691
1.273 1.313
38.351 0.921 241.949 0.468 2.9135608223E+001 1.0078353341E+001 -1.0775578262E+001 0.666
1.262 1.308
38.408 0.917 241.978 0.502 2.8505110777E+001 9.8099632832E+000 -1.1011199315E+001 0.657
1.258 1.306
38.605 0.894 242.077 0.517 2.6343787627E+001 8.8952027702E+000 -1.1969934016E+001 0.626
1.249 1.300
38.671 0.891 242.114 0.533 2.5531225236E+001 8.5602604966E+000 -1.2083721051E+001 0.614
1.246 1.299
38.868 0.867 242.217 0.520 2.3280675239E+001 7.6442993276E+000 -1.1308569062E+001 0.581
1.240 1.296
38.945 0.857 242.257 0.486 2.2410278536E+001 7.3013248506E+000 -1.1007514447E+001 0.567
1.239 1.297
39.142 0.818 242.350 0.471 2.0370079266E+001 6.5170536220E+000 -1.0157489394E+001 0.537
1.238 1.301
39.220 0.802 242.386 0.460 1.9585024471E+001 6.2241381149E+000 -9.9922659136E+000 0.525
1.239 1.304
39.246 0.796 242.398 0.442 1.9327837854E+001 6.1287970758E+000 -9.9185766170E+000 0.521
1.239 1.305
39.443 0.744 242.485 0.442 1.7442897428E+001 5.4493211043E+000 -9.6803605615E+000 0.493
1.245 1.317
39.500 0.729 242.510 0.448 1.6886815323E+001 5.2504017130E+000 -9.7213266263E+000 0.484
1.247 1.322
39.517 0.724 242.518 0.446 1.6723657526E+001 5.1919952709E+000 -9.7109276333E+000 0.482
1.248 1.324
39.714 0.664 242.606 0.457 1.4841629519E+001 4.5257527722E+000 -1.0214004302E+001 0.455
1.260 1.344
39.777 0.648 242.637 0.485 1.4177979868E+001 4.2898129016E+000 -1.0312361863E+001 0.444
1.266 1.353
39.974 0.586 242.732 0.502 1.2216653590E+001 3.5902337640E+000 -1.1059960623E+001 0.409
1.285 1.382
40.028 0.574 242.763 0.551 1.1604167094E+001 3.3717546936E+000 -1.1156366080E+001 0.396
1.292 1.391
40.225 0.515 242.870 0.543 9.5545034093E+000 2.6393380126E+000 -9.8298080860E+000 0.347
1.318 1.427

40.289	0.495	242.905	0.580	8.9373230281E+000	2.4209955143E+000	-9.6689781348E+000	0.331
1.327	1.439						
40.486	0.434	243.022	0.596	7.0167736581E+000	1.7622224815E+000	-8.9317736999E+000	0.276
1.359	1.477						
40.570	0.408	243.072	0.630	6.2963350146E+000	1.5288792989E+000	-8.7459232152E+000	0.255
1.375	1.496						
40.767	0.347	243.198	0.661	4.4982438556E+000	9.4673411829E-001	-8.7980904668E+000	0.187
1.413	1.537						
40.893	0.314	243.285	0.719	3.4189425974E+000	6.2856359230E-001	-8.1044697644E+000	0.140
1.437	1.560						
41.090	0.263	243.430	0.734	1.9714370070E+000	2.8020768443E-001	-6.3970852919E+000	0.077
1.481	1.599						
41.287	0.211	243.574	0.663	8.9936980790E-001	1.0715122639E-001	-3.5735208816E+000	0.053
1.567	1.680						
41.358	0.174	243.608	0.663	6.9244745920E-001	8.3801174216E-002	-3.0601345766E+000	0.053
1.613	1.734						

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)
27.345	0.197	0.222	-27.280	-0.525	-0.116	5.464	1.211
27.542	0.197	0.222	-27.280	-1.576	-0.349	6.464	1.432
27.739	0.141	0.159	-27.280	-2.478	-0.393	7.575	1.202
27.880	0.197	0.222	-27.280	-3.379	-0.749	8.901	1.972
28.077	0.078	0.088	-27.280	-4.113	-0.361	10.858	0.954
28.155	0.188	0.212	-27.280	-4.823	-1.021	11.904	2.519
28.343	0.197	0.219	-25.968	-5.603	-1.227	14.042	3.076
28.540	0.197	0.219	-25.968	-6.576	-1.440	15.685	3.436
28.737	0.069	0.076	-25.968	-7.232	-0.553	16.696	1.277
28.806	0.197	0.214	-22.892	-7.031	-1.503	17.696	3.783
29.003	0.107	0.117	-22.892	-7.646	-0.892	17.974	2.096
29.110	0.197	0.208	-18.739	-6.769	-1.408	19.077	3.967
29.307	0.003	0.003	-18.739	-7.062	-0.023	18.831	0.061
29.310	0.047	0.050	-18.739	-7.155	-0.357	19.161	0.955
29.357	0.197	0.202	-13.304	-5.196	-1.051	20.502	4.149
29.554	0.053	0.054	-13.304	-5.473	-0.296	20.970	1.133
29.607	0.197	0.199	-8.823	-3.398	-0.677	21.527	4.290
29.804	0.023	0.023	-8.823	-3.525	-0.083	21.994	0.517
29.827	0.197	0.197	-4.171	-0.938	-0.185	22.053	4.354
30.024	0.047	0.047	-4.171	-0.970	-0.046	22.674	1.070
30.071	0.197	0.197	-0.314	1.419	0.280	22.644	4.459
30.268	0.070	0.070	-0.314	1.462	0.102	22.747	1.589
30.338	0.197	0.197	2.449	3.327	0.656	22.755	4.485
30.535	0.137	0.137	2.449	3.431	0.470	23.216	3.183
30.672	0.197	0.197	3.659	4.374	0.863	23.200	4.578
30.868	0.093	0.093	3.659	4.480	0.418	23.522	2.195
30.962	0.197	0.198	5.138	5.650	1.117	23.247	4.597
31.159	0.072	0.073	5.138	5.763	0.419	23.426	1.703
31.231	0.197	0.198	6.752	7.066	1.401	23.255	4.612
31.428	0.058	0.059	6.752	7.184	0.421	23.457	1.375
31.486	0.197	0.199	8.412	8.543	1.701	23.348	4.648
31.683	0.064	0.064	8.412	8.670	0.558	23.584	1.518
31.747	0.158	0.161	9.983	9.962	1.602	23.432	3.767
31.905	0.093	0.094	9.983	10.088	0.950	23.634	2.225
31.998	0.197	0.201	11.538	11.404	2.292	23.527	4.729
32.195	0.063	0.065	11.538	11.533	0.744	23.718	1.530
32.258	0.197	0.202	12.965	12.732	2.573	23.581	4.765
32.455	0.073	0.075	12.965	12.862	0.968	23.761	1.787
32.528	0.197	0.203	14.197	13.909	2.825	23.650	4.804
32.725	0.100	0.103	14.197	14.044	1.449	23.830	2.459
32.825	0.197	0.204	15.160	14.892	3.039	23.787	4.853
33.022	0.077	0.080	15.160	15.010	1.201	23.940	1.916

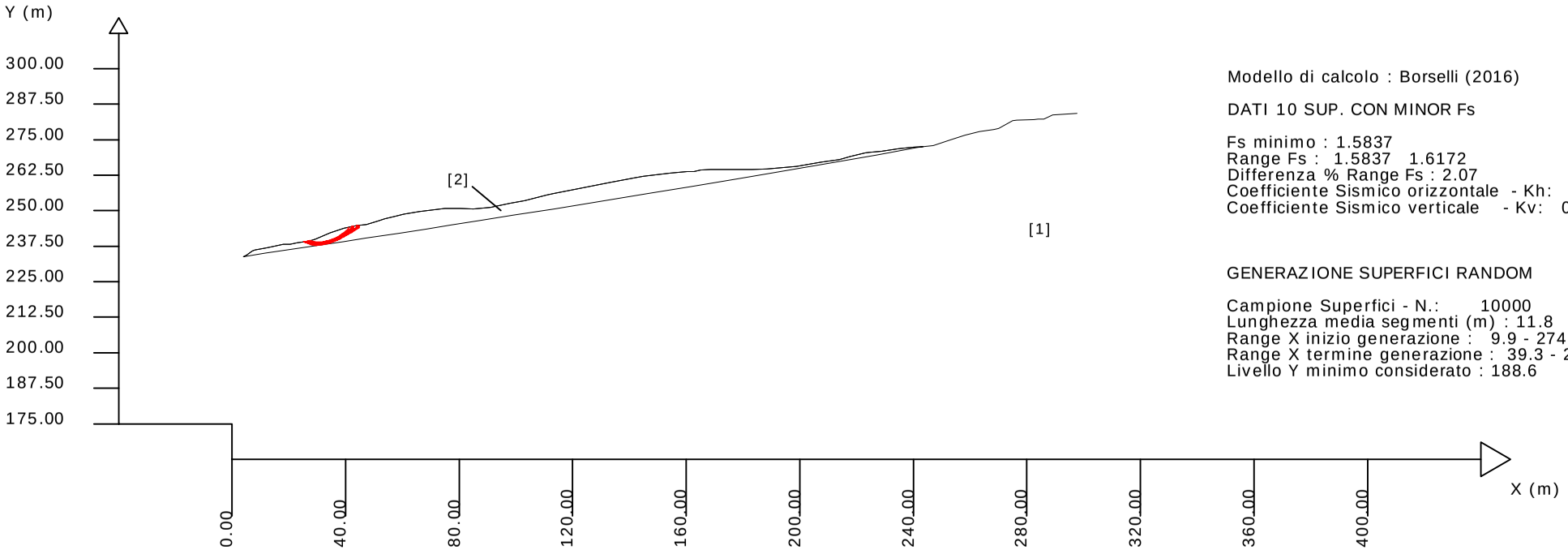
33.099	0.197	0.205	16.229	15.913	3.264	23.853	4.892
33.296	0.068	0.070	16.229	16.018	1.128	23.987	1.690
33.364	0.197	0.206	17.349	16.932	3.493	23.874	4.926
33.561	0.060	0.063	17.349	17.022	1.072	23.997	1.512
33.621	0.197	0.208	18.465	17.902	3.717	23.860	4.954
33.818	0.065	0.069	18.465	17.981	1.240	23.961	1.652
33.883	0.197	0.209	19.540	18.802	3.929	23.827	4.979
34.080	0.058	0.062	19.540	18.864	1.164	23.921	1.476
34.138	0.197	0.210	20.609	19.643	4.133	23.771	5.001
34.335	0.063	0.067	20.609	19.691	1.327	23.864	1.608
34.398	0.102	0.109	21.614	20.380	2.229	23.678	2.590
34.500	0.163	0.175	21.614	20.355	3.570	23.741	4.164
34.663	0.197	0.213	22.531	20.844	4.444	23.516	5.014
34.860	0.082	0.089	22.531	20.761	1.852	23.505	2.097
34.942	0.197	0.213	22.639	20.743	4.426	23.418	4.997
35.139	0.077	0.084	22.639	20.658	1.732	23.385	1.961
35.217	0.197	0.214	22.750	20.640	4.407	23.268	4.969
35.414	0.073	0.079	22.750	20.554	1.626	23.135	1.830
35.487	0.197	0.214	22.862	20.534	4.389	23.057	4.928
35.684	0.071	0.078	22.862	20.447	1.586	23.028	1.786
35.755	0.197	0.214	22.975	20.425	4.369	22.887	4.895
35.952	0.069	0.075	22.975	20.335	1.524	22.848	1.712
36.021	0.197	0.214	23.089	20.311	4.348	22.721	4.864
36.218	0.072	0.078	23.089	20.218	1.581	22.672	1.773
36.290	0.197	0.214	23.200	20.188	4.325	22.536	4.829
36.487	0.074	0.080	23.200	20.092	1.615	22.515	1.810
36.561	0.197	0.214	23.310	20.057	4.301	22.389	4.801
36.758	0.079	0.087	23.310	19.956	1.727	22.360	1.935
36.837	0.163	0.178	23.416	19.925	3.538	22.248	3.951
37.000	0.120	0.131	23.416	19.819	2.598	22.224	2.913
37.120	0.197	0.217	24.691	20.371	4.415	21.870	4.740
37.317	0.066	0.073	24.691	20.242	1.480	21.787	1.593
37.384	0.197	0.219	26.074	20.786	4.557	21.421	4.696
37.581	0.061	0.068	26.074	20.625	1.397	21.307	1.443
37.641	0.197	0.222	27.509	21.102	4.685	20.942	4.650
37.838	0.054	0.061	27.509	20.908	1.280	20.795	1.273
37.893	0.197	0.225	28.890	21.266	4.783	20.421	4.593
38.090	0.064	0.073	28.890	21.024	1.544	20.280	1.489
38.154	0.197	0.228	30.271	21.274	4.851	19.961	4.552
38.351	0.057	0.066	30.271	20.998	1.391	19.961	1.322
38.408	0.197	0.231	31.603	21.138	4.888	19.499	4.508
38.605	0.066	0.078	31.603	20.810	1.614	19.480	1.510
38.671	0.197	0.234	32.811	20.809	4.876	18.863	4.420
38.868	0.077	0.092	32.811	20.424	1.878	18.551	1.706
38.945	0.197	0.237	33.843	20.279	4.808	17.913	4.247
39.142	0.078	0.094	33.843	19.857	1.862	17.580	1.649
39.220	0.026	0.031	33.843	19.697	0.612	17.463	0.543
39.246	0.197	0.241	35.291	19.632	4.737	16.849	4.065
39.443	0.057	0.070	35.291	19.191	1.346	16.631	1.167
39.500	0.017	0.021	35.291	19.052	0.392	16.562	0.340
39.517	0.197	0.246	36.906	18.778	4.625	15.908	3.918
39.714	0.064	0.080	36.906	18.097	1.440	15.736	1.253
39.777	0.197	0.252	38.576	17.578	4.428	14.992	3.776
39.974	0.054	0.069	38.576	16.859	1.163	14.922	1.029
40.028	0.197	0.258	40.171	16.228	4.182	14.119	3.639
40.225	0.064	0.084	40.171	15.415	1.291	13.596	1.139
40.289	0.197	0.266	42.123	14.632	3.885	12.866	3.416
40.486	0.084	0.113	42.123	13.671	1.547	12.154	1.376
40.570	0.197	0.272	43.611	12.683	3.450	11.628	3.163
40.767	0.126	0.174	43.611	11.503	1.997	10.924	1.897
40.893	0.197	0.278	44.881	10.273	2.855	9.851	2.738
41.090	0.197	0.278	44.881	8.752	2.432	8.763	2.435
41.287	0.071	0.101	44.881	7.715	0.778	8.053	0.812
41.358	0.197	0.281	45.508	6.650	1.869	7.664	2.154

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

Data : 10/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Borselli (2016)

DATI 10 SUP. CON MINOR Fs

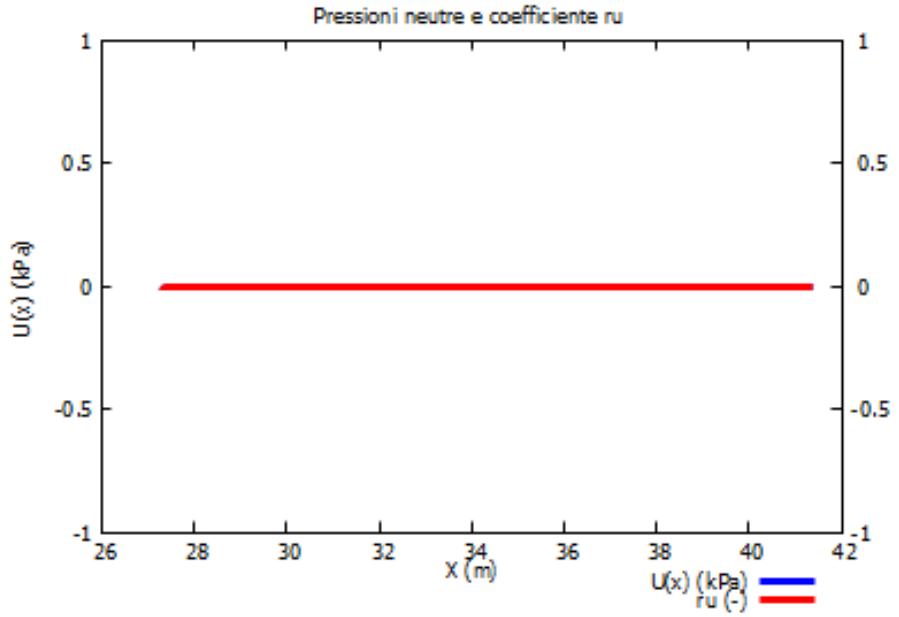
Fs minimo : 1.5837
Range Fs : 1.5837 1.6172
Differenza % Range Fs : 2.07
Coefficiente Sismico orizzontale - Kh: 0.0450
Coefficiente Sismico verticale - Kv: 0.0225

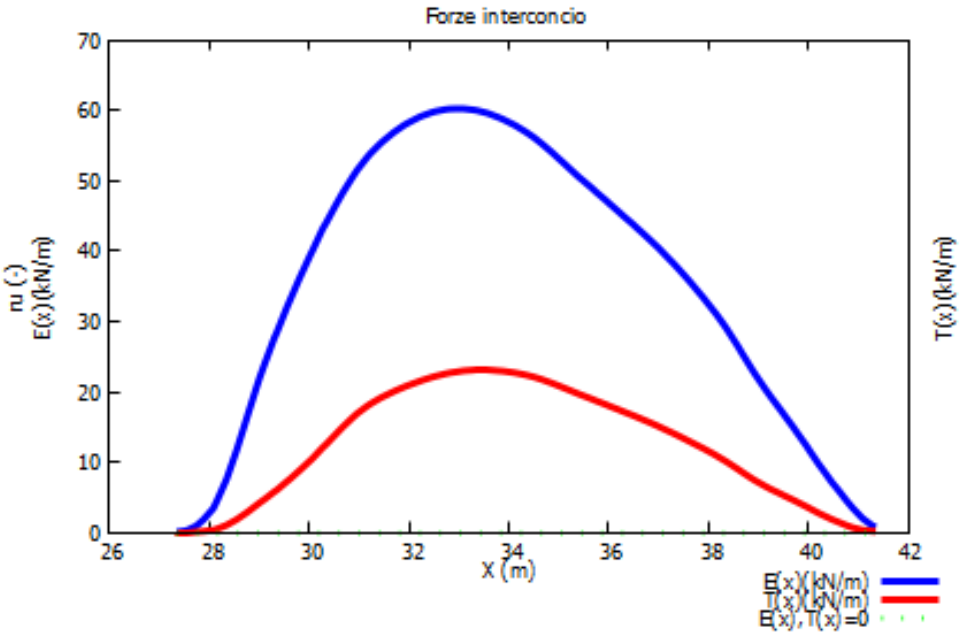
GENERAZIONE SUPERFICI RANDOM

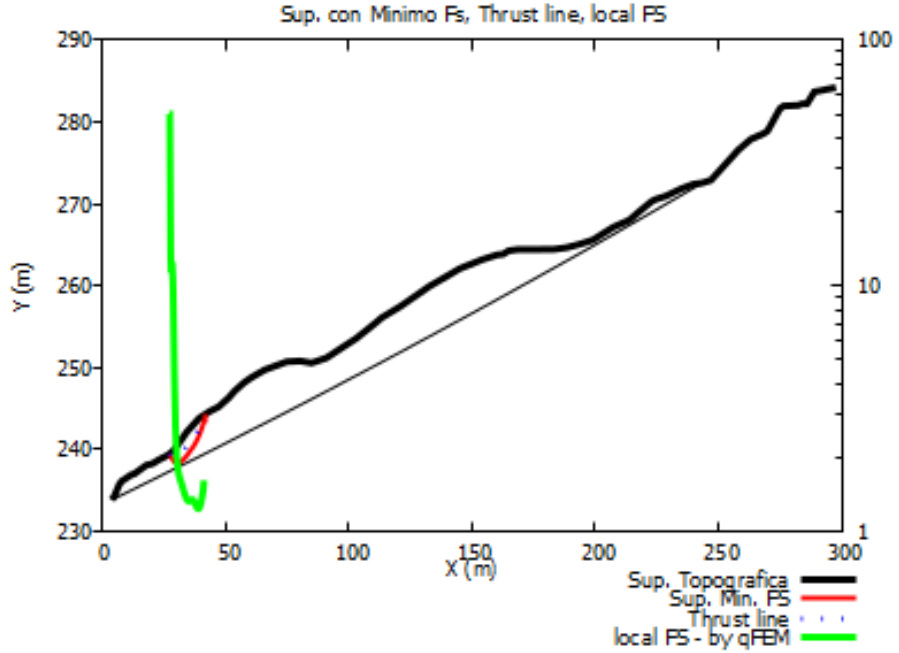
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 11.8
Range X inizio generazione : 9.9 - 274.2
Range X termine generazione : 39.3 - 291.9
Livello Y minimo considerato : 188.6

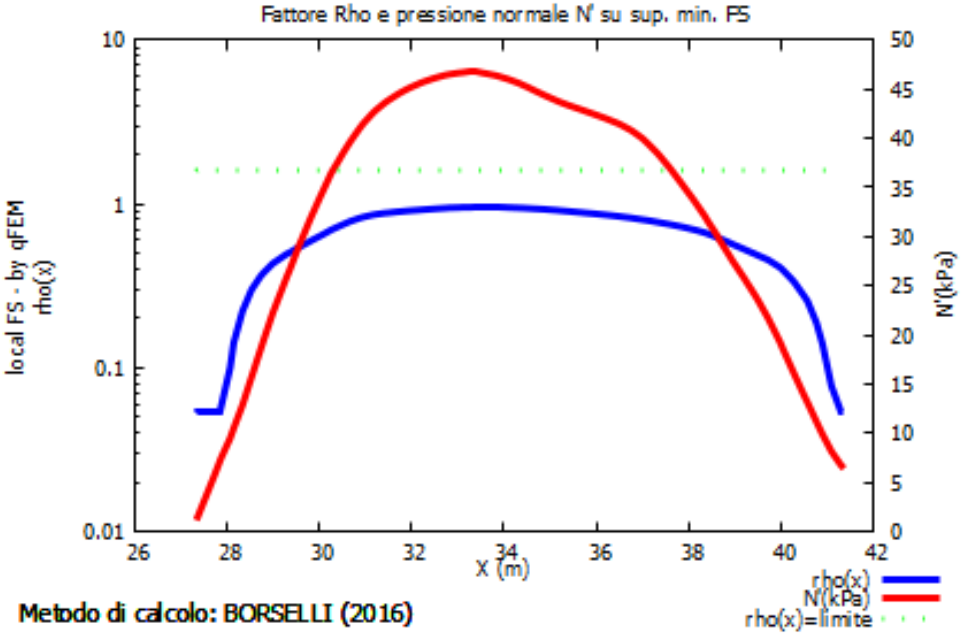
Parametri Geotecnici degli strati # ----------

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
2	22.00	5.00	0	18.00	20.00	0	0	0	0





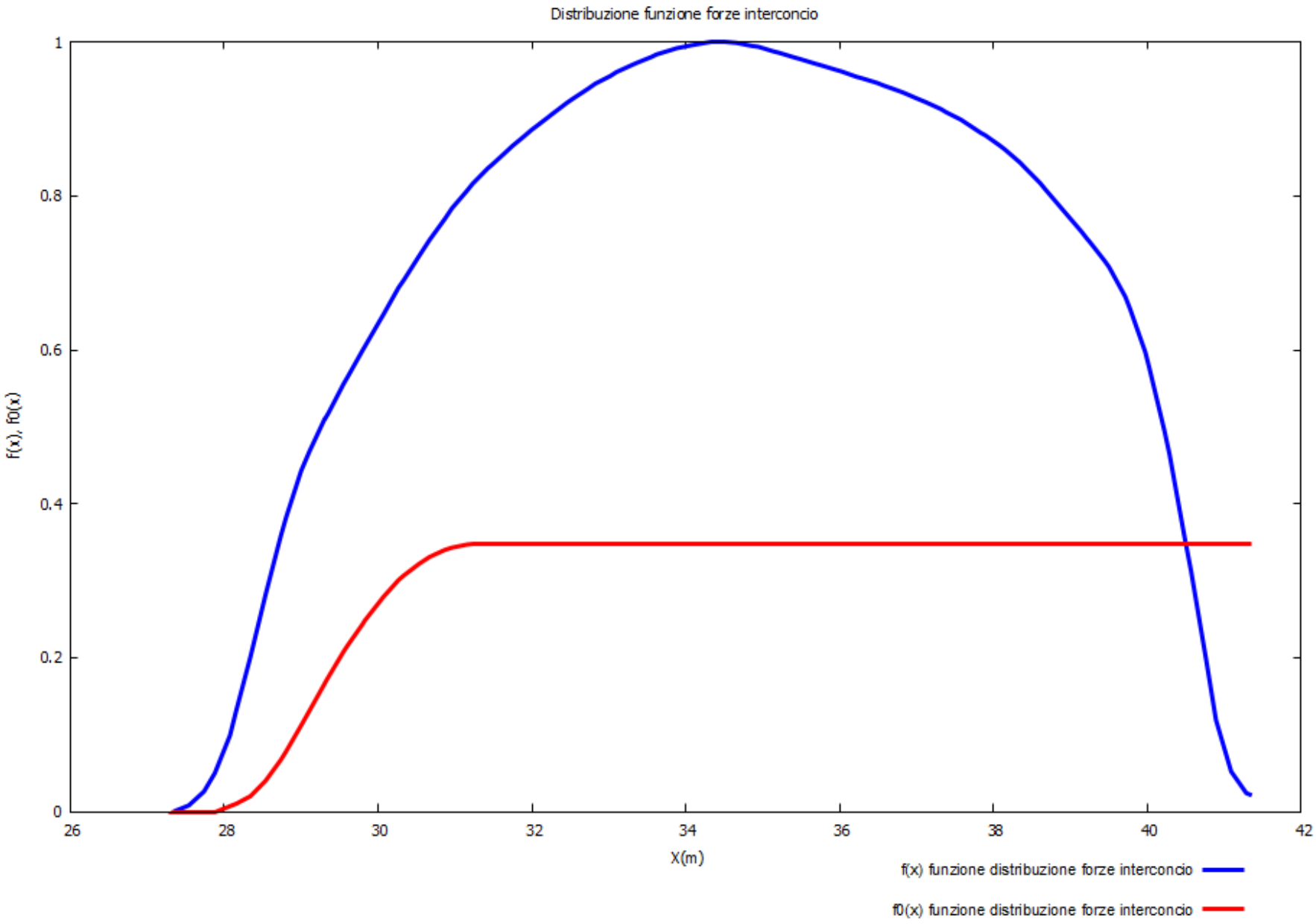


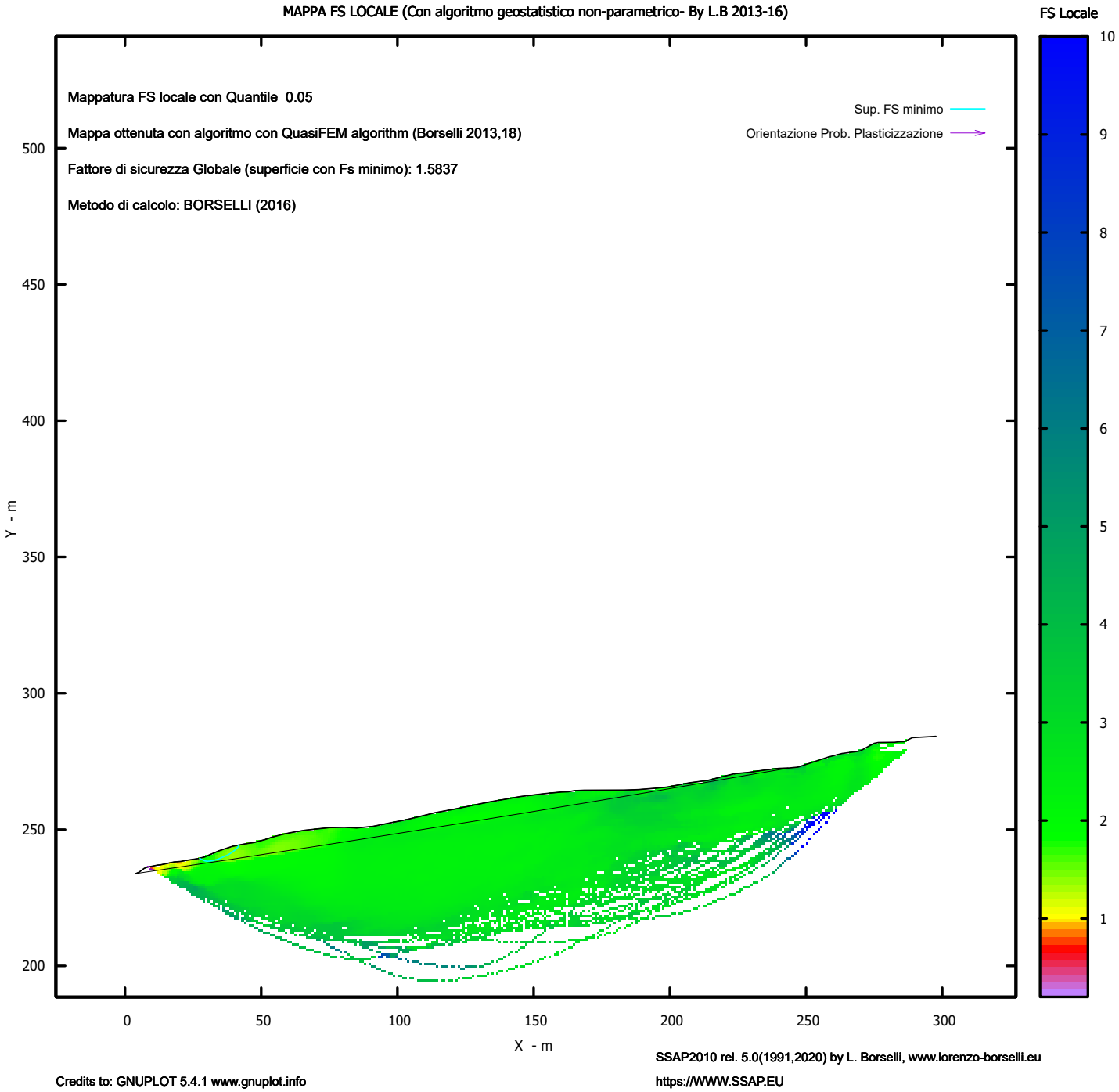


Metodo di calcolo: BORSELLI (2016)

SSAP2010 (versione 5.0 - 2020) - DISTRIBUZIONE FORZE e PRESSIONI

10/11/21 16:34

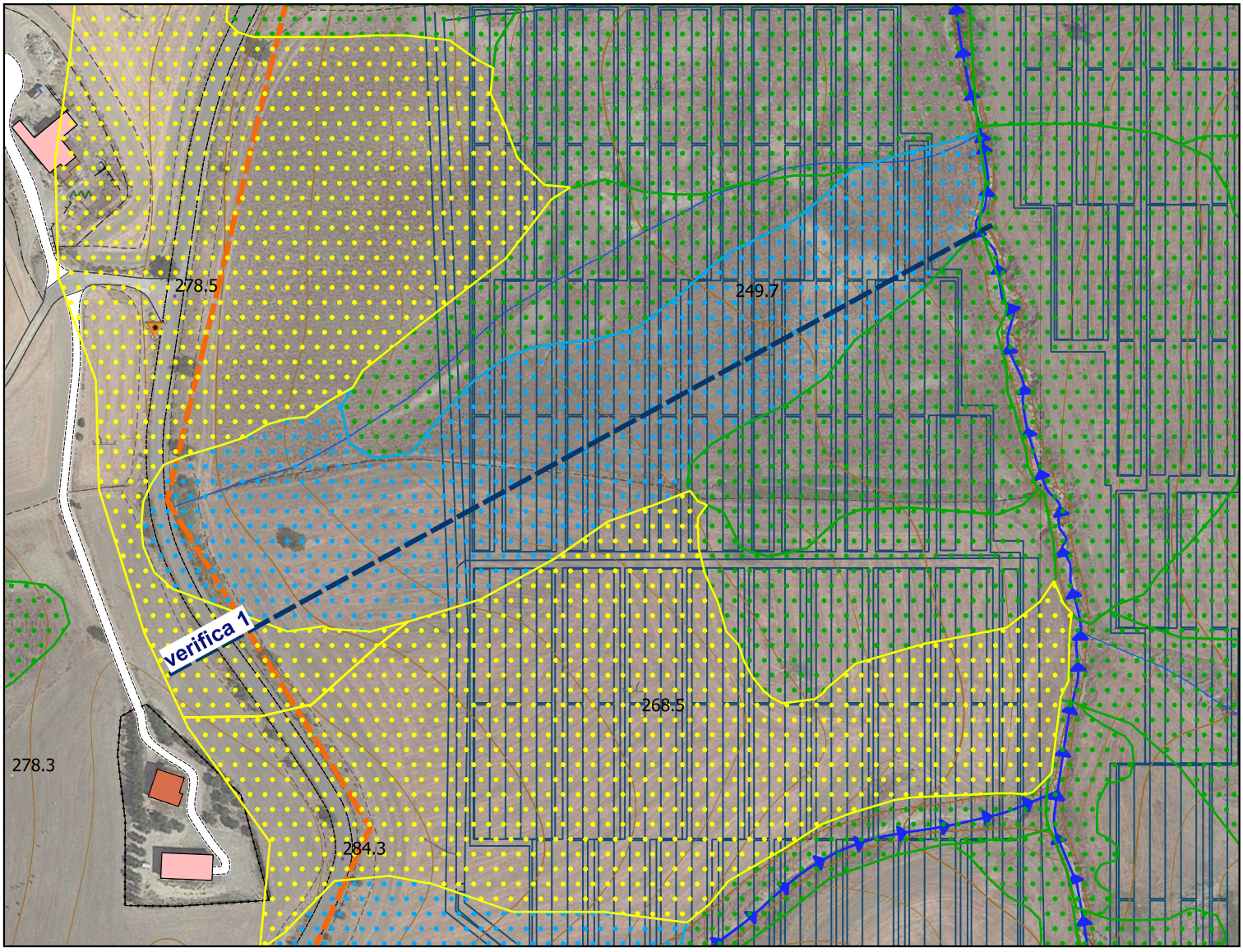


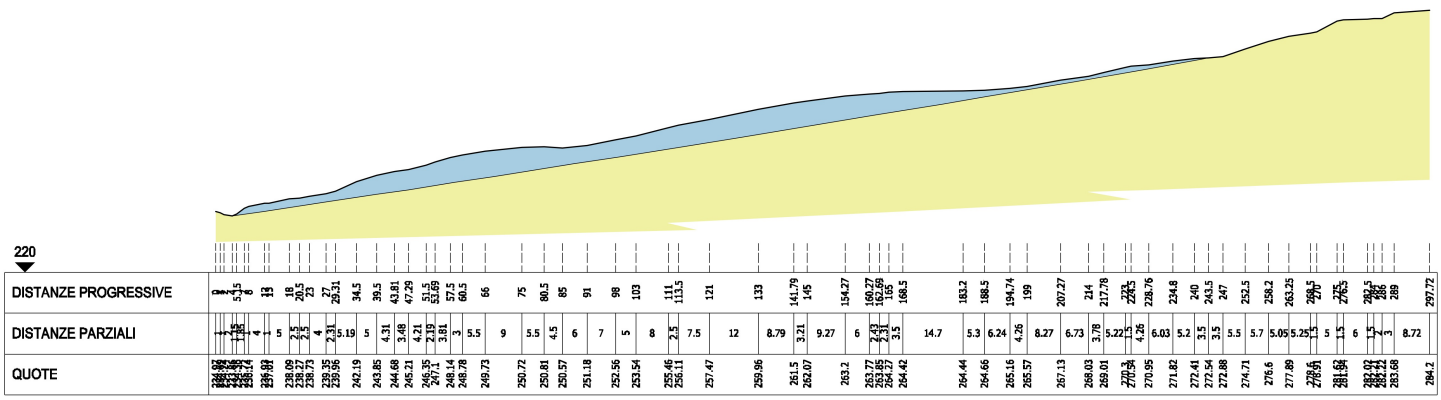

MAPPA FS LOCALE (Con algoritmo geostatistico non-parametrico- By L.B 2013-16)
FS Locale
Mappatura FS locale con Quantile 0.05
Mappa ottenuta con algoritmo con QuasiFEM algorithm (Borselli 2013,18)
Fattore di sicurezza Globale (superficie con Fs minimo): 1.5837
Metodo di calcolo: BORSELLI (2016)
Sup. FS minimo
Orientazione Prob. Plasticizzazione
Y - m
X - m
500
450
400
350
300
250
200
0
50
100
150
200
250
300
10
9
8
7
6
5
4
3
2
1
Credits to: GNUPLOT 5.4.1 www.gnuplot.info
SSAP2010 rel. 5.0(1991,2020) by L. Borselli, www.lorenzo-borselli.eu
https://WWW.SSAP.EU

SEZIONE DI VERIFICA N. 1

CONDIZIONI NON DRENATE

SEZIONE DI VERIFICA N. 1





ARGILLE MARNOSE DEL T. SAURO (Pliocene sup.)
Argille marnose azzurre o grigio verdi a frattura concoide con fitte intercalazioni sottili di sabbie giallastre

CORPI DI FRANA (Olocene)
Coperture di natura limoso argillosa

Report elaborazioni

```
---------------------------------------------------------------------
    SSAP 5.0 - Slope Stability Analysis Program (1991,2020)
                          WWW.SSAP.EU
                        Build No. 11719
                             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: 12 settembre 2020
---------------------------------------------------------------------


    File report: C:\SSAP\CRACO\SERRACARUSOMOR\VERIFICA 1\NON DRENATA\MORG\MORG.txt
           Data: 10/11/2021
    Localita' :
    Descrizione:
 Modello pendio: NON DRENATAVERIFICA1.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

         4.00  233.86    4.00  233.86     -       -       -       -
         5.15  234.36   11.74  235.00     -       -       -       -
         7.00  235.72   27.88  237.41     -       -       -       -
         8.00  236.14   39.22  239.10     -       -       -       -
        12.00  236.93   47.17  240.30     -       -       -       -
        13.00  237.01   58.61  242.07     -       -       -       -
        18.00  238.09   68.23  243.55     -       -       -       -
        20.50  238.27   76.86  244.89     -       -       -       -
        23.00  238.73   87.54  246.55     -       -       -       -
        27.00  239.35   98.96  248.37     -       -       -       -
        29.31  239.96  113.53  250.69     -       -       -       -
        34.50  242.19  129.00  253.18     -       -       -       -
        39.50  243.85  146.71  256.07     -       -       -       -
        43.81  244.68  161.67  258.54     -       -       -       -
        47.29  245.21  178.06  261.28     -       -       -       -
        51.50  246.35  188.92  263.11     -       -       -       -
        53.69  247.10  196.39  264.38     -       -       -       -
        57.50  248.14  210.28  266.76     -       -       -       -
        60.50  248.78  227.21  269.69     -       -       -       -
        66.00  249.73  240.97  272.10     -       -       -       -
        75.00  250.72  243.50  272.54     -       -       -       -
        80.50  250.81  240.00  272.41     -       -       -       -
        85.00  250.57  234.80  271.82     -       -       -       -
        91.00  251.18  228.76  270.95     -       -       -       -
        98.00  252.56  224.50  270.54     -       -       -       -
       103.00  253.54  223.00  270.30     -       -       -       -
       111.00  255.46  217.78  269.01     -       -       -       -
       113.50  256.11  214.00  268.03     -       -       -       -
       121.00  257.47  207.27  267.13     -       -       -       -
       133.00  259.96  199.00  265.57     -       -       -       -
       141.79  261.50  194.74  265.16     -       -       -       -
       145.00  262.07  188.50  264.66     -       -       -       -
       154.27  263.20  183.20  264.44     -       -       -       -
       160.27  263.77  168.50  264.42     -       -       -       -
       162.69  263.85  165.00  264.27     -       -       -       -
       165.00  264.27  162.69  263.85     -       -       -       -
       168.50  264.42  160.27  263.77     -       -       -       -
       183.20  264.44  154.27  263.20     -       -       -       -
       188.50  264.66  145.00  262.07     -       -       -       -
       194.74  265.16  141.79  261.50     -       -       -       -
       199.00  265.57  133.00  259.96     -       -       -       -
       207.27  267.13  121.00  257.47     -       -       -       -
       214.00  268.03  113.50  256.11     -       -       -       -
       217.78  269.01  111.00  255.46     -       -       -       -
       223.00  270.30  103.00  253.54     -       -       -       -
       224.50  270.54   98.00  252.56     -       -       -       -
       228.76  270.95   91.00  251.18     -       -       -       -
       234.80  271.82   85.00  250.57     -       -       -       -
       240.00  272.41   80.50  250.81     -       -       -       -
```

```
      243.50  272.54   75.00  250.72     -       -       -       -
      247.00  272.88   66.00  249.73     -       -       -       -
      252.50  274.71   60.50  248.78     -       -       -       -
      258.20  276.60   57.50  248.14     -       -       -       -
      263.25  277.89   53.69  247.10     -       -       -       -
      268.50  278.60   51.50  246.35     -       -       -       -
      270.00  278.91   47.29  245.21     -       -       -       -
      275.00  281.62   43.81  244.68     -       -       -       -
      276.50  281.94   39.50  243.85     -       -       -       -
      282.50  282.02   34.50  242.19     -       -       -       -
      284.00  282.21   29.31  239.96     -       -       -       -
      286.00  282.22   27.00  239.35     -       -       -       -
      289.00  283.68   23.00  238.73     -       -       -       -
      297.72  284.20   20.50  238.27     -       -       -       -
         -       -     18.00  238.09     -       -       -       -
         -       -     13.00  237.01     -       -       -       -
         -       -     12.00  236.93     -       -       -       -
         -       -      8.00  236.14     -       -       -       -
         -       -      7.00  235.72     -       -       -       -
         -       -      5.15  234.36     -       -       -       -
         -       -      4.00  233.86     -       -       -       -
 ## 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
     STRATO  2       0.00        0.00       38.00       18.00       20.00       2.127       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
      METODO DI RICERCA: CONVEX RANDOM       - Chen     (1992)
      FILTRAGGIO SUPERFICI : ATTIVATO
      COORDINATE X1,X2,Y OSTACOLO :         0.00            0.00            0.00
      LUNGHEZZA MEDIA SEGMENTI (m):              11.5   (+/-) 50%
      INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax):      9.87           80.00
      LIVELLO MINIMO CONSIDERATO (Ymin):                  225.00
      INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax):       39.25          291.85

  *** TOTALE SUPERFICI GENERATE :        10000

  ------------ 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 : 0.0450
      COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0225
      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)    1.3221  - Min. -    X       Y       Lambda=  0.1503
                                              76.96  250.75
                                              96.06  239.30
                                             104.93  234.25
                                             110.76  231.33
                                             115.49  229.36
```

120.27	227.88
124.47	226.94
129.13	226.30
134.23	225.95
140.65	225.84
146.21	225.85
151.36	226.00
156.24	226.28
161.23	226.72
166.05	227.28
171.05	228.00
176.29	228.89
182.11	230.00
187.33	231.14
192.33	232.36
197.13	233.69
202.11	235.23
206.94	236.87
211.96	238.74
217.25	240.85
223.15	243.35
228.34	245.74
233.30	248.23
238.02	250.82
242.99	253.77
248.27	257.23
254.39	261.53
263.29	268.15
264.77	269.28
264.77	278.10

Fattore di sicurezza (FS) 1.3372 - N.2 -- X Y Lambda= 0.1515

61.66	248.98
81.82	238.99
91.29	234.54
97.61	231.93
102.82	230.15
107.99	228.84
112.65	227.98
117.72	227.39
123.20	227.09
129.89	227.00
135.75	227.05
141.23	227.24
146.45	227.56
151.79	228.04
156.92	228.64
162.22	229.40
167.68	230.33
173.64	231.47
179.28	232.60
184.76	233.77
190.15	234.97
195.56	236.25
200.99	237.59
206.58	239.03
212.45	240.61
218.82	242.38
224.17	244.14
229.23	246.12
233.95	248.31
239.15	251.10
244.50	254.45
250.88	258.94
260.39	266.20
264.83	269.72
264.83	278.10

Fattore di sicurezza (FS) 1.3380 - N.3 -- X Y Lambda= 0.1582

73.79	250.59
83.60	242.00
88.15	238.18
91.11	235.93
93.51	234.38
95.93	233.13
98.01	232.27
100.35	231.56

102.89	231.00
106.15	230.49
109.04	230.08
111.72	229.74
114.29	229.46
116.86	229.23
119.38	229.05
121.96	228.91
124.62	228.81
127.46	228.75
130.11	228.73
132.68	228.76
135.19	228.84
137.76	228.96
140.25	229.13
142.80	229.35
145.39	229.62
148.13	229.96
150.81	230.29
153.45	230.63
156.07	230.97
158.67	231.32
161.27	231.67
163.88	232.04
166.50	232.41
169.13	232.80
171.76	233.19
174.36	233.59
176.96	233.99
179.56	234.41
182.16	234.83
184.76	235.26
187.37	235.71
189.98	236.16
192.61	236.61
195.23	237.07
197.85	237.52
200.46	237.98
203.12	238.44
205.82	238.91
208.62	239.40
211.54	239.90
214.07	240.45
216.49	241.09
218.79	241.83
221.28	242.77
223.60	243.78
226.06	244.98
228.64	246.37
231.59	248.09
234.37	249.73
237.04	251.33
239.65	252.93
242.24	254.54
244.81	256.17
247.39	257.84
250.00	259.55
252.67	261.33
255.31	263.10
257.93	264.86
260.54	266.64
263.14	268.41
264.76	269.53
264.76	278.09

Fattore di sicurezza (FS) 1.3770 - N.4 --

X	Y	Lambda= 0.1391
71.59	250.35	
90.81	241.64	
100.06	237.64	
106.34	235.20	
111.67	233.41	
116.79	232.01	
121.55	230.95	
126.62	230.07	
131.99	229.38	
138.25	228.80	
143.84	228.39	
149.15	228.12	

154.24	227.99
159.45	227.99
164.54	228.12
169.84	228.38
175.42	228.79
181.65	229.37
187.02	230.05
192.11	230.91
196.90	231.95
202.02	233.30
206.84	234.81
211.97	236.66
217.43	238.85
223.76	241.61
229.30	244.22
234.53	246.89
239.49	249.64
244.68	252.76
250.20	256.39
256.60	260.89
265.87	267.80
268.50	269.81
268.50	278.60

Fattore di sicurezza (FS) 1.3832 - N.5 -- X Y Lambda= 0.1447

40.93	244.13
61.31	238.00
71.38	235.11
78.36	233.30
84.41	231.92
90.07	230.84
95.51	229.96
101.16	229.22
107.07	228.60
113.63	228.07
119.57	227.72
125.25	227.52
130.73	227.47
136.38	227.57
141.83	227.81
147.45	228.20
153.26	228.75
159.59	229.49
165.56	230.25
171.34	231.06
177.01	231.94
182.73	232.89
188.47	233.94
194.41	235.10
200.71	236.41
207.66	237.93
213.31	239.48
218.58	241.31
223.40	243.42
228.85	246.26
234.35	249.75
241.02	254.58
251.09	262.57
257.51	267.88
257.51	276.37

Fattore di sicurezza (FS) 1.3961 - N.6 -- X Y Lambda= 0.1519

70.66	250.24
90.12	240.28
99.17	235.90
105.15	233.39
110.02	231.72
114.92	230.54
119.24	229.83
124.00	229.42
129.15	229.32
135.50	229.50
141.19	229.73
146.53	230.04
151.66	230.43
156.81	230.91
161.85	231.47

167.00	232.13
172.29	232.89
177.91	233.78
183.22	234.70
188.38	235.67
193.45	236.71
198.60	237.84
203.73	239.06
209.03	240.41
214.63	241.92
220.78	243.66
225.93	245.37
230.78	247.29
235.29	249.41
240.26	252.10
245.37	255.35
251.47	259.69
260.55	266.71
263.25	268.87
263.25	277.89

Fattore di sicurezza (FS) 1.3997 - N.7 -- X Y Lambda= 0.1474

67.84	249.93
87.23	239.74
96.23	235.27
102.16	232.70
106.98	231.01
111.84	229.81
116.11	229.09
120.81	228.68
125.90	228.59
132.19	228.77
137.87	229.00
143.22	229.29
148.37	229.64
153.50	230.05
158.58	230.54
163.77	231.10
169.11	231.74
174.79	232.50
180.00	233.31
185.05	234.21
189.95	235.23
195.02	236.41
199.98	237.71
205.16	239.19
210.64	240.91
216.79	242.96
222.01	244.94
226.92	247.08
231.52	249.38
236.50	252.19
241.68	255.54
247.80	259.90
256.83	266.83
258.20	267.92
258.20	276.60

Fattore di sicurezza (FS) 1.4122 - N.8 -- X Y Lambda= 0.1545

52.23	246.60
67.58	237.03
74.65	232.84
79.27	230.44
82.98	228.86
86.76	227.70
90.03	226.98
93.66	226.53
97.62	226.34
102.61	226.37
107.13	226.44
111.35	226.55
115.44	226.70
119.47	226.89
123.47	227.12
127.54	227.41
131.71	227.74
136.07	228.13

140.16	228.57
144.16	229.07
148.06	229.64
152.07	230.30
155.98	231.02
160.00	231.84
164.15	232.77
168.61	233.83
172.75	234.90
176.76	236.02
180.67	237.19
184.68	238.48
188.57	239.82
192.55	241.26
196.61	242.83
200.91	244.56
205.09	246.27
209.19	247.97
213.26	249.68
217.31	251.41
221.36	253.16
225.43	254.94
229.55	256.76
233.73	258.63
237.82	260.50
241.86	262.39
245.15	263.95
245.15	272.70

Fattore di sicurezza (FS) 1.4124 - N.9 -- X Y Lambda= 0.1467

39.41	243.82
60.48	238.02
70.86	235.32
78.03	233.65
84.24	232.41
90.06	231.49
95.58	230.78
101.29	230.22
107.15	229.82
113.54	229.54
119.77	229.28
125.86	229.02
131.91	228.77
137.86	228.53
143.95	228.29
150.15	228.04
156.61	227.79
163.40	227.53
169.18	227.56
174.65	227.87
179.77	228.48
185.42	229.49
190.63	230.74
196.27	232.45
202.40	234.63
209.76	237.53
216.05	240.25
221.92	243.04
227.43	245.95
233.22	249.29
239.33	253.21
246.45	258.15
256.84	265.81
259.92	268.16
259.92	277.04

Fattore di sicurezza (FS) 1.4183 - N.10 -- X Y Lambda= 0.1339

71.56	250.34
89.78	241.49
98.58	237.40
104.57	234.87
109.66	232.97
114.54	231.46
119.11	230.27
123.98	229.24
129.15	228.37
135.21	227.57

140.49	227.00
145.46	226.63
150.16	226.44
155.08	226.42
159.78	226.56
164.72	226.89
169.96	227.40
175.94	228.15
181.13	228.95
186.04	229.89
190.69	230.98
195.59	232.32
200.26	233.80
205.20	235.57
210.46	237.64
216.50	240.21
221.70	242.62
226.59	245.15
231.21	247.79
236.11	250.86
241.27	254.47
247.30	259.04
256.11	266.15
257.58	267.37
257.58	276.39

---------- 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	1.322	21363.1	16158.2	3589.0	Surplus
2	1.337	22219.3	16616.5	3941.2	Surplus
3	1.338	21315.3	15931.1	3791.1	Surplus
4	1.377	21769.2	15809.5	4378.8	Surplus
5	1.383	23161.5	16744.3	4742.8	Surplus
6	1.396	21036.1	15068.0	4461.4	Surplus
7	1.400	20843.3	14891.4	4462.7	Surplus
8	1.412	20954.1	14838.0	4632.4	Surplus
9	1.412	23749.7	16815.7	5252.4	Surplus
10	1.418	20842.7	14695.5	4677.7	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 3589.0

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

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

TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (°)	W (kN/m)	ru (-)	U (kPa)	phi' (°)	(c',Cu) (kPa)
76.960	0.790	-30.94	3.53	0.00	0.00	0.00	38.00
77.750	1.478	-30.94	25.61	0.00	0.00	0.00	38.00
79.228	1.272	-30.94	41.85	0.00	0.00	0.00	38.00
80.500	1.478	-30.94	70.27	0.00	0.00	0.00	38.00
81.978	0.772	-30.94	45.42	0.00	0.00	0.00	38.00
82.750	1.478	-30.94	103.69	0.00	0.00	0.00	38.00
84.228	0.478	-30.94	38.25	0.00	0.00	0.00	38.00
84.706	0.294	-30.94	24.69	0.00	0.00	0.00	100.00
85.000	1.478	-30.94	142.59	0.00	0.00	0.00	100.00
86.478	1.062	-30.94	121.91	0.00	0.00	0.00	100.00
87.540	0.460	-30.94	57.87	0.00	0.00	0.00	100.00
88.000	1.478	-30.94	206.66	0.00	0.00	0.00	100.00
89.478	1.478	-30.94	238.24	0.00	0.00	0.00	100.00
90.956	0.044	-30.94	7.53	0.00	0.00	0.00	100.00
91.000	1.478	-30.94	272.67	0.00	0.00	0.00	100.00
92.478	1.478	-30.94	308.09	0.00	0.00	0.00	100.00
93.956	0.544	-30.94	122.24	0.00	0.00	0.00	100.00
94.500	1.478	-30.94	356.54	0.00	0.00	0.00	100.00

95.978	0.082	-30.94	20.76	0.00	0.00	0.00	100.00
96.060	1.478	-29.66	393.25	0.00	0.00	0.00	100.00
97.538	0.462	-29.66	129.89	0.00	0.00	0.00	100.00
98.000	0.960	-29.66	280.57	0.00	0.00	0.00	100.00
98.960	1.478	-29.66	460.08	0.00	0.00	0.00	100.00
100.438	0.062	-29.66	20.00	0.00	0.00	0.00	100.00
100.500	1.478	-29.66	495.54	0.00	0.00	0.00	100.00
101.978	1.022	-29.66	362.47	0.00	0.00	0.00	100.00
103.000	1.478	-29.66	554.00	0.00	0.00	0.00	100.00
104.478	0.449	-29.66	175.24	0.00	0.00	0.00	100.00
104.927	1.478	-26.66	599.17	0.00	0.00	0.00	100.00
106.405	0.595	-26.66	250.47	0.00	0.00	0.00	100.00
107.000	1.478	-26.66	645.18	0.00	0.00	0.00	100.00
108.478	1.478	-26.66	677.98	0.00	0.00	0.00	100.00
109.956	0.801	-26.66	381.00	0.00	0.00	0.00	100.00
110.757	0.243	-22.58	117.43	0.00	0.00	0.00	100.00
111.000	1.250	-22.58	616.89	0.00	0.00	0.00	100.00
112.250	1.250	-22.58	638.16	0.00	0.00	0.00	100.00
113.500	0.030	-22.58	15.58	0.00	0.00	0.00	100.00
113.530	1.478	-22.58	781.05	0.00	0.00	0.00	100.00
115.008	0.485	-22.58	262.02	0.00	0.00	0.00	100.00
115.493	1.478	-17.15	813.97	0.00	0.00	0.00	100.00
116.971	0.279	-17.15	155.97	0.00	0.00	0.00	100.00
117.250	1.478	-17.15	839.88	0.00	0.00	0.00	100.00
118.728	1.478	-17.15	861.69	0.00	0.00	0.00	100.00
120.206	0.061	-17.15	35.96	0.00	0.00	0.00	100.00
120.267	0.733	-12.63	435.27	0.00	0.00	0.00	100.00
121.000	1.478	-12.63	891.96	0.00	0.00	0.00	100.00
122.478	1.478	-12.63	911.03	0.00	0.00	0.00	100.00
123.956	0.513	-12.63	320.91	0.00	0.00	0.00	100.00
124.470	1.478	-7.87	934.82	0.00	0.00	0.00	100.00
125.948	1.052	-7.87	674.69	0.00	0.00	0.00	100.00
127.000	1.478	-7.87	960.91	0.00	0.00	0.00	100.00
128.478	0.522	-7.87	342.89	0.00	0.00	0.00	100.00
129.000	0.133	-7.87	88.00	0.00	0.00	0.00	100.00
129.133	1.478	-3.89	981.34	0.00	0.00	0.00	100.00
130.612	1.478	-3.89	993.45	0.00	0.00	0.00	100.00
132.090	0.910	-3.89	617.80	0.00	0.00	0.00	100.00
133.000	1.235	-3.89	844.86	0.00	0.00	0.00	100.00
134.235	1.478	-1.03	1020.29	0.00	0.00	0.00	100.00
135.713	1.478	-1.03	1028.86	0.00	0.00	0.00	100.00
137.191	0.204	-1.03	142.72	0.00	0.00	0.00	100.00
137.395	1.478	-1.03	1038.62	0.00	0.00	0.00	100.00
138.873	1.478	-1.03	1047.20	0.00	0.00	0.00	100.00
140.351	0.295	-1.03	210.33	0.00	0.00	0.00	100.00
140.647	1.143	0.18	816.90	0.00	0.00	0.00	100.00
141.790	1.478	0.18	1062.97	0.00	0.00	0.00	100.00
143.268	0.127	0.18	91.59	0.00	0.00	0.00	100.00
143.395	1.478	0.18	1071.37	0.00	0.00	0.00	100.00
144.873	0.127	0.18	92.31	0.00	0.00	0.00	100.00
145.000	1.206	0.18	879.52	0.00	0.00	0.00	100.00
146.206	0.504	1.67	368.74	0.00	0.00	0.00	100.00
146.710	1.478	1.67	1084.02	0.00	0.00	0.00	100.00
148.188	1.447	1.67	1065.28	0.00	0.00	0.00	100.00
149.635	1.478	1.67	1092.60	0.00	0.00	0.00	100.00
151.113	0.248	1.67	183.95	0.00	0.00	0.00	100.00
151.361	1.478	3.30	1097.03	0.00	0.00	0.00	100.00
152.840	1.430	3.30	1064.55	0.00	0.00	0.00	100.00
154.270	1.478	3.30	1102.52	0.00	0.00	0.00	100.00
155.748	0.495	3.30	369.37	0.00	0.00	0.00	100.00
156.243	1.027	4.98	767.52	0.00	0.00	0.00	100.00
157.270	1.478	4.98	1104.97	0.00	0.00	0.00	100.00
158.748	1.478	4.98	1105.64	0.00	0.00	0.00	100.00
160.226	0.044	4.98	32.71	0.00	0.00	0.00	100.00
160.270	0.961	4.98	718.32	0.00	0.00	0.00	100.00
161.231	0.249	6.59	186.41	0.00	0.00	0.00	100.00
161.480	0.190	6.59	141.92	0.00	0.00	0.00	100.00
161.670	1.020	6.59	761.01	0.00	0.00	0.00	100.00
162.690	1.155	6.59	861.78	0.00	0.00	0.00	100.00
163.845	1.155	6.59	863.55	0.00	0.00	0.00	100.00
165.000	1.046	6.59	781.97	0.00	0.00	0.00	100.00
166.046	0.704	8.18	525.75	0.00	0.00	0.00	100.00
166.750	1.478	8.18	1100.51	0.00	0.00	0.00	100.00
168.228	0.272	8.18	201.97	0.00	0.00	0.00	100.00
168.500	1.478	8.18	1095.00	0.00	0.00	0.00	100.00
169.978	1.076	8.18	793.88	0.00	0.00	0.00	100.00
171.055	1.478	9.64	1084.70	0.00	0.00	0.00	100.00
172.533	1.478	9.64	1077.91	0.00	0.00	0.00	100.00
174.011	1.478	9.64	1071.13	0.00	0.00	0.00	100.00

175.489	0.361	9.64	260.56	0.00	0.00	0.00	100.00
175.850	0.443	9.64	319.16	0.00	0.00	0.00	100.00
176.293	1.478	10.88	1060.15	0.00	0.00	0.00	100.00
177.771	0.289	10.88	206.30	0.00	0.00	0.00	100.00
178.060	1.478	10.88	1050.84	0.00	0.00	0.00	100.00
179.538	1.478	10.88	1043.06	0.00	0.00	0.00	100.00
181.016	1.090	10.88	764.21	0.00	0.00	0.00	100.00
182.106	1.094	12.24	762.19	0.00	0.00	0.00	100.00
183.200	1.478	12.24	1023.22	0.00	0.00	0.00	100.00
184.678	1.172	12.24	806.03	0.00	0.00	0.00	100.00
185.850	1.478	12.24	1010.18	0.00	0.00	0.00	100.00
187.328	0.001	12.24	0.69	0.00	0.00	0.00	100.00
187.329	1.171	13.81	794.60	0.00	0.00	0.00	100.00
188.500	0.420	13.81	283.79	0.00	0.00	0.00	100.00
188.920	1.478	13.81	994.27	0.00	0.00	0.00	100.00
190.398	1.222	13.81	816.59	0.00	0.00	0.00	100.00
191.620	0.708	13.81	471.06	0.00	0.00	0.00	100.00
192.328	1.478	15.48	977.43	0.00	0.00	0.00	100.00
193.806	0.934	15.48	613.11	0.00	0.00	0.00	100.00
194.740	1.478	15.48	964.06	0.00	0.00	0.00	100.00
196.218	0.172	15.48	111.58	0.00	0.00	0.00	100.00
196.390	0.480	15.48	311.10	0.00	0.00	0.00	100.00
196.870	0.260	15.48	167.86	0.00	0.00	0.00	100.00
197.130	1.478	17.14	950.84	0.00	0.00	0.00	100.00
198.608	0.392	17.14	250.84	0.00	0.00	0.00	100.00
199.000	1.478	17.14	941.13	0.00	0.00	0.00	100.00
200.478	1.478	17.14	935.70	0.00	0.00	0.00	100.00
201.956	0.158	17.14	99.45	0.00	0.00	0.00	100.00
202.114	1.021	18.78	642.48	0.00	0.00	0.00	100.00
203.135	1.478	18.78	924.26	0.00	0.00	0.00	100.00
204.613	1.478	18.78	917.43	0.00	0.00	0.00	100.00
206.091	0.844	18.78	520.81	0.00	0.00	0.00	100.00
206.935	0.335	20.36	205.83	0.00	0.00	0.00	100.00
207.270	1.478	20.36	903.02	0.00	0.00	0.00	100.00
208.748	1.478	20.36	892.57	0.00	0.00	0.00	100.00
210.226	0.054	20.36	32.24	0.00	0.00	0.00	100.00
210.280	0.355	20.36	212.72	0.00	0.00	0.00	100.00
210.635	1.327	20.36	790.08	0.00	0.00	0.00	100.00
211.962	1.478	21.80	869.24	0.00	0.00	0.00	100.00
213.441	0.559	21.80	325.92	0.00	0.00	0.00	100.00
214.000	1.478	21.80	855.61	0.00	0.00	0.00	100.00
215.478	0.412	21.80	237.21	0.00	0.00	0.00	100.00
215.890	1.357	21.80	778.06	0.00	0.00	0.00	100.00
217.247	0.533	23.00	303.78	0.00	0.00	0.00	100.00
217.780	1.478	23.00	837.36	0.00	0.00	0.00	100.00
219.258	1.132	23.00	635.61	0.00	0.00	0.00	100.00
220.390	1.478	23.00	822.79	0.00	0.00	0.00	100.00
221.868	1.132	23.00	624.45	0.00	0.00	0.00	100.00
223.000	0.146	23.00	80.01	0.00	0.00	0.00	100.00
223.146	0.604	24.69	330.52	0.00	0.00	0.00	100.00
223.750	0.750	24.69	407.10	0.00	0.00	0.00	100.00
224.500	1.478	24.69	791.01	0.00	0.00	0.00	100.00
225.978	0.652	24.69	343.78	0.00	0.00	0.00	100.00
226.630	0.580	24.69	303.29	0.00	0.00	0.00	100.00
227.210	1.134	24.69	586.13	0.00	0.00	0.00	100.00
228.344	0.416	26.65	212.30	0.00	0.00	0.00	100.00
228.760	1.478	26.65	744.70	0.00	0.00	0.00	100.00
230.238	1.478	26.65	728.85	0.00	0.00	0.00	100.00
231.716	0.064	26.65	31.06	0.00	0.00	0.00	100.00
231.780	1.478	26.65	712.31	0.00	0.00	0.00	100.00
233.258	0.040	26.65	19.24	0.00	0.00	0.00	100.00
233.299	1.478	28.74	694.99	0.00	0.00	0.00	100.00
234.777	0.023	28.74	10.83	0.00	0.00	0.00	100.00
234.800	1.478	28.74	676.17	0.00	0.00	0.00	100.00
236.278	1.122	28.74	500.41	0.00	0.00	0.00	100.00
237.400	0.620	28.74	271.74	0.00	0.00	0.00	100.00
238.020	1.478	30.74	633.41	0.00	0.00	0.00	100.00
239.498	0.502	30.74	210.31	0.00	0.00	0.00	100.00
240.000	0.970	30.74	398.74	0.00	0.00	0.00	100.00
240.970	0.780	30.74	313.04	0.00	0.00	0.00	100.00
241.750	1.238	30.74	482.80	0.00	0.00	0.00	100.00
242.988	0.512	33.19	194.76	0.00	0.00	0.00	100.00
243.500	1.478	33.19	544.69	0.00	0.00	0.00	100.00
244.978	1.478	33.19	519.80	0.00	0.00	0.00	100.00
246.456	0.544	33.19	184.94	0.00	0.00	0.00	100.00
247.000	1.268	33.19	421.96	0.00	0.00	0.00	100.00
248.268	1.478	35.07	477.64	0.00	0.00	0.00	100.00
249.746	1.478	35.07	461.14	0.00	0.00	0.00	100.00
251.224	1.276	35.07	384.84	0.00	0.00	0.00	100.00

252.500	1.478	35.07	430.37	0.00	0.00	0.00	100.00
253.978	0.413	35.07	117.43	0.00	0.00	0.00	100.00
254.392	1.478	36.65	408.25	0.00	0.00	0.00	100.00
255.870	1.478	36.65	389.82	0.00	0.00	0.00	100.00
257.348	0.852	36.65	216.34	0.00	0.00	0.00	100.00
258.200	1.478	36.65	359.07	0.00	0.00	0.00	100.00
259.678	1.478	36.65	337.24	0.00	0.00	0.00	100.00
261.156	1.478	36.65	315.42	0.00	0.00	0.00	100.00
262.634	0.616	36.65	124.92	0.00	0.00	0.00	100.00
263.250	0.038	36.65	7.56	0.00	0.00	0.00	100.00
263.288	1.478	37.41	280.65	0.00	0.00	0.00	100.00

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

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TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	ht (m)	yt (m)	yt' (--)	E(x) (kN/m)	T(x) (kN/m)	E' (kN)	rho(x) (--)	FS_qFEM (--)	FS_srmFEM (--)
76.960	0.000	250.752	-0.449	0.0000000000E+000	0.0000000000E+000	1.2146376695E+001	0.044	1.763	1.977
77.750	0.122	250.401	-0.449	1.3621935263E+001	5.3880915060E-003	2.2351930450E+001	0.044	1.763	1.977
79.228	0.341	249.734	-0.459	6.0779100405E+001	1.7807710177E-001	5.3510058875E+001	0.044	0.806	0.904
80.500	0.507	249.137	-0.506	1.5248222425E+002	1.2085957998E+000	8.9852334589E+001	0.044	0.544	0.607
81.978	0.597	248.342	-0.505	3.1579026944E+002	4.4716827623E+000	1.0567857878E+002	0.052	0.577	0.478
82.750	0.719	248.001	-0.401	3.9542310133E+002	6.8124548214E+000	1.0385546204E+002	0.070	0.635	0.452
84.228	1.045	247.441	-0.375	5.5087560803E+002	1.2424591618E+001	1.1618348873E+002	0.103	0.732	0.426
84.706	1.157	247.266	-0.371	6.0813949619E+002	1.4805568805E+001	1.2999560088E+002	0.115	0.761	1.109
85.000	1.221	247.154	-0.357	6.4816094478E+002	1.6591553054E+001	1.3669704771E+002	0.115	0.775	1.102
86.478	1.586	246.634	-0.369	8.5325664963E+002	2.6565029504E+001	1.6485950879E+002	0.118	0.829	1.083
87.540	1.807	246.218	-0.389	1.0482288045E+003	3.7504036819E+001	1.8832024785E+002	0.132	0.865	1.079
88.000	1.906	246.041	-0.364	1.1357939098E+003	4.2680243125E+001	1.8535223122E+002	0.138	0.879	1.077
89.478	2.263	245.512	-0.363	1.3859901208E+003	5.7140299099E+001	1.8268811383E+002	0.145	0.921	1.067
90.956	2.604	244.968	-0.368	1.6758719502E+003	7.5456239497E+001	1.8993584669E+002	0.159	0.971	1.073
91.000	2.615	244.953	-0.354	1.6841671042E+003	7.5992226600E+001	1.9036037563E+002	0.159	0.973	1.073
92.478	2.977	244.429	-0.347	1.9958944444E+003	9.7410913204E+001	2.1488490209E+002	0.173	1.029	1.092
93.956	3.361	243.926	-0.340	2.3194280109E+003	1.2100485625E+002	2.3442230003E+002	0.186	1.087	1.119
94.500	3.502	243.742	-0.328	2.4499957864E+003	1.3129621120E+002	2.3967624605E+002	0.192	1.111	1.132
95.978	3.909	243.263	-0.321	2.8024082581E+003	1.6001080300E+002	2.1603617815E+002	0.208	1.177	1.172
96.060	3.937	243.242	-0.284	2.8199715845E+003	1.6154041219E+002	2.1607933357E+002	0.209	1.181	1.175
97.538	4.357	242.820	-0.283	3.1736010114E+003	1.9355846273E+002	2.4574309324E+002	0.226	1.263	1.224
98.000	4.492	242.692	-0.269	3.2880607219E+003	2.0452846436E+002	2.4576997234E+002	0.232	1.294	1.242
98.960	4.785	242.438	-0.261	3.5199983774E+003	2.2714112004E+002	2.4934458083E+002	0.243	1.360	1.280
100.438	5.244	242.055	-0.259	3.9061874314E+003	2.6810353050E+002	2.7680758501E+002	0.263		

1.495	1.351						
100.500	5.263	242.039	-0.267	3.9233503552E+003	2.7002482316E+002	2.7815696801E+002	0.264
1.502	1.354						
101.978	5.710	241.645	-0.257	4.3591961361E+003	3.1974115140E+002	2.9519905184E+002	0.289
1.703	1.446						
103.000	6.043	241.396	-0.247	4.6610867267E+003	3.5640478024E+002	3.0539036345E+002	0.306
1.876	1.516						
104.478	6.518	241.028	-0.252	5.1337874620E+003	4.1596723158E+002	3.4603322361E+002	0.333
2.223	1.639						
104.927	6.656	240.911	-0.236	5.2926150065E+003	4.3656143313E+002	3.4804065038E+002	0.343
2.358	1.682						
106.405	7.061	240.573	-0.231	5.7780586830E+003	5.0157533275E+002	3.5090099565E+002	0.371
2.870	1.831						
107.000	7.218	240.432	-0.210	5.9922478571E+003	5.3096820513E+002	3.4884739639E+002	0.384
3.126	1.900						
108.478	7.667	240.139	-0.186	6.4671155826E+003	5.9806167831E+002	3.1264848058E+002	0.410
3.811	2.069						
109.956	8.153	239.883	-0.168	6.9165257162E+003	6.6358382950E+002	3.0324685962E+002	0.432
4.509	2.236						
110.757	8.429	239.756	-0.158	7.1590192886E+003	7.0001959375E+002	3.0054021522E+002	0.443
4.789	2.325						
111.000	8.492	239.718	-0.137	7.2318608853E+003	7.1099936736E+002	2.9576491544E+002	0.447
4.859	2.353						
112.250	8.844	239.551	-0.125	7.5752983419E+003	7.6375938831E+002	2.6580138856E+002	0.463
4.920	2.472						
113.500	9.218	239.404	-0.117	7.8963643567E+003	8.1410954165E+002	2.5236050011E+002	0.477
4.738	2.575						
113.530	9.227	239.401	-0.105	7.9039319372E+003	8.1531395589E+002	2.5228671592E+002	0.477
4.730	2.577						
115.008	9.686	239.246	-0.104	8.2793260958E+003	8.7618035234E+002	2.5973180162E+002	0.494
4.209	2.662						
115.493	9.839	239.196	-0.087	8.4061926651E+003	8.9718864161E+002	2.5479483100E+002	0.500
4.024	2.682						
116.971	10.173	239.075	-0.082	8.7520447276E+003	9.5606473692E+002	2.3405990220E+002	0.517
3.470	2.704						
117.250	10.237	239.053	-0.067	8.8173040986E+003	9.6731583281E+002	2.3343867546E+002	0.521
3.379	2.706						
118.728	10.597	238.957	-0.059	9.1573693951E+003	1.0284365858E+003	2.3158897211E+002	0.538
2.913	2.662						
120.206	10.974	238.877	-0.053	9.5019469886E+003	1.0927003718E+003	2.2832482417E+002	0.556
2.531	2.577						
120.267	10.990	238.874	-0.043	9.5158372330E+003	1.0953434528E+003	2.2796189149E+002	0.557
2.517	2.573						
121.000	11.123	238.843	-0.032	9.6814333436E+003	1.1271335535E+003	2.2110604093E+002	0.567
2.367	2.521						
122.478	11.414	238.803	-0.019	9.9937614312E+003	1.1896378614E+003	2.0391651800E+002	0.585
2.134	2.394						
123.956	11.730	238.788	-0.009	1.0284268586E+004	1.2502509402E+003	1.9345885820E+002	0.601
1.965	2.256						
124.470	11.843	238.786	0.008	1.0383046616E+004	1.2712363959E+003	1.8465781282E+002	0.607
1.917	2.208						
125.948	12.065	238.803	0.018	1.0623091328E+004	1.3246800836E+003	1.5455908545E+002	0.622
1.821	2.078						
127.000	12.238	238.831	0.032	1.0779840940E+004	1.3611262918E+003	1.4516683553E+002	0.632
1.773	1.988						
128.478	12.495	238.884	0.037	1.0986498499E+004	1.4107402714E+003	1.2327891414E+002	0.644
1.721	1.868						
129.000	12.589	238.905	0.042	1.1047787027E+004	1.4260255276E+003	1.1580081119E+002	0.647
1.709	1.830						
129.133	12.613	238.911	0.055	1.1063185898E+004	1.4298961563E+003	1.1564952546E+002	0.648
1.706	1.821						
130.612	12.797	238.994	0.061	1.1238531036E+004	1.4755099387E+003	1.1281734753E+002	0.661
1.680	1.713						
132.090	12.995	239.092	0.069	1.1396706074E+004	1.5184369068E+003	9.7856497857E+001	0.671
1.666	1.617						
133.000	13.124	239.159	0.077	1.1480649798E+004	1.5423144167E+003	9.0875003439E+001	0.677
1.664	1.563						
134.235	13.306	239.257	0.085	1.1590595766E+004	1.5743131212E+003	8.7248664838E+001	0.684
1.665	1.495						
135.713	13.464	239.389	0.090	1.1716372947E+004	1.6120508635E+003	7.9535037034E+001	0.694
1.666	1.418						
137.191	13.624	239.522	0.090	1.1825723963E+004	1.6456639477E+003	6.7936838275E+001	0.703
1.667	1.352						
137.395	13.646	239.540	0.087	1.1839417551E+004	1.6499146962E+003	6.6541503119E+001	0.704
1.667	1.344						
138.873	13.801	239.669	0.085	1.1931766639E+004	1.6787279104E+003	5.8088641856E+001	0.710
1.665	1.291						
140.351	13.950	239.791	0.082	1.2011144102E+004	1.7036369718E+003	4.5538322617E+001	0.714
1.661	1.248						

140.647	13.978	239.814	0.077	1.2024115467E+004	1.7077280903E+003	4.3577411240E+001	0.714	1.660	1.240
141.790	14.063	239.902	0.076	1.2072479036E+004	1.7229703855E+003	4.0310727893E+001	0.716	1.653	1.213
143.268	14.170	240.014	0.075	1.2128258142E+004	1.7406425346E+003	3.3903125290E+001	0.718	1.639	1.182
143.395	14.179	240.023	0.072	1.2132517287E+004	1.7419992735E+003	3.3401996341E+001	0.718	1.638	1.180
144.873	14.280	240.129	0.072	1.2178924576E+004	1.7568369274E+003	3.0669592045E+001	0.719	1.618	1.154
145.000	14.289	240.139	0.076	1.2182807346E+004	1.7581005038E+003	3.0360978131E+001	0.719	1.616	1.151
146.206	14.377	240.231	0.078	1.2216594633E+004	1.7692313973E+003	2.7917246473E+001	0.720	1.592	1.131
146.710	14.405	240.273	0.083	1.2230647888E+004	1.7740141978E+003	2.7125667211E+001	0.720	1.581	1.122
148.188	14.485	240.396	0.083	1.2267498832E+004	1.7869915191E+003	2.1971063938E+001	0.722	1.548	1.098
149.635	14.563	240.517	0.093	1.2295096464E+004	1.7976870088E+003	1.7000879468E+001	0.722	1.513	1.076
151.113	14.670	240.667	0.103	1.2317095277E+004	1.8081188461E+003	1.2149161509E+001	0.722	1.469	1.054
151.361	14.691	240.694	0.106	1.2319997682E+004	1.8097862472E+003	1.0828406808E+001	0.723	1.460	1.050
152.840	14.760	240.849	0.099	1.2328421412E+004	1.8173312224E+003	2.9587824614E+000	0.723	1.413	1.031
154.270	14.812	240.983	0.083	1.2328860754E+004	1.8228471583E+003	-2.8095331552E+000	0.722	1.371	1.014
155.748	14.834	241.090	0.073	1.2319947332E+004	1.8258884286E+003	-1.0097721483E+001	0.721	1.334	1.001
156.243	14.841	241.126	0.085	1.2314279686E+004	1.8261764355E+003	-1.1903208431E+001	0.720	1.322	0.998
157.270	14.844	241.219	0.090	1.2301104016E+004	1.8262271995E+003	-1.5202307553E+001	0.719	1.301	0.993
158.748	14.849	241.352	0.090	1.2273578968E+004	1.8239486297E+003	-1.9917542234E+001	0.716	1.275	0.987
160.226	14.854	241.485	0.090	1.2242222095E+004	1.8203447569E+003	-2.4761073366E+001	0.713	1.252	0.984
160.270	14.854	241.489	0.067	1.2241135066E+004	1.8202000662E+003	-2.4857212059E+001	0.713	1.251	0.984
161.231	14.833	241.552	0.069	1.2217443772E+004	1.8168818957E+003	-2.4722664834E+001	0.711	1.237	0.983
161.480	14.825	241.573	0.083	1.2211272799E+004	1.8159943429E+003	-2.6102502661E+001	0.711	1.234	0.983
161.670	14.818	241.589	0.083	1.2206115828E+004	1.8152230843E+003	-2.7501255159E+001	0.711	1.231	0.982
162.690	14.785	241.673	0.094	1.2176097077E+004	1.8103833606E+003	-3.0914543966E+001	0.709	1.220	0.983
163.845	14.771	241.792	0.091	1.2138449385E+004	1.8038378786E+003	-3.4660079414E+001	0.705	1.208	0.984
165.000	14.727	241.882	0.084	1.2096032293E+004	1.7960051389E+003	-4.3057202444E+001	0.700	1.197	0.986
166.046	14.702	241.977	0.091	1.2045011260E+004	1.7859125114E+003	-5.0439616039E+001	0.696	1.187	0.990
166.750	14.665	242.042	0.094	1.2008705254E+004	1.7786154661E+003	-5.4185912714E+001	0.694	1.181	0.993
168.228	14.594	242.184	0.094	1.1920434255E+004	1.7600487011E+003	-5.8564222578E+001	0.687	1.171	1.001
168.500	14.579	242.207	0.095	1.1904570782E+004	1.7566333515E+003	-5.9660732122E+001	0.686	1.170	1.003
169.978	14.509	242.350	0.100	1.1805866405E+004	1.7350694801E+003	-7.1619773551E+001	0.679	1.163	1.014
171.055	14.466	242.462	0.102	1.1724974981E+004	1.7171297628E+003	-7.6549151551E+001	0.673	1.158	1.024
172.533	14.365	242.612	0.093	1.1608978868E+004	1.6909250130E+003	-7.4858294052E+001	0.664	1.156	1.040
174.011	14.238	242.736	0.084	1.1503672566E+004	1.6666493809E+003	-7.2041152576E+001	0.657	1.156	1.055
175.489	14.110	242.859	0.083	1.1396004725E+004	1.6417389565E+003	-7.3552173837E+001	0.649	1.158	1.072
175.850	14.078	242.889	0.080	1.1369390218E+004	1.6355797496E+003	-7.1695422542E+001	0.647	1.159	1.076
176.293	14.037	242.923	0.090	1.1338736371E+004	1.6284853397E+003	-7.2415225750E+001	0.644	1.160	1.081
177.771	13.891	243.061	0.094	1.1215855122E+004	1.5999821562E+003	-8.4391913959E+001	0.636	1.166	1.101
178.060	13.863	243.089	0.102	1.1191402600E+004	1.5943095438E+003	-8.5613923553E+001	0.634	1.167	1.105
179.538	13.731	243.241	0.103	1.1057473398E+004	1.5632535257E+003	-8.9892476877E+001	0.624		

1.174	1.127						
181.016	13.600	243.393	0.107	1.0925654863E+004	1.5329286588E+003	-9.2096276728E+001	0.614
1.182	1.149						
182.106	13.512	243.515	0.112	1.0822920045E+004	1.5095421043E+003	-9.3525459663E+001	0.607
1.189	1.167						
183.200	13.397	243.637	0.118	1.0721427106E+004	1.4866246211E+003	-9.5499124129E+001	0.600
1.195	1.184						
184.678	13.257	243.818	0.126	1.0574874679E+004	1.4540034636E+003	-1.0156940151E+002	0.589
1.204	1.208						
185.850	13.156	243.972	0.145	1.0453598693E+004	1.4274885879E+003	-1.1030835247E+002	0.580
1.212	1.228						
187.328	13.067	244.203	0.156	1.0277835260E+004	1.3904355563E+003	-1.0014625675E+002	0.568
1.222	1.254						
187.329	13.066	244.203	0.151	1.0277733550E+004	1.3904145729E+003	-1.0014287193E+002	0.568
1.222	1.254						
188.500	12.956	244.380	0.153	1.0147649817E+004	1.3640689074E+003	-1.1324178139E+002	0.560
1.228	1.273						
188.920	12.918	244.446	0.151	1.0099765996E+004	1.3545485347E+003	-1.1219849208E+002	0.556
1.231	1.280						
190.398	12.775	244.666	0.152	9.9433397079E+003	1.3242734762E+003	-1.0690689933E+002	0.547
1.238	1.300						
191.620	12.664	244.855	0.160	9.8116232448E+003	1.2994574715E+003	-1.1186556695E+002	0.539
1.243	1.316						
192.328	12.609	244.974	0.168	9.7307407666E+003	1.2845191672E+003	-1.1375307447E+002	0.534
1.245	1.325						
193.806	12.448	245.222	0.167	9.5640433102E+003	1.2543797790E+003	-1.1065857351E+002	0.525
1.250	1.343						
194.740	12.344	245.377	0.168	9.4619654168E+003	1.2362974817E+003	-1.0967753795E+002	0.519
1.253	1.353						
196.218	12.186	245.628	0.172	9.2990136466E+003	1.2078021935E+003	-1.1837629794E+002	0.511
1.256	1.367						
196.390	12.170	245.661	0.196	9.2785072081E+003	1.2042459772E+003	-1.2086589786E+002	0.510
1.256	1.368						
196.870	12.133	245.756	0.195	9.2184219820E+003	1.1938496037E+003	-1.2023792280E+002	0.506
1.257	1.372						
197.130	12.110	245.805	0.198	9.1879108347E+003	1.1886107870E+003	-1.1847065676E+002	0.505
1.257	1.374						
198.608	11.948	246.099	0.198	9.0051883210E+003	1.1573515512E+003	-1.1777480443E+002	0.495
1.257	1.384						
199.000	11.902	246.174	0.218	8.9595892365E+003	1.1495965445E+003	-1.2010307514E+002	0.493
1.257	1.386						
200.478	11.779	246.506	0.231	8.7604591838E+003	1.1159510982E+003	-1.3772643130E+002	0.481
1.255	1.391						
201.956	11.674	246.858	0.238	8.5524307215E+003	1.0810116805E+003	-1.3872545692E+002	0.469
1.252	1.395						
202.114	11.663	246.895	0.244	8.5306009487E+003	1.0773541112E+003	-1.3929029676E+002	0.468
1.252	1.395						
203.135	11.567	247.146	0.253	8.3832145125E+003	1.0527531461E+003	-1.4691943195E+002	0.460
1.249	1.396						
204.613	11.446	247.527	0.269	8.1605254701E+003	1.0158057793E+003	-1.5618152725E+002	0.447
1.243	1.395						
206.091	11.356	247.940	0.283	7.9214974833E+003	9.7649994543E+002	-1.6494764365E+002	0.433
1.237	1.391						
206.935	11.313	248.184	0.295	7.7807087862E+003	9.5352075436E+002	-1.7569782416E+002	0.425
1.232	1.388						
207.270	11.293	248.288	0.271	7.7207314674E+003	9.4380922388E+002	-1.7379916971E+002	0.422
1.230	1.387						
208.748	11.131	248.675	0.258	7.4992670310E+003	9.0839523106E+002	-1.4686133057E+002	0.410
1.222	1.379						
210.226	10.957	249.050	0.253	7.2865675912E+003	8.7481254192E+002	-1.3056770605E+002	0.399
1.214	1.371						
210.280	10.950	249.062	0.232	7.2795801004E+003	8.7372008628E+002	-1.3015436905E+002	0.399
1.214	1.370						
210.635	10.901	249.145	0.247	7.2332086560E+003	8.6648484532E+002	-1.3261672063E+002	0.397
1.212	1.368						
211.962	10.741	249.478	0.277	7.0472767550E+003	8.3759507577E+002	-1.5085504944E+002	0.387
1.203	1.359						
213.441	10.593	249.921	0.302	6.8065377574E+003	8.0051355760E+002	-1.6477258487E+002	0.375
1.192	1.345						
214.000	10.542	250.094	0.304	6.7139561690E+003	7.8636209311E+002	-1.6374857485E+002	0.370
1.187	1.339						
215.478	10.396	250.539	0.304	6.4787302035E+003	7.5057109919E+002	-1.6259871820E+002	0.357
1.175	1.324						
215.890	10.360	250.668	0.334	6.4113653163E+003	7.4037887676E+002	-1.6673827633E+002	0.353
1.172	1.320						
217.247	10.280	251.130	0.343	6.1708567930E+003	7.0413478921E+002	-1.7915026538E+002	0.339
1.160	1.305						
217.780	10.239	251.316	0.342	6.0750097094E+003	6.8977974994E+002	-1.7846259612E+002	0.334
1.155	1.299						

219.258	10.114	251.818	0.339	5.8171752852E+003	6.5145551982E+002	-1.7350879267E+002	0.319
1.143	1.285						
220.390	10.016	252.201	0.336	5.6215876363E+003	6.2262394082E+002	-1.7176869748E+002	0.308
1.134	1.275						
221.868	9.882	252.694	0.324	5.3696843484E+003	5.8599579680E+002	-1.6345332492E+002	0.293
1.125	1.266						
223.000	9.754	253.046	0.309	5.1907154296E+003	5.6045562535E+002	-1.5231786590E+002	0.283
1.120	1.261						
223.146	9.735	253.089	0.296	5.1686328746E+003	5.5734010301E+002	-1.5150466002E+002	0.282
1.119	1.261						
223.750	9.636	253.268	0.318	5.0772437279E+003	5.4448938151E+002	-1.6046822735E+002	0.277
1.117	1.259						
224.500	9.543	253.520	0.318	4.9482927197E+003	5.2653535236E+002	-1.6729297251E+002	0.270
1.115	1.259						
225.978	9.321	253.977	0.309	4.7145321515E+003	4.9444388911E+002	-1.5814447868E+002	0.259
1.113	1.261						
226.630	9.223	254.179	0.305	4.6114445514E+003	4.8042138001E+002	-1.5493551774E+002	0.253
1.113	1.263						
227.210	9.130	254.353	0.305	4.5232378969E+003	4.6859636984E+002	-1.5310084527E+002	0.249
1.114	1.265						
228.344	8.957	254.702	0.305	4.3472911694E+003	4.4518579188E+002	-1.5052966947E+002	0.240
1.115	1.272						
228.760	8.872	254.825	0.312	4.2854311891E+003	4.3703608937E+002	-1.5046344086E+002	0.237
1.116	1.275						
230.238	8.598	255.293	0.324	4.0545770210E+003	4.0705307202E+002	-1.5822420886E+002	0.225
1.123	1.289						
231.716	8.346	255.782	0.331	3.8176754119E+003	3.7676721199E+002	-1.5319487519E+002	0.213
1.132	1.308						
231.780	8.334	255.803	0.352	3.8079339559E+003	3.7552999705E+002	-1.5346535853E+002	0.213
1.133	1.309						
233.258	8.115	256.325	0.354	3.5613572348E+003	3.4451989268E+002	-1.6611474086E+002	0.199
1.145	1.331						
233.299	8.109	256.340	0.352	3.5546501453E+003	3.4368455736E+002	-1.6597618574E+002	0.199
1.145	1.332						
234.777	7.819	256.860	0.351	3.3157750826E+003	3.1425060331E+002	-1.4324603260E+002	0.186
1.160	1.358						
234.800	7.813	256.867	0.334	3.3124392571E+003	3.1384633489E+002	-1.4302188683E+002	0.186
1.160	1.358						
236.278	7.497	257.361	0.348	3.0948831106E+003	2.8779083856E+002	-1.5263515206E+002	0.175
1.176	1.386						
237.400	7.293	257.772	0.367	2.9190052173E+003	2.6706548740E+002	-1.5416512240E+002	0.166
1.190	1.409						
238.020	7.181	258.001	0.360	2.8243451794E+003	2.5609745728E+002	-1.5002573095E+002	0.161
1.198	1.423						
239.498	6.829	258.528	0.351	2.6120970326E+003	2.3191994158E+002	-1.3385051250E+002	0.151
1.217	1.454						
240.000	6.699	258.696	0.351	2.5465588673E+003	2.2458689858E+002	-1.3219699945E+002	0.148
1.223	1.464						
240.970	6.470	259.044	0.364	2.4152263500E+003	2.1003632300E+002	-1.3547386905E+002	0.141
1.234	1.483						
241.750	6.295	259.333	0.388	2.3095068551E+003	1.9844047964E+002	-1.3753620923E+002	0.136
1.243	1.498						
242.988	6.054	259.827	0.404	2.1353730567E+003	1.7953422207E+002	-1.3777660839E+002	0.127
1.257	1.522						
243.500	5.930	260.039	0.441	2.0653931224E+003	1.7208000447E+002	-1.3770161239E+002	0.123
1.262	1.530						
244.978	5.630	260.706	0.455	1.8569969136E+003	1.5013810047E+002	-1.3665547453E+002	0.113
1.273	1.551						
246.456	5.341	261.384	0.466	1.6614006603E+003	1.2993317896E+002	-1.3141032570E+002	0.102
1.279	1.564						
247.000	5.250	261.648	0.508	1.5901339099E+003	1.2268769070E+002	-1.3141149654E+002	0.098
1.279	1.566						
248.268	5.076	262.304	0.522	1.4225593693E+003	1.0589542970E+002	-1.2872435191E+002	0.087
1.277	1.568						
249.746	4.816	263.081	0.540	1.2382760118E+003	8.7845201204E+001	-1.2372218504E+002	0.075
1.271	1.564						
251.224	4.597	263.900	0.556	1.0568013906E+003	7.0525821720E+001	-1.1749515548E+002	0.062
1.262	1.556						
252.500	4.414	264.613	0.583	9.1267661717E+002	5.7390081049E+001	-1.1210457088E+002	0.052
1.255	1.549						
253.978	4.269	265.506	0.584	7.4839948421E+002	4.3327073496E+001	-9.9987363276E+001	0.044
1.242	1.534						
254.392	4.190	265.717	0.556	7.0834510266E+002	3.9787311377E+001	-9.7962187308E+001	0.044
1.238	1.529						
255.870	3.932	266.558	0.542	5.5776252098E+002	2.7048745843E+001	-9.2540901789E+001	0.044
1.224	1.512						
257.348	3.594	267.321	0.525	4.3476786850E+002	1.7809701058E+001	-8.1462642555E+001	0.044
1.215	1.503						
258.200	3.421	267.781	0.593	3.6621295708E+002	1.3203804443E+001	-8.2118900251E+001	0.044

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  1.215       1.503
     259.678       3.242     268.702       0.610   2.4056548508E+002   5.8695493047E+000  -7.6760306617E+001       0.044
  1.238       1.528
     261.156       3.024     269.583       0.545   1.3928765192E+002   1.6166421699E+000  -5.6995666182E+001       0.044
  1.304       1.605
     262.634       2.654     270.314       0.443   7.2070080217E+001   2.8348540547E-001  -3.0725662483E+001       0.044
  1.381       1.698
     263.250       2.393     270.510       0.308   5.6937099274E+001   1.8485793940E-001  -9.0815305233E+000       0.044
  1.403       1.724
     263.288       2.370     270.515       0.308   5.6629152536E+001   1.8394252240E-001  -8.8817195439E+000       0.044
  1.394       1.726

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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)
76.960	0.790	0.921	-30.936	-1.825	-1.680	38.004	34.990
77.750	1.478	1.723	-30.936	-7.066	-12.176	38.068	65.602
79.228	1.272	1.483	-30.936	-13.420	-19.899	38.472	57.047
80.500	1.478	1.723	-30.936	-19.388	-33.412	39.287	67.703
81.978	0.772	0.900	-30.936	-23.999	-21.596	39.768	35.786
82.750	1.478	1.723	-30.936	-28.610	-49.303	40.214	69.300
84.228	0.478	0.558	-30.936	-32.619	-18.186	40.903	22.804
84.706	0.294	0.342	-30.936	-34.293	-11.740	103.546	35.449
85.000	1.478	1.723	-30.936	-39.341	-67.797	103.934	179.108
86.478	1.062	1.238	-30.936	-46.824	-57.966	106.006	131.232
87.540	0.460	0.536	-30.936	-51.307	-27.516	106.560	57.147
88.000	1.478	1.723	-30.936	-57.020	-98.262	105.703	182.158
89.478	1.478	1.723	-30.936	-65.733	-113.277	107.224	184.778
90.956	0.044	0.051	-30.936	-70.218	-3.579	107.148	5.461
91.000	1.478	1.723	-30.936	-75.234	-129.650	108.448	186.887
92.478	1.478	1.723	-30.936	-85.006	-146.491	109.306	188.366
93.956	0.544	0.634	-30.936	-91.690	-58.121	111.035	70.384
94.500	1.478	1.723	-30.936	-98.374	-169.526	111.325	191.846
95.978	0.082	0.095	-30.936	-103.530	-9.869	110.906	10.572
96.060	1.478	1.701	-29.663	-105.370	-179.240	112.316	191.057
97.538	0.462	0.532	-29.663	-111.364	-59.203	113.502	60.340
98.000	0.960	1.105	-29.663	-115.753	-127.881	113.393	125.274
98.960	1.478	1.701	-29.663	-123.275	-209.699	115.757	196.909
100.438	0.062	0.071	-29.663	-128.027	-9.114	117.660	8.376
100.500	1.478	1.701	-29.663	-132.778	-225.864	119.124	202.637
101.978	1.022	1.176	-29.663	-140.491	-165.213	120.400	141.587
103.000	1.478	1.701	-29.663	-148.442	-252.508	122.911	209.080
104.478	0.449	0.516	-29.663	-154.695	-79.874	126.098	65.109
104.927	1.478	1.654	-26.665	-147.997	-244.796	123.322	203.981
106.405	0.595	0.666	-26.665	-153.679	-102.329	126.192	84.027
107.000	1.478	1.654	-26.665	-159.361	-263.592	124.068	205.215
108.478	1.478	1.654	-26.665	-167.463	-276.993	123.504	204.283
109.956	0.801	0.896	-26.665	-173.708	-155.658	124.126	111.228
110.757	0.243	0.263	-22.578	-152.826	-40.207	121.186	31.883
111.000	1.250	1.354	-22.578	-156.025	-211.220	119.784	162.159
112.250	1.250	1.354	-22.578	-161.405	-218.504	118.880	160.935
113.500	0.030	0.032	-22.578	-164.153	-5.333	118.818	3.860
113.530	1.478	1.601	-22.578	-167.055	-267.427	119.301	190.982
115.008	0.485	0.525	-22.578	-170.831	-89.715	120.307	63.182
115.493	1.478	1.547	-17.153	-132.558	-205.061	114.841	177.653
116.971	0.279	0.292	-17.153	-134.668	-39.293	115.036	33.565
117.250	1.478	1.547	-17.153	-136.778	-211.589	115.407	178.528
118.728	1.478	1.547	-17.153	-140.329	-217.082	116.199	179.754
120.206	0.061	0.064	-17.153	-142.177	-9.060	116.174	7.403
120.267	0.733	0.751	-12.630	-101.282	-76.063	112.238	84.291
121.000	1.478	1.515	-12.630	-102.898	-155.869	111.929	169.550
122.478	1.478	1.515	-12.630	-105.098	-159.203	111.568	169.003

123.956	0.513	0.526	-12.630	-106.581	-56.078	111.531	58.683
124.470	1.478	1.492	-7.871	-57.861	-86.341	106.484	158.896
125.948	1.052	1.062	-7.871	-58.669	-62.315	106.213	112.814
127.000	1.478	1.492	-7.871	-59.476	-88.750	106.020	158.203
128.478	0.522	0.527	-7.871	-60.114	-31.669	105.253	55.449
129.000	0.133	0.135	-7.871	-60.323	-8.127	105.201	14.174
129.133	1.478	1.482	-3.890	-15.195	-22.513	102.761	152.247
130.612	1.478	1.482	-3.890	-15.383	-22.790	102.599	152.006
132.090	0.910	0.912	-3.890	-15.534	-14.173	102.347	93.377
133.000	1.235	1.237	-3.890	-15.662	-19.382	102.319	126.620
134.235	1.478	1.478	-1.029	18.651	27.574	100.606	148.735
135.713	1.478	1.478	-1.029	18.808	27.806	100.540	148.637
137.191	0.204	0.204	-1.029	18.897	3.857	100.495	20.511
137.395	1.478	1.478	-1.029	18.987	28.070	100.463	148.523
138.873	1.478	1.478	-1.029	19.143	28.301	100.400	148.430
140.351	0.295	0.295	-1.029	19.238	5.684	100.329	29.645
140.647	1.143	1.143	0.180	34.403	39.333	99.944	114.266
141.790	1.478	1.478	0.180	34.625	51.182	99.950	147.741
143.268	0.127	0.127	0.180	34.762	4.410	99.955	12.680
143.395	1.478	1.478	0.180	34.899	51.586	99.958	147.753
144.873	0.127	0.127	0.180	35.036	4.445	99.959	12.681
145.000	1.206	1.206	0.180	35.119	42.348	99.962	120.538
146.206	0.504	0.504	1.668	54.162	27.318	99.635	50.254
146.710	1.478	1.479	1.668	54.308	80.309	99.662	147.378
148.188	1.447	1.447	1.668	54.523	78.920	99.716	144.336
149.635	1.478	1.479	1.668	54.738	80.945	99.729	147.475
151.113	0.248	0.248	1.668	54.865	13.628	99.742	24.774
151.361	1.478	1.481	3.298	75.914	112.397	99.612	147.486
152.840	1.430	1.433	3.298	76.122	109.069	99.707	142.861
154.270	1.478	1.481	3.298	76.294	112.960	99.844	147.828
155.748	0.495	0.495	3.298	76.385	37.844	99.956	49.521
156.243	1.027	1.031	4.980	97.988	101.040	99.994	103.108
157.270	1.478	1.484	4.980	98.038	145.463	100.176	148.636
158.748	1.478	1.484	4.980	98.097	145.551	100.279	148.788
160.226	0.044	0.044	4.980	98.127	4.306	100.378	4.405
160.270	0.961	0.964	4.980	98.076	94.563	100.395	96.799
161.231	0.249	0.251	6.591	118.387	29.729	100.536	25.246
161.480	0.190	0.191	6.591	118.338	22.634	100.612	19.243
161.670	1.020	1.027	6.591	118.203	121.369	100.715	103.413
162.690	1.155	1.163	6.591	118.210	137.441	100.854	117.262
163.845	1.155	1.163	6.591	118.452	137.722	101.022	117.457
165.000	1.046	1.053	6.591	118.471	124.712	101.455	106.799
166.046	0.704	0.712	8.181	138.064	98.236	101.930	72.525
166.750	1.478	1.493	8.181	137.699	205.632	102.339	152.828
168.228	0.272	0.275	8.181	137.406	37.739	102.340	28.108
168.500	1.478	1.493	8.181	137.009	204.602	102.717	153.391
169.978	1.076	1.088	8.181	136.401	148.338	103.104	112.126
171.055	1.478	1.499	9.638	153.227	229.734	103.869	155.732
172.533	1.478	1.499	9.638	152.268	228.296	103.584	155.305
174.011	1.478	1.499	9.638	151.309	226.859	103.678	155.445
175.489	0.361	0.366	9.638	150.713	55.185	103.724	37.979
175.850	0.443	0.449	9.638	150.452	67.597	103.495	46.500
176.293	1.478	1.505	10.883	164.099	247.003	104.727	157.636
177.771	0.289	0.294	10.883	163.378	48.065	104.813	30.836
178.060	1.478	1.505	10.883	162.658	244.835	105.150	158.273
179.538	1.478	1.505	10.883	161.453	243.021	105.029	158.091
181.016	1.090	1.110	10.883	160.407	178.053	105.259	116.839
182.106	1.094	1.119	12.242	174.363	195.132	105.741	118.336
183.200	1.478	1.513	12.242	173.191	261.957	106.046	160.399
184.678	1.172	1.199	12.242	172.087	206.354	106.199	127.346
185.850	1.478	1.513	12.242	170.984	258.619	106.868	161.641
187.328	0.001	0.001	12.242	170.368	0.177	105.660	0.110
187.329	1.171	1.206	13.808	186.092	224.368	106.895	128.882
188.500	0.420	0.432	13.808	185.278	80.133	106.946	46.254
188.920	1.478	1.522	13.808	184.444	280.748	106.276	161.766
190.398	1.222	1.258	13.808	183.258	230.579	106.224	133.653
191.620	0.708	0.729	13.808	182.411	133.012	106.465	77.633
192.328	1.478	1.534	15.483	197.755	303.317	106.936	164.018
193.806	0.934	0.969	15.483	196.369	190.262	106.587	103.272
194.740	1.478	1.534	15.483	195.049	299.167	106.557	163.438
196.218	0.172	0.178	15.483	194.174	34.627	107.039	19.088
196.390	0.480	0.498	15.483	193.829	96.541	107.367	53.477
196.870	0.260	0.269	15.483	193.437	52.091	106.866	28.778
197.130	1.478	1.547	17.138	207.571	321.076	107.873	166.861
198.608	0.392	0.411	17.138	206.308	84.703	107.359	44.078
199.000	1.478	1.547	17.138	205.451	317.796	108.474	167.791
200.478	1.478	1.547	17.138	204.266	315.964	108.800	168.295
201.956	0.158	0.165	17.138	203.610	33.581	108.640	17.918
202.114	1.021	1.079	18.775	217.117	234.161	109.707	118.319

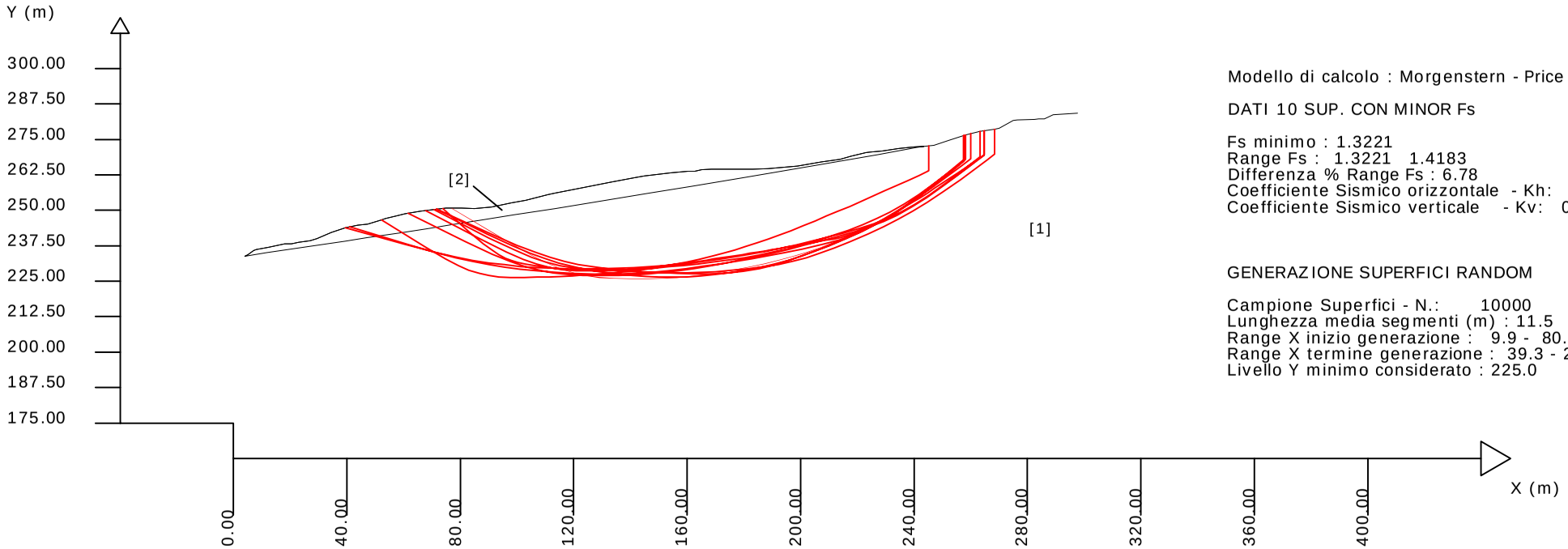
203.135	1.478	1.561	18.775	215.767	336.860	110.071	171.845
204.613	1.478	1.561	18.775	214.171	334.368	110.714	172.848
206.091	0.844	0.892	18.775	212.917	189.818	110.969	98.930
206.935	0.335	0.357	20.364	224.988	80.311	112.518	40.164
207.270	1.478	1.577	20.364	223.465	352.334	110.334	173.962
208.748	1.478	1.577	20.364	220.881	348.260	109.800	173.120
210.226	0.054	0.057	20.364	219.542	12.579	108.772	6.232
210.280	0.355	0.379	20.364	219.185	82.998	108.791	41.196
210.635	1.327	1.416	20.364	217.716	308.270	109.388	154.885
211.962	1.478	1.592	21.798	225.571	359.104	111.436	177.404
213.441	0.559	0.603	21.798	223.475	134.645	111.532	67.199
214.000	1.478	1.592	21.798	222.034	353.473	111.038	176.770
215.478	0.412	0.444	21.798	220.927	97.998	111.281	49.362
215.890	1.357	1.462	21.798	219.891	321.435	112.173	163.974
217.247	0.533	0.579	23.000	226.841	131.282	112.814	65.290
217.780	1.478	1.606	23.000	225.353	361.871	112.330	180.379
219.258	1.132	1.230	23.000	223.392	274.684	112.113	137.855
220.390	1.478	1.606	23.000	221.430	355.572	111.784	179.502
221.868	1.132	1.230	23.000	219.469	269.860	110.731	136.155
223.000	0.146	0.158	23.000	218.462	34.577	110.169	17.437
223.146	0.604	0.665	24.689	227.890	151.572	110.670	73.608
223.750	0.750	0.825	24.689	226.168	186.693	112.012	92.461
224.500	1.478	1.627	24.689	222.974	362.748	110.894	180.409
225.978	0.652	0.717	24.689	219.745	157.655	110.794	79.488
226.630	0.580	0.638	24.689	217.878	139.083	110.230	70.366
227.210	1.134	1.249	24.689	215.280	268.792	110.355	137.786
228.344	0.416	0.465	26.652	223.170	103.767	110.395	51.330
228.760	1.478	1.654	26.652	220.089	363.998	110.752	183.169
230.238	1.478	1.654	26.652	215.405	356.251	110.861	183.349
231.716	0.064	0.071	26.652	212.961	15.182	110.293	7.863
231.780	1.478	1.654	26.652	210.518	348.169	111.120	183.778
233.258	0.040	0.045	26.652	208.112	9.403	110.965	5.014
233.299	1.478	1.686	28.736	214.480	361.561	111.099	187.286
234.777	0.023	0.027	28.736	211.671	5.633	109.657	2.918
234.800	1.478	1.686	28.736	208.672	351.769	109.825	185.138
236.278	1.122	1.279	28.736	203.473	260.329	110.297	141.117
237.400	0.620	0.707	28.736	199.990	141.367	109.863	77.659
238.020	1.478	1.720	30.740	202.504	348.261	109.501	188.317
239.498	0.502	0.584	30.740	197.958	115.631	108.484	63.367
240.000	0.970	1.129	30.740	194.257	219.232	108.713	122.690
240.970	0.780	0.908	30.740	189.659	172.117	108.635	98.587
241.750	1.238	1.440	30.740	184.357	265.450	108.874	156.764
242.988	0.512	0.612	33.189	186.093	113.950	108.811	66.628
243.500	1.478	1.766	33.189	180.424	318.678	108.991	192.509
244.978	1.478	1.766	33.189	172.180	304.119	108.279	191.251
246.456	0.544	0.650	33.189	166.543	108.203	108.071	70.214
247.000	1.268	1.515	33.189	162.987	246.874	108.024	163.622
248.268	1.478	1.806	35.070	161.700	292.035	107.593	194.316
249.746	1.478	1.806	35.070	156.114	281.946	107.285	193.760
251.224	1.276	1.559	35.070	150.909	235.298	106.400	165.899
252.500	1.478	1.806	35.070	145.696	263.131	105.915	191.286
253.978	0.413	0.505	35.070	142.110	71.796	105.323	53.211
254.392	1.478	1.842	36.648	140.268	258.423	105.457	194.288
255.870	1.478	1.842	36.648	133.937	246.759	103.958	191.526
257.348	0.852	1.062	36.648	128.947	136.945	103.423	109.838
258.200	1.478	1.842	36.648	123.372	227.295	103.142	190.023
259.678	1.478	1.842	36.648	115.873	213.478	101.822	187.591
261.156	1.478	1.842	36.648	108.373	199.660	100.571	185.287
262.634	0.616	0.767	36.648	103.061	79.073	100.101	76.802
263.250	0.038	0.047	36.648	101.380	4.788	100.015	4.723
263.288	1.478	1.861	37.413	97.013	180.539	100.079	186.246

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

Data : 10/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Morgenstern - Price (1965)

DATI 10 SUP. CON MINOR Fs

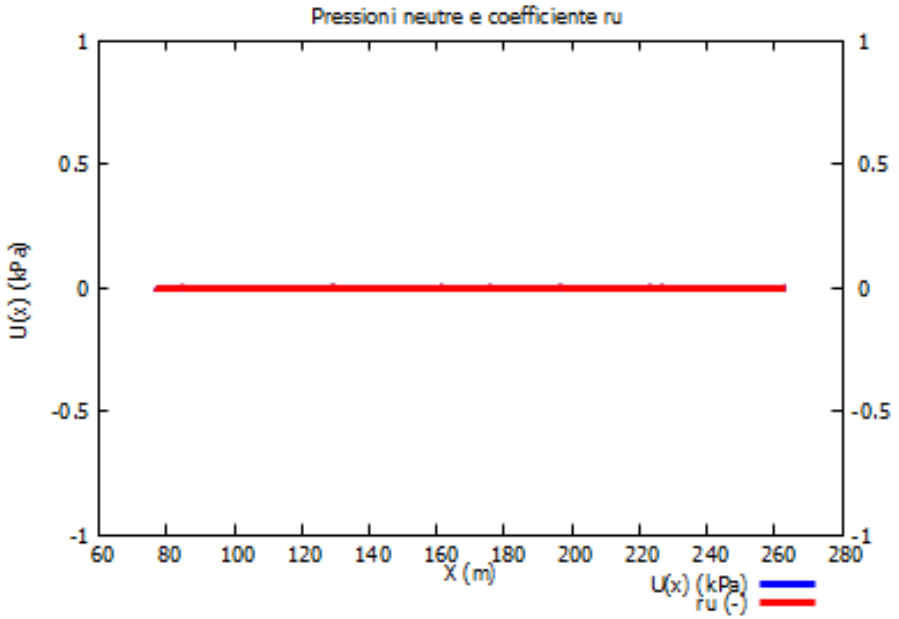
Fs minimo : 1.3221
Range Fs : 1.3221 1.4183
Differenza % Range Fs : 6.78
Coefficiente Sismico orizzontale - Kh: 0.0450
Coefficiente Sismico verticale - Kv: 0.0225

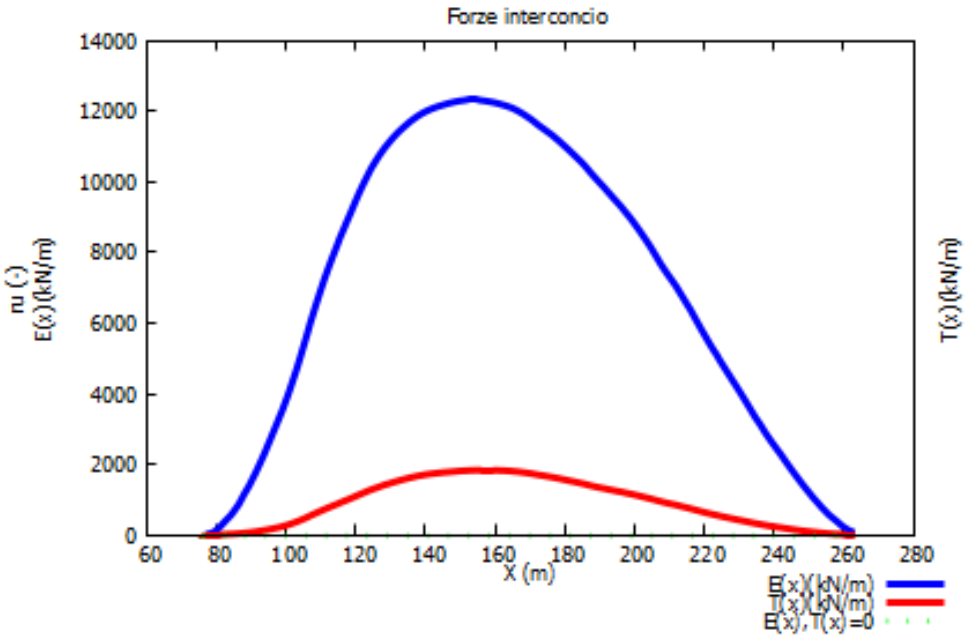
GENERAZIONE SUPERFICI RANDOM

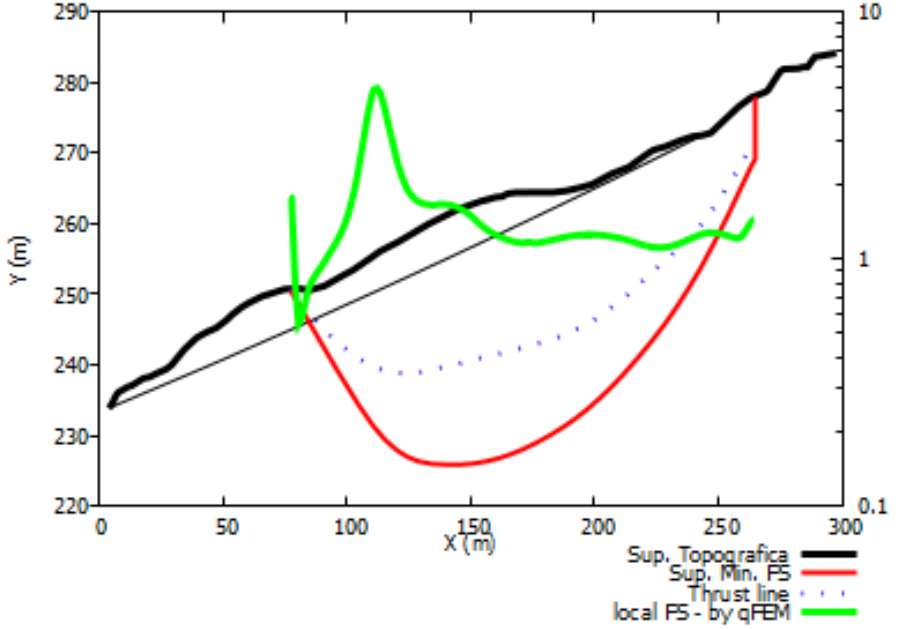
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 11.5
Range X inizio generazione : 9.9 - 80.0
Range X termine generazione : 39.3 - 291.9
Livello Y minimo considerato : 225.0

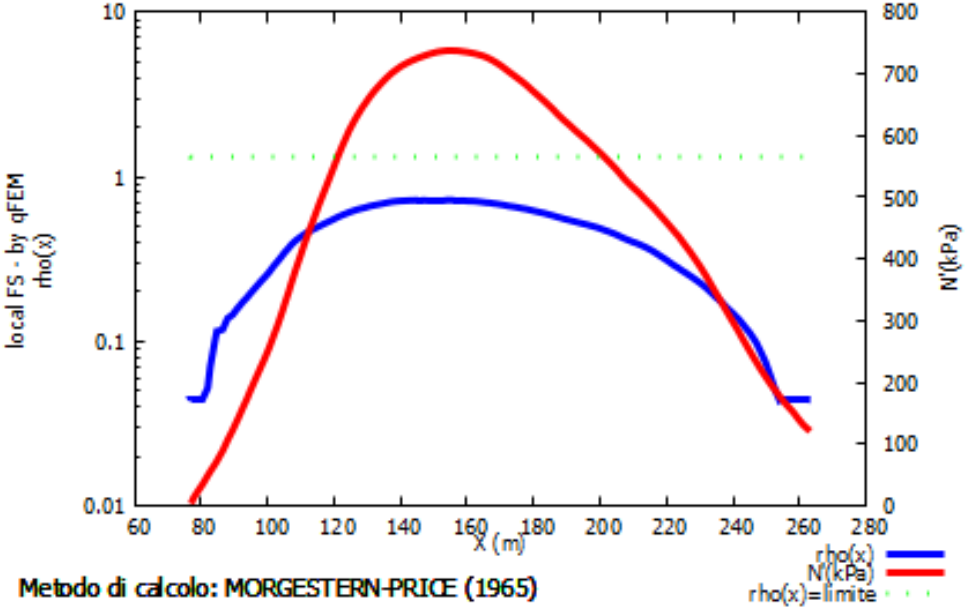
Parametri Geotecnici degli strati # ----------

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
2	0	0	38.00	18.00	20.00	0	0	0	0





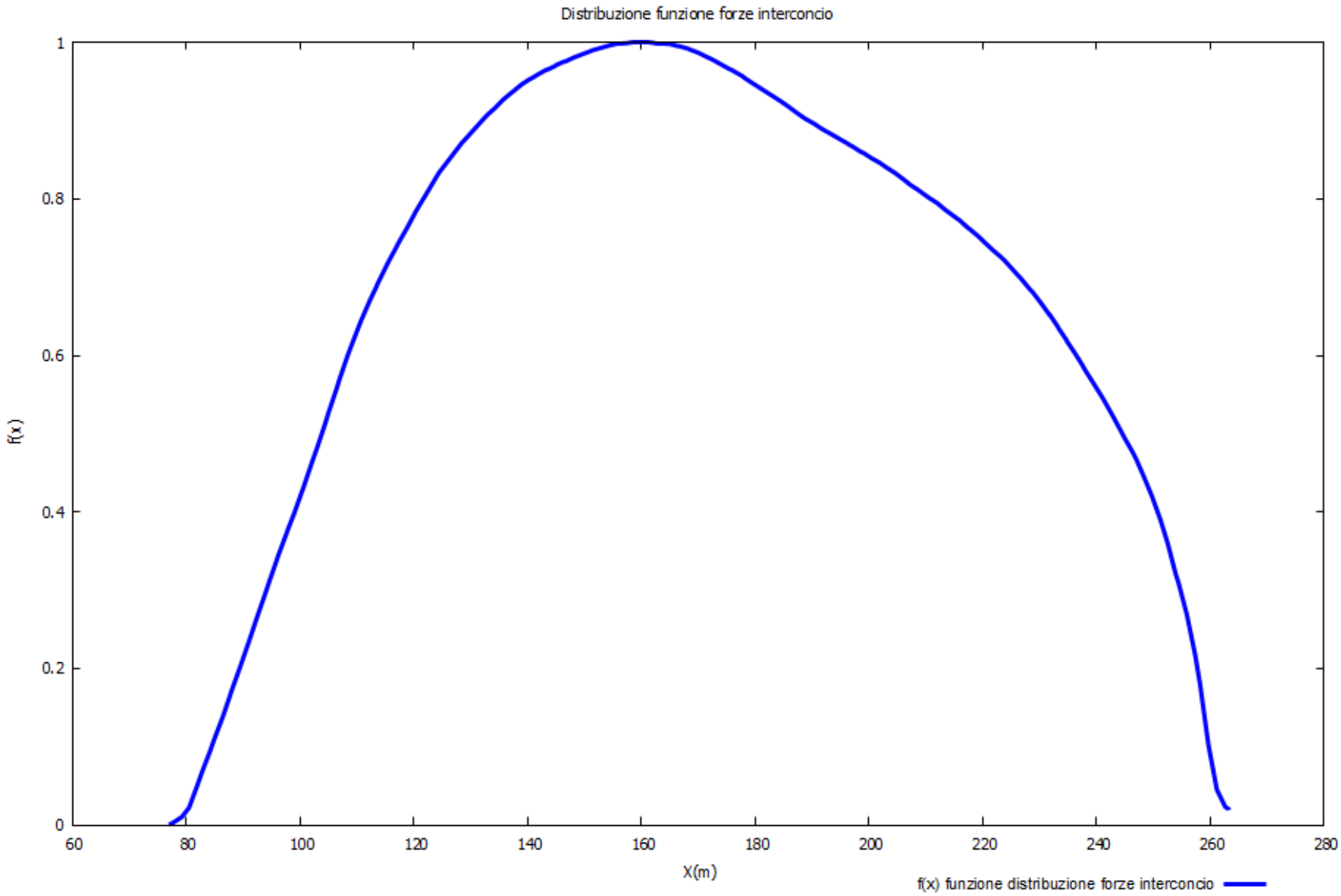


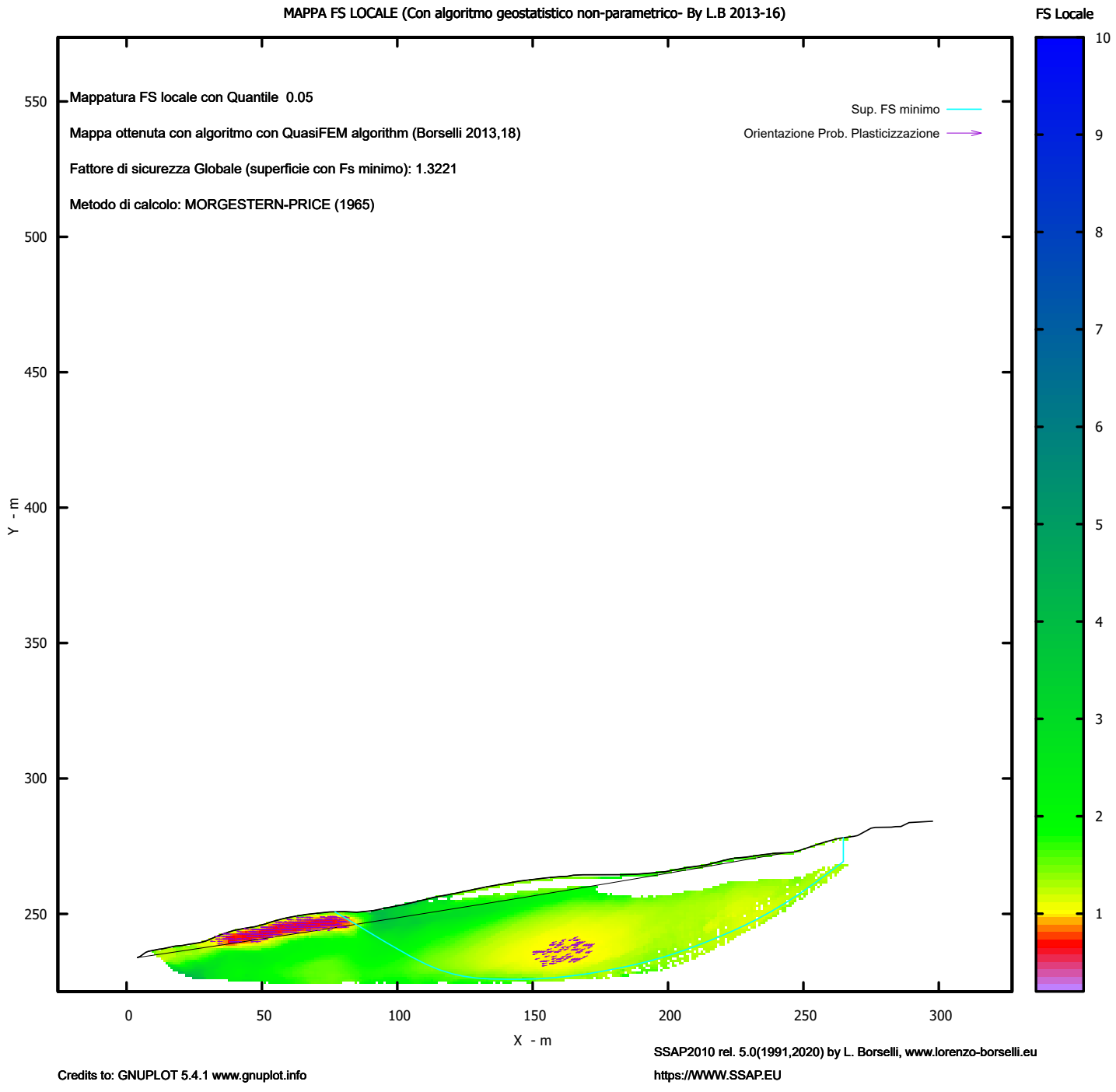


Metodo di calcolo: MORGESTERN-PRICE (1965)

SSAP2010 (versione 5.0 - 2020) - DISTRIBUZIONE FORZE e PRESSIONI

10/11/21 17:04




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): 1.3221
Metodo di calcolo: MORGESTERN-PRICE (1965)
Sup. FS minimo
Orientazione Prob. Plasticizzazione
Y - m
X - m
550
500
450
400
350
300
250
0
50
100
150
200
250
300
10
9
8
7
6
5
4
3
2
1
Credits to: GNUPLOT 5.4.1 www.gnuplot.info
SSAP2010 rel. 5.0(1991,2020) by L. Borselli, www.lorenzo-borselli.eu
https://WWW.SSAP.EU

Report elaborazioni

```
---------------------------------------------------------------------
    SSAP 5.0 - Slope Stability Analysis Program (1991,2020)
                          WWW.SSAP.EU
                        Build No. 11719
                             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: 12 settembre 2020
---------------------------------------------------------------------


    File report: C:\SSAP\CRACO\SERRACARUSOMOR\VERIFICA 1\NON DRENATA\MORG\MORG.txt
           Data: 10/11/2021
    Localita' :
    Descrizione:
 Modello pendio: NON DRENATAVERIFICA1.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

         4.00  233.86    4.00  233.86     -       -       -       -
         5.15  234.36   11.74  235.00     -       -       -       -
         7.00  235.72   27.88  237.41     -       -       -       -
         8.00  236.14   39.22  239.10     -       -       -       -
        12.00  236.93   47.17  240.30     -       -       -       -
        13.00  237.01   58.61  242.07     -       -       -       -
        18.00  238.09   68.23  243.55     -       -       -       -
        20.50  238.27   76.86  244.89     -       -       -       -
        23.00  238.73   87.54  246.55     -       -       -       -
        27.00  239.35   98.96  248.37     -       -       -       -
        29.31  239.96  113.53  250.69     -       -       -       -
        34.50  242.19  129.00  253.18     -       -       -       -
        39.50  243.85  146.71  256.07     -       -       -       -
        43.81  244.68  161.67  258.54     -       -       -       -
        47.29  245.21  178.06  261.28     -       -       -       -
        51.50  246.35  188.92  263.11     -       -       -       -
        53.69  247.10  196.39  264.38     -       -       -       -
        57.50  248.14  210.28  266.76     -       -       -       -
        60.50  248.78  227.21  269.69     -       -       -       -
        66.00  249.73  240.97  272.10     -       -       -       -
        75.00  250.72  243.50  272.54     -       -       -       -
        80.50  250.81  240.00  272.41     -       -       -       -
        85.00  250.57  234.80  271.82     -       -       -       -
        91.00  251.18  228.76  270.95     -       -       -       -
        98.00  252.56  224.50  270.54     -       -       -       -
       103.00  253.54  223.00  270.30     -       -       -       -
       111.00  255.46  217.78  269.01     -       -       -       -
       113.50  256.11  214.00  268.03     -       -       -       -
       121.00  257.47  207.27  267.13     -       -       -       -
       133.00  259.96  199.00  265.57     -       -       -       -
       141.79  261.50  194.74  265.16     -       -       -       -
       145.00  262.07  188.50  264.66     -       -       -       -
       154.27  263.20  183.20  264.44     -       -       -       -
       160.27  263.77  168.50  264.42     -       -       -       -
       162.69  263.85  165.00  264.27     -       -       -       -
       165.00  264.27  162.69  263.85     -       -       -       -
       168.50  264.42  160.27  263.77     -       -       -       -
       183.20  264.44  154.27  263.20     -       -       -       -
       188.50  264.66  145.00  262.07     -       -       -       -
       194.74  265.16  141.79  261.50     -       -       -       -
       199.00  265.57  133.00  259.96     -       -       -       -
       207.27  267.13  121.00  257.47     -       -       -       -
       214.00  268.03  113.50  256.11     -       -       -       -
       217.78  269.01  111.00  255.46     -       -       -       -
       223.00  270.30  103.00  253.54     -       -       -       -
       224.50  270.54   98.00  252.56     -       -       -       -
       228.76  270.95   91.00  251.18     -       -       -       -
       234.80  271.82   85.00  250.57     -       -       -       -
       240.00  272.41   80.50  250.81     -       -       -       -
```

243.50	272.54	75.00	250.72	-	-	-	-
247.00	272.88	66.00	249.73	-	-	-	-
252.50	274.71	60.50	248.78	-	-	-	-
258.20	276.60	57.50	248.14	-	-	-	-
263.25	277.89	53.69	247.10	-	-	-	-
268.50	278.60	51.50	246.35	-	-	-	-
270.00	278.91	47.29	245.21	-	-	-	-
275.00	281.62	43.81	244.68	-	-	-	-
276.50	281.94	39.50	243.85	-	-	-	-
282.50	282.02	34.50	242.19	-	-	-	-
284.00	282.21	29.31	239.96	-	-	-	-
286.00	282.22	27.00	239.35	-	-	-	-
289.00	283.68	23.00	238.73	-	-	-	-
297.72	284.20	20.50	238.27	-	-	-	-
-	-	18.00	238.09	-	-	-	-
-	-	13.00	237.01	-	-	-	-
-	-	12.00	236.93	-	-	-	-
-	-	8.00	236.14	-	-	-	-
-	-	7.00	235.72	-	-	-	-
-	-	5.15	234.36	-	-	-	-
-	-	4.00	233.86	-	-	-	-

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
STRATO 2	0.00	0.00	38.00	18.00	20.00	2.127	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
METODO DI RICERCA: CONVEX RANDOM - Chen (1992)
FILTRAGGIO SUPERFICI : ATTIVATO
COORDINATE X1,X2,Y OSTACOLO : 0.00 0.00 0.00
LUNGHEZZA MEDIA SEGMENTI (m): 11.5 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 9.87 80.00
LIVELLO MINIMO CONSIDERATO (Ymin): 225.00
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 39.25 291.85

*** TOTALE SUPERFICI GENERATE : 10000

---------- INFORMAZIONI PARAMETRI DI CALCOLO ----------
METODO DI CALCOLO : BORSELLI (Borselli, 2016)
METODO DI ESPLORAZIONE CAMPO VALORI (lambda0,Fs0) ADOTTATO : A (rapido)
COEFFICIENTE SISMICO UTILIZZATO Kh : 0.0450
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0225
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) 1.2784 - Min. - X Y Lambda= 0.1346
66.60 249.80
83.56 238.51
91.37 233.57
96.46 230.72
100.54 228.84

104.71	227.42
108.30	226.54
112.32	225.94
116.72	225.64
122.31	225.55
127.28	225.54
131.92	225.60
136.36	225.74
140.79	225.95
145.15	226.22
149.59	226.57
154.15	227.01
158.99	227.53
163.55	228.10
168.00	228.71
172.35	229.39
176.78	230.15
181.16	230.98
185.66	231.91
190.33	232.94
195.37	234.13
199.88	235.32
204.21	236.62
208.36	238.02
212.73	239.66
216.91	241.38
221.26	243.35
225.81	245.56
230.87	248.16
235.52	250.66
239.99	253.18
244.33	255.73
248.76	258.46
253.58	261.60
259.07	265.32
264.81	269.35
264.81	278.10

Fattore di sicurezza (FS) 1.2821 - N.2 -- X Y Lambda= 0.1191

66.20	249.75
80.36	239.75
86.92	235.32
91.22	232.73
94.70	230.96
98.22	229.60
101.27	228.68
104.66	227.99
108.33	227.53
112.93	227.19
117.10	226.93
121.02	226.72
124.79	226.56
128.53	226.45
132.22	226.38
135.96	226.35
139.74	226.36
143.65	226.41
147.48	226.48
151.26	226.56
155.02	226.66
158.78	226.78
162.54	226.92
166.33	227.07
170.18	227.25
174.13	227.45
177.90	227.70
181.61	227.99
185.27	228.33
189.00	228.73
192.72	229.18
196.56	229.71
200.60	230.32
205.03	231.05
208.76	231.82
212.27	232.75
215.55	233.83
219.14	235.24
222.47	236.77

226.04	238.65
229.90	240.88
234.46	243.73
238.44	246.36
242.19	249.01
245.74	251.70
249.43	254.68
253.38	258.13
257.93	262.33
264.51	268.72
266.04	270.24
266.04	278.27

Fattore di sicurezza (FS) 1.3438 - N.3 -- X Y Lambda= 0.1317

64.84	249.53
77.22	240.56
82.94	236.60
86.67	234.30
89.68	232.73
92.74	231.52
95.37	230.73
98.28	230.13
101.42	229.74
105.37	229.47
109.03	229.22
112.49	229.00
115.87	228.78
119.16	228.57
122.46	228.37
125.76	228.17
129.08	227.97
132.41	227.78
135.70	227.61
138.97	227.46
142.22	227.34
145.48	227.23
148.77	227.14
152.09	227.08
155.51	227.03
159.07	227.00
162.33	227.05
165.51	227.19
168.58	227.40
171.79	227.72
174.89	228.12
178.11	228.62
181.49	229.24
185.24	230.02
188.60	230.79
191.82	231.63
194.91	232.54
198.12	233.58
201.20	234.67
204.39	235.91
207.69	237.29
211.30	238.89
214.70	240.44
218.00	242.00
221.23	243.57
224.48	245.21
227.71	246.89
231.00	248.65
234.40	250.53
238.01	252.57
241.30	254.53
244.49	256.56
247.57	258.65
250.79	260.96
254.26	263.62
258.24	266.85
259.76	268.14
259.76	277.00

Fattore di sicurezza (FS) 1.3791 - N.4 -- X Y Lambda= 0.1270

67.40	249.88
82.63	238.82
89.59	233.99

94.09	231.25
97.66	229.46
101.33	228.11
104.44	227.30
107.96	226.77
111.83	226.51
116.84	226.48
121.32	226.49
125.50	226.55
129.52	226.65
133.49	226.79
137.41	226.98
141.39	227.21
145.43	227.48
149.64	227.81
153.69	228.17
157.66	228.57
161.58	229.01
165.55	229.49
169.52	230.02
173.59	230.61
177.86	231.28
182.46	232.04
186.41	232.85
190.16	233.81
193.69	234.92
197.52	236.33
201.08	237.85
204.87	239.68
208.88	241.82
213.52	244.48
217.75	246.99
221.79	249.48
225.70	251.99
229.65	254.62
233.97	257.65
238.87	261.20
243.14	264.40
243.14	272.53

Fattore di sicurezza (FS) 1.3801 - N.5 -- X Y Lambda= 0.1341

48.30	245.48
69.64	238.11
79.84	234.80
86.75	232.87
92.57	231.56
98.21	230.65
103.39	230.08
108.86	229.76
114.58	229.68
121.15	229.84
127.45	229.99
133.54	230.14
139.55	230.29
145.42	230.43
151.41	230.58
157.47	230.72
163.73	230.88
170.20	231.04
175.93	231.37
181.46	231.91
186.73	232.66
192.40	233.72
197.75	234.96
203.45	236.54
209.55	238.47
216.64	240.94
222.72	243.29
228.43	245.76
233.80	248.36
239.49	251.43
245.48	255.04
252.48	259.66
262.72	266.87
266.64	269.73
266.64	278.35

Fattore di sicurezza (FS) 1.3945 - N.6 -- X Y Lambda= 0.1328

X	Y
50.99	246.21
71.28	239.96
81.36	236.98
88.37	235.08
94.48	233.60
100.15	232.41
105.65	231.41
111.36	230.52
117.35	229.73
123.99	229.00
129.88	228.51
135.48	228.23
140.82	228.15
146.43	228.26
151.77	228.55
157.35	229.06
163.20	229.78
169.76	230.76
175.77	231.77
181.53	232.85
187.10	234.01
192.79	235.32
198.39	236.73
204.19	238.32
210.29	240.11
217.02	242.20
222.81	244.24
228.29	246.45
233.46	248.84
239.03	251.74
244.83	255.20
251.68	259.69
261.74	266.80
264.92	269.12
264.92	278.12

Fattore di sicurezza (FS) 1.3983 - N.7 -- X Y Lambda= 0.1266

X	Y
61.83	249.01
81.90	239.07
91.31	234.66
97.56	232.10
102.70	230.37
107.82	229.12
112.38	228.32
117.36	227.81
122.69	227.59
129.17	227.62
135.05	227.71
140.61	227.87
145.97	228.11
151.33	228.42
156.66	228.80
162.14	229.28
167.87	229.85
174.08	230.55
179.47	231.35
184.60	232.33
189.44	233.50
194.65	235.02
199.52	236.68
204.69	238.70
210.15	241.08
216.42	244.03
222.12	246.83
227.55	249.64
232.80	252.49
238.14	255.52
243.95	259.03
250.57	263.20
257.20	267.54
257.20	276.27

Fattore di sicurezza (FS) 1.4081 - N.8 -- X Y Lambda= 0.1217

X	Y
59.65	248.60
78.84	241.16
88.25	237.66

94.74	235.47
100.32	233.78
105.59	232.44
110.61	231.34
115.88	230.38
121.43	229.55
127.72	228.78
133.29	228.24
138.58	227.88
143.63	227.71
148.89	227.70
153.91	227.85
159.17	228.18
164.66	228.70
170.80	229.43
176.39	230.20
181.74	231.06
186.91	232.02
192.21	233.13
197.42	234.36
202.87	235.77
208.66	237.40
215.19	239.37
220.57	241.27
225.60	243.39
230.25	245.72
235.39	248.70
240.65	252.28
246.96	257.09
256.38	264.88
261.33	269.13
261.33	277.40

Fattore di sicurezza (FS) 1.4296 - N.9 -- X Y Lambda= 0.1343

50.71	246.14
66.07	236.48
73.14	232.26
77.75	229.84
81.46	228.25
85.24	227.07
88.50	226.35
92.14	225.89
96.10	225.70
101.11	225.72
105.62	225.78
109.84	225.89
113.91	226.05
117.94	226.26
121.94	226.51
126.03	226.82
130.24	227.18
134.71	227.62
138.79	228.12
142.73	228.70
146.54	229.38
150.52	230.21
154.33	231.12
158.28	232.17
162.37	233.37
166.83	234.79
171.04	236.18
175.12	237.58
179.13	239.01
183.15	240.51
187.14	242.04
191.20	243.66
195.36	245.37
199.73	247.23
203.83	249.05
207.83	250.91
211.74	252.83
215.75	254.89
220.13	257.27
225.11	260.10
230.18	263.09
230.18	271.15

Fattore di sicurezza (FS) 1.4341 - N.10 -- X Y Lambda= 0.1233

X	Y
52.89	246.83
73.00	240.97
83.00	238.18
89.96	236.41
96.03	235.02
101.66	233.92
107.08	232.99
112.65	232.18
118.38	231.48
124.57	230.86
130.49	230.31
136.26	229.82
141.95	229.39
147.64	229.00
153.39	228.67
159.30	228.37
165.51	228.12
172.22	227.89
177.84	227.94
183.12	228.28
188.01	228.92
193.44	229.98
198.41	231.27
203.81	233.03
209.69	235.27
216.77	238.26
222.86	241.04
228.54	243.88
233.89	246.81
239.47	250.14
245.39	254.03
252.27	258.88
262.27	266.36
266.56	269.67
266.56	278.34

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

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	1.278	22181.8	17351.1	3095.6	Surplus
2	1.282	22787.3	17773.1	3236.9	Surplus
3	1.344	21786.5	16213.0	3952.3	Surplus
4	1.379	19912.7	14438.5	4030.3	Surplus
5	1.380	23331.4	16905.8	4735.0	Surplus
6	1.394	22808.6	16356.2	4816.8	Surplus
7	1.398	21340.4	15262.1	4552.2	Surplus
8	1.408	21944.5	15584.4	4801.6	Surplus
9	1.430	19763.2	13824.4	4556.4	Surplus
10	1.434	23172.9	16158.5	5398.6	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 3095.6

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

TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (°)	W (kN/m)	ru (-)	U (kPa)	phi' (°)	(c',Cu) (kPa)
66.598	1.559	-33.64	17.35	0.00	0.00	0.00	38.00
68.158	0.072	-33.64	1.65	0.00	0.00	0.00	38.00
68.230	1.559	-33.64	53.66	0.00	0.00	0.00	38.00
69.789	0.711	-33.64	35.97	0.00	0.00	0.00	38.00
70.500	1.559	-33.64	104.17	0.00	0.00	0.00	38.00
72.059	1.559	-33.64	138.87	0.00	0.00	0.00	38.00
73.619	0.899	-33.64	95.87	0.00	0.00	0.00	38.00

74.518	0.482	-33.64	56.33	0.00	0.00	0.00	100.00
75.000	1.559	-33.64	205.51	0.00	0.00	0.00	100.00
76.559	0.301	-33.64	43.61	0.00	0.00	0.00	100.00
76.860	0.890	-33.64	136.61	0.00	0.00	0.00	100.00
77.750	1.559	-33.64	266.51	0.00	0.00	0.00	100.00
79.309	1.191	-33.64	226.80	0.00	0.00	0.00	100.00
80.500	1.559	-33.64	325.95	0.00	0.00	0.00	100.00
82.059	0.691	-33.64	154.44	0.00	0.00	0.00	100.00
82.750	0.806	-33.64	187.92	0.00	0.00	0.00	100.00
83.556	1.444	-32.34	357.31	0.00	0.00	0.00	100.00
85.000	1.559	-32.34	417.96	0.00	0.00	0.00	100.00
86.559	0.981	-32.34	281.72	0.00	0.00	0.00	100.00
87.540	0.460	-32.34	137.16	0.00	0.00	0.00	100.00
88.000	1.559	-32.34	488.78	0.00	0.00	0.00	100.00
89.559	1.441	-32.34	484.33	0.00	0.00	0.00	100.00
91.000	0.368	-32.34	128.77	0.00	0.00	0.00	100.00
91.368	1.559	-29.20	569.61	0.00	0.00	0.00	100.00
92.927	1.559	-29.20	607.01	0.00	0.00	0.00	100.00
94.486	0.014	-29.20	5.50	0.00	0.00	0.00	100.00
94.500	1.559	-29.20	644.74	0.00	0.00	0.00	100.00
96.059	0.397	-29.20	170.06	0.00	0.00	0.00	100.00
96.456	1.544	-24.77	682.25	0.00	0.00	0.00	100.00
98.000	0.960	-24.77	440.32	0.00	0.00	0.00	100.00
98.960	1.540	-24.77	732.09	0.00	0.00	0.00	100.00
100.500	0.043	-24.77	20.67	0.00	0.00	0.00	100.00
100.543	1.559	-18.79	771.44	0.00	0.00	0.00	100.00
102.102	0.898	-18.79	456.37	0.00	0.00	0.00	100.00
103.000	1.559	-18.79	814.16	0.00	0.00	0.00	100.00
104.559	0.147	-18.79	77.97	0.00	0.00	0.00	100.00
104.706	1.559	-13.79	842.92	0.00	0.00	0.00	100.00
106.265	0.735	-13.79	405.49	0.00	0.00	0.00	100.00
107.000	1.300	-13.79	730.00	0.00	0.00	0.00	100.00
108.300	1.559	-8.43	895.20	0.00	0.00	0.00	100.00
109.859	1.141	-8.43	667.07	0.00	0.00	0.00	100.00
111.000	1.250	-8.43	742.65	0.00	0.00	0.00	100.00
112.250	0.068	-8.43	41.03	0.00	0.00	0.00	100.00
112.318	1.182	-3.99	713.22	0.00	0.00	0.00	100.00
113.500	0.030	-3.99	18.23	0.00	0.00	0.00	100.00
113.530	1.559	-3.99	953.69	0.00	0.00	0.00	100.00
115.089	1.559	-3.99	966.07	0.00	0.00	0.00	100.00
116.649	0.067	-3.99	42.07	0.00	0.00	0.00	100.00
116.716	0.534	-0.86	333.69	0.00	0.00	0.00	100.00
117.250	1.559	-0.86	980.94	0.00	0.00	0.00	100.00
118.809	1.559	-0.86	990.60	0.00	0.00	0.00	100.00
120.369	0.631	-0.86	403.87	0.00	0.00	0.00	100.00
121.000	1.309	-0.86	843.05	0.00	0.00	0.00	100.00
122.309	1.559	-0.12	1013.54	0.00	0.00	0.00	100.00
123.869	1.559	-0.12	1023.72	0.00	0.00	0.00	100.00
125.428	1.559	-0.12	1033.91	0.00	0.00	0.00	100.00
126.987	0.013	-0.12	8.42	0.00	0.00	0.00	100.00
127.000	0.283	-0.12	188.55	0.00	0.00	0.00	100.00
127.283	1.559	0.77	1045.65	0.00	0.00	0.00	100.00
128.842	0.158	0.77	106.49	0.00	0.00	0.00	100.00
129.000	1.559	0.77	1056.03	0.00	0.00	0.00	100.00
130.559	1.359	0.77	927.82	0.00	0.00	0.00	100.00
131.918	1.082	1.71	743.88	0.00	0.00	0.00	100.00
133.000	1.559	1.71	1078.53	0.00	0.00	0.00	100.00
134.559	1.559	1.71	1085.70	0.00	0.00	0.00	100.00
136.119	0.242	1.71	169.40	0.00	0.00	0.00	100.00
136.361	1.034	2.69	724.47	0.00	0.00	0.00	100.00
137.395	1.559	2.69	1097.75	0.00	0.00	0.00	100.00
138.954	1.559	2.69	1104.06	0.00	0.00	0.00	100.00
140.514	0.280	2.69	199.07	0.00	0.00	0.00	100.00
140.794	0.996	3.62	709.23	0.00	0.00	0.00	100.00
141.790	1.559	3.62	1114.68	0.00	0.00	0.00	100.00
143.349	0.046	3.62	32.75	0.00	0.00	0.00	100.00
143.395	1.559	3.62	1120.46	0.00	0.00	0.00	100.00
144.954	0.046	3.62	32.92	0.00	0.00	0.00	100.00
145.000	0.146	3.62	104.97	0.00	0.00	0.00	100.00
145.146	1.559	4.54	1124.89	0.00	0.00	0.00	100.00
146.705	0.005	4.54	3.63	0.00	0.00	0.00	100.00
146.710	1.559	4.54	1127.22	0.00	0.00	0.00	100.00
148.269	1.321	4.54	956.64	0.00	0.00	0.00	100.00
149.590	0.045	5.41	32.54	0.00	0.00	0.00	100.00
149.635	1.559	5.41	1131.19	0.00	0.00	0.00	100.00
151.194	1.559	5.41	1132.75	0.00	0.00	0.00	100.00
152.754	1.397	5.41	1016.40	0.00	0.00	0.00	100.00
154.151	0.119	6.22	86.68	0.00	0.00	0.00	100.00
154.270	1.559	6.22	1134.82	0.00	0.00	0.00	100.00

155.829	1.441	6.22	1048.21	0.00	0.00	0.00	100.00
157.270	1.559	6.22	1134.16	0.00	0.00	0.00	100.00
158.829	0.164	6.22	119.35	0.00	0.00	0.00	100.00
158.993	1.277	7.03	928.00	0.00	0.00	0.00	100.00
160.270	1.210	7.03	878.10	0.00	0.00	0.00	100.00
161.480	0.190	7.03	137.67	0.00	0.00	0.00	100.00
161.670	1.020	7.03	738.12	0.00	0.00	0.00	100.00
162.690	0.864	7.03	624.67	0.00	0.00	0.00	100.00
163.554	0.291	7.92	210.98	0.00	0.00	0.00	100.00
163.845	1.155	7.92	836.90	0.00	0.00	0.00	100.00
165.000	1.559	7.92	1128.52	0.00	0.00	0.00	100.00
166.559	0.191	7.92	137.73	0.00	0.00	0.00	100.00
166.750	1.248	7.92	900.14	0.00	0.00	0.00	100.00
167.998	0.502	8.85	360.82	0.00	0.00	0.00	100.00
168.500	1.559	8.85	1117.56	0.00	0.00	0.00	100.00
170.059	1.559	8.85	1110.71	0.00	0.00	0.00	100.00
171.619	0.732	8.85	519.23	0.00	0.00	0.00	100.00
172.351	1.559	9.77	1100.24	0.00	0.00	0.00	100.00
173.910	1.559	9.77	1092.57	0.00	0.00	0.00	100.00
175.469	0.381	9.77	265.48	0.00	0.00	0.00	100.00
175.850	0.933	9.77	649.21	0.00	0.00	0.00	100.00
176.783	1.277	10.70	883.22	0.00	0.00	0.00	100.00
178.060	1.559	10.70	1071.06	0.00	0.00	0.00	100.00
179.619	1.543	10.70	1051.41	0.00	0.00	0.00	100.00
181.162	1.559	11.61	1053.75	0.00	0.00	0.00	100.00
182.721	0.479	11.61	321.52	0.00	0.00	0.00	100.00
183.200	1.559	11.61	1042.46	0.00	0.00	0.00	100.00
184.759	0.900	11.61	598.50	0.00	0.00	0.00	100.00
185.660	0.190	12.48	126.21	0.00	0.00	0.00	100.00
185.850	1.559	12.48	1029.19	0.00	0.00	0.00	100.00
187.409	1.091	12.48	714.96	0.00	0.00	0.00	100.00
188.500	0.420	12.48	274.29	0.00	0.00	0.00	100.00
188.920	1.411	12.48	917.84	0.00	0.00	0.00	100.00
190.331	1.289	13.25	833.84	0.00	0.00	0.00	100.00
191.620	1.559	13.25	1001.86	0.00	0.00	0.00	100.00
193.179	1.559	13.25	994.59	0.00	0.00	0.00	100.00
194.739	0.001	13.25	0.89	0.00	0.00	0.00	100.00
194.740	0.629	13.25	399.03	0.00	0.00	0.00	100.00
195.369	1.021	14.84	645.57	0.00	0.00	0.00	100.00
196.390	0.480	14.84	302.23	0.00	0.00	0.00	100.00
196.870	1.559	14.84	976.57	0.00	0.00	0.00	100.00
198.429	0.571	14.84	355.42	0.00	0.00	0.00	100.00
199.000	0.877	14.84	544.54	0.00	0.00	0.00	100.00
199.877	1.559	16.68	964.64	0.00	0.00	0.00	100.00
201.436	1.559	16.68	959.03	0.00	0.00	0.00	100.00
202.995	0.140	16.68	85.66	0.00	0.00	0.00	100.00
203.135	1.075	16.68	657.34	0.00	0.00	0.00	100.00
204.210	1.559	18.66	948.11	0.00	0.00	0.00	100.00
205.769	1.501	18.66	905.62	0.00	0.00	0.00	100.00
207.270	1.094	18.66	655.13	0.00	0.00	0.00	100.00
208.364	1.559	20.57	924.26	0.00	0.00	0.00	100.00
209.923	0.357	20.57	209.70	0.00	0.00	0.00	100.00
210.280	0.355	20.57	208.16	0.00	0.00	0.00	100.00
210.635	1.559	20.57	907.05	0.00	0.00	0.00	100.00
212.194	0.538	20.57	310.14	0.00	0.00	0.00	100.00
212.732	1.268	22.45	724.86	0.00	0.00	0.00	100.00
214.000	1.559	22.45	881.89	0.00	0.00	0.00	100.00
215.559	0.331	22.45	186.00	0.00	0.00	0.00	100.00
215.890	1.016	22.45	569.02	0.00	0.00	0.00	100.00
216.906	0.874	24.27	486.70	0.00	0.00	0.00	100.00
217.780	1.559	24.27	860.04	0.00	0.00	0.00	100.00
219.339	1.051	24.27	573.60	0.00	0.00	0.00	100.00
220.390	0.869	24.27	470.70	0.00	0.00	0.00	100.00
221.259	1.559	25.90	835.74	0.00	0.00	0.00	100.00
222.818	0.182	25.90	96.69	0.00	0.00	0.00	100.00
223.000	0.750	25.90	396.49	0.00	0.00	0.00	100.00
223.750	0.750	25.90	392.76	0.00	0.00	0.00	100.00
224.500	1.307	25.90	674.57	0.00	0.00	0.00	100.00
225.807	0.823	27.26	417.66	0.00	0.00	0.00	100.00
226.630	0.580	27.26	290.95	0.00	0.00	0.00	100.00
227.210	1.550	27.26	763.65	0.00	0.00	0.00	100.00
228.760	1.559	27.26	748.93	0.00	0.00	0.00	100.00
230.319	0.551	27.26	260.30	0.00	0.00	0.00	100.00
230.870	0.910	28.25	424.49	0.00	0.00	0.00	100.00
231.780	1.559	28.25	712.30	0.00	0.00	0.00	100.00
233.339	1.461	28.25	649.66	0.00	0.00	0.00	100.00
234.800	0.721	28.25	314.21	0.00	0.00	0.00	100.00
235.521	1.559	29.35	663.82	0.00	0.00	0.00	100.00
237.080	0.320	29.35	133.42	0.00	0.00	0.00	100.00

237.400	1.559	29.35	637.29	0.00	0.00	0.00	100.00
238.959	1.035	29.35	410.87	0.00	0.00	0.00	100.00
239.994	0.006	30.49	2.22	0.00	0.00	0.00	100.00
240.000	0.970	30.49	375.28	0.00	0.00	0.00	100.00
240.970	0.780	30.49	294.26	0.00	0.00	0.00	100.00
241.750	1.559	30.49	568.19	0.00	0.00	0.00	100.00
243.309	0.191	30.49	67.65	0.00	0.00	0.00	100.00
243.500	0.831	30.49	290.60	0.00	0.00	0.00	100.00
244.331	1.559	31.62	525.61	0.00	0.00	0.00	100.00
245.891	1.109	31.62	358.23	0.00	0.00	0.00	100.00
247.000	1.559	31.62	487.33	0.00	0.00	0.00	100.00
248.559	0.198	31.62	60.97	0.00	0.00	0.00	100.00
248.758	1.559	33.03	470.61	0.00	0.00	0.00	100.00
250.317	1.559	33.03	454.83	0.00	0.00	0.00	100.00
251.876	0.624	33.03	177.53	0.00	0.00	0.00	100.00
252.500	1.085	33.03	302.72	0.00	0.00	0.00	100.00
253.585	1.559	34.13	420.99	0.00	0.00	0.00	100.00
255.144	1.559	34.13	403.77	0.00	0.00	0.00	100.00
256.703	1.497	34.13	371.33	0.00	0.00	0.00	100.00
258.200	0.872	34.13	208.56	0.00	0.00	0.00	100.00
259.072	1.559	35.11	355.75	0.00	0.00	0.00	100.00
260.632	1.559	35.11	333.48	0.00	0.00	0.00	100.00
262.191	1.059	35.11	213.78	0.00	0.00	0.00	100.00
263.250	1.559	35.11	293.11	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 (--)
66.598	0.000	249.796	-0.471	0.0000000000E+000	0.0000000000E+000	2.0152046676E+001	0.043	2.348	2.832
68.158	0.287	249.045	-0.471	2.8469421647E+001	2.8326319715E-002	1.6363625005E+001	0.043	2.332	2.812
68.230	0.318	249.028	-0.419	2.9647585979E+001	3.3380453873E-002	1.7332021975E+001	0.043	2.314	2.789
69.789	0.689	248.361	-0.409	9.2154149533E+001	5.2903214781E-001	5.6404711356E+001	0.043	1.652	1.973
70.500	0.900	248.100	-0.495	1.3752698082E+002	1.2343653717E+000	7.9937621913E+001	0.043	1.414	1.679
72.059	1.076	247.238	-0.509	3.1723791407E+002	5.7752147796E+000	1.1284344502E+002	0.046	1.384	1.126
73.619	1.387	246.512	-0.436	4.8944027926E+002	1.2077816028E+001	1.1273309903E+002	0.075	1.441	0.907
74.518	1.639	246.165	-0.398	5.9202014159E+002	1.6361375635E+001	1.3496928614E+002	0.090	1.460	2.202
75.000	1.756	245.962	-0.419	6.6248304299E+002	1.9552105855E+001	1.5020016940E+002	0.092	1.452	2.114
76.559	2.143	245.311	-0.416	9.1698219735E+002	3.1921908476E+001	1.7702878451E+002	0.104	1.405	1.886
76.860	2.220	245.188	-0.429	9.7101606993E+002	3.4782874494E+001	1.8708878775E+002	0.107	1.396	1.852
77.750	2.424	244.800	-0.431	1.1570071363E+003	4.5343235406E+001	2.0479954919E+002	0.120	1.365	1.757
79.309	2.794	244.133	-0.433	1.4649336329E+003	6.2888480396E+001	2.1085166107E+002	0.133	1.324	1.608
80.500	3.063	243.609	-0.432	1.7281551763E+003	7.9032393843E+001	2.2673872723E+002	0.145	1.300	1.520
82.059	3.436	242.944	-0.412	2.0932957577E+003	1.0287576753E+002	2.2865083385E+002	0.162	1.276	1.432
82.750	3.633	242.682	-0.407	2.2495366526E+003	1.1367630462E+002	2.4662368597E+002	0.169	1.269	1.405
83.556	3.823	242.336	-0.424	2.4673828534E+003	1.2967588725E+002	2.7511754512E+002	0.180	1.265	1.377

85.000	4.129	241.727	-0.421	2.8769062934E+003	1.6130569762E+002	2.9597510937E+002	0.201	1.264	1.340
86.559	4.460	241.071	-0.401	3.3593974554E+003	2.0126534568E+002	3.0242517018E+002	0.225	1.279	1.319
87.540	4.717	240.708	-0.376	3.6516666598E+003	2.2715203948E+002	3.1533613278E+002	0.238	1.302	1.317
88.000	4.830	240.529	-0.345	3.8004573391E+003	2.4076322885E+002	3.1789134925E+002	0.245	1.318	1.319
89.559	5.299	240.011	-0.321	4.2667214153E+003	2.8626304896E+002	3.0191206324E+002	0.266	1.397	1.340
91.000	5.765	239.564	-0.304	4.7055340053E+003	3.3222393874E+002	2.9690723640E+002	0.286	1.512	1.376
91.368	5.893	239.460	-0.278	4.8139855809E+003	3.4409507521E+002	2.9671851495E+002	0.290	1.548	1.387
92.927	6.333	239.029	-0.269	5.2883639644E+003	3.9836137563E+002	3.1020714280E+002	0.313	1.738	1.448
94.486	6.796	238.620	-0.262	5.7813968364E+003	4.5929286999E+002	2.7985537052E+002	0.337	1.996	1.528
94.500	6.801	238.617	-0.213	5.7852280170E+003	4.5978565860E+002	2.7964503704E+002	0.337	1.998	1.529
96.059	7.341	238.286	-0.211	6.2406188776E+003	5.2164983508E+002	2.9459176673E+002	0.359	2.324	1.625
96.456	7.481	238.204	-0.189	6.3577847736E+003	5.3821631681E+002	2.9375011428E+002	0.365	2.424	1.653
98.000	7.907	237.918	-0.179	6.8023484832E+003	6.0413919294E+002	2.8357296468E+002	0.389	2.849	1.770
98.960	8.190	237.757	-0.147	7.0719610097E+003	6.4608597244E+002	2.7121709929E+002	0.404	3.138	1.849
100.500	8.694	237.551	-0.134	7.4658470028E+003	7.1168642373E+002	2.4597721238E+002	0.424	3.536	1.976
100.543	8.709	237.546	-0.113	7.4762995834E+003	7.1348211227E+002	2.4621649797E+002	0.425	3.546	1.979
102.102	9.064	237.371	-0.106	7.8893624150E+003	7.8873650405E+002	2.7047023095E+002	0.453	3.707	2.115
103.000	9.284	237.285	-0.078	8.1351682403E+003	8.3614623647E+002	2.6179575855E+002	0.470	3.646	2.191
104.559	9.708	237.179	-0.067	8.5112222842E+003	9.1216978606E+002	2.1992259615E+002	0.495	3.392	2.304
104.706	9.750	237.171	-0.043	8.5431542968E+003	9.1883078533E+002	2.1933929712E+002	0.497	3.362	2.313
106.265	10.067	237.105	-0.034	8.9086197492E+003	9.9721432548E+002	2.1418023085E+002	0.524	3.005	2.394
107.000	10.234	237.092	-0.011	9.0590203231E+003	1.0309890269E+003	2.0037357599E+002	0.535	2.832	2.415
108.300	10.544	237.083	0.003	9.3095761512E+003	1.0884983879E+003	1.8133313564E+002	0.552	2.558	2.431
109.859	10.793	237.101	0.017	9.5708930485E+003	1.1509914957E+003	1.5657657032E+002	0.572	2.293	2.418
111.000	10.990	237.129	0.029	9.7403654915E+003	1.1928676059E+003	1.4157891880E+002	0.584	2.142	2.388
112.250	11.215	237.169	0.032	9.9078347181E+003	1.2351165888E+003	1.0434959557E+002	0.595	2.011	2.345
112.318	11.228	237.172	0.042	9.9148661076E+003	1.2369324898E+003	1.0300633763E+002	0.595	2.006	2.342
113.500	11.360	237.222	0.043	1.0042263730E+004	1.2703492903E+003	1.0657584526E+002	0.604	1.923	2.288
113.530	11.364	237.223	0.049	1.0045460056E+004	1.2711901111E+003	1.0629976623E+002	0.604	1.921	2.287
115.089	11.550	237.300	0.059	1.0191402496E+004	1.3108030283E+003	9.2535509291E+001	0.615	1.845	2.206
116.649	11.764	237.406	0.068	1.0334041075E+004	1.3515856447E+003	7.8462231766E+001	0.625	1.789	2.105
116.716	11.773	237.410	0.072	1.0339295060E+004	1.3531484983E+003	7.7780678861E+001	0.626	1.787	2.101
117.250	11.820	237.449	0.083	1.0380324995E+004	1.3654783144E+003	7.7296580202E+001	0.629	1.773	2.066
118.809	11.979	237.584	0.089	1.0502926450E+004	1.4037989425E+003	7.4037928399E+001	0.640	1.738	1.953
120.369	12.144	237.726	0.094	1.0611219502E+004	1.4391120998E+003	6.8968347910E+001	0.650	1.712	1.848
121.000	12.216	237.789	0.103	1.0654643177E+004	1.4535377512E+003	6.8229043028E+001	0.653	1.701	1.805
122.309	12.373	237.926	0.107	1.0742508957E+004	1.4832056405E+003	6.5395070968E+001	0.661	1.681	1.718
123.869	12.545	238.095	0.107	1.0841313464E+004	1.5172971852E+003	5.7925672423E+001	0.669	1.657	1.623
125.428	12.711	238.258	0.105	1.0923155821E+004	1.5461847018E+003	4.9274999646E+001	0.676	1.635	1.542
126.987	12.878	238.422	0.105	1.0994982360E+004	1.5717373360E+003	4.1193595848E+001	0.680		

1.612 1.468
127.000 12.880 238.423 0.099 1.0995502185E+004 1.5719222752E+003 4.1142525302E+001 0.680
1.612 1.468
127.283 12.908 238.451 0.103 1.1007059150E+004 1.5760237645E+003 4.0737388423E+001 0.681
1.608 1.456
128.842 13.049 238.612 0.102 1.1069333618E+004 1.5979581576E+003 3.1046725819E+001 0.684
1.583 1.393
129.000 13.060 238.626 0.105 1.1074097048E+004 1.5996052457E+003 3.0541584053E+001 0.684
1.581 1.387
130.559 13.206 238.793 0.110 1.1127811030E+004 1.6179638542E+003 3.3681363003E+001 0.686
1.554 1.329
131.918 13.341 238.946 0.116 1.1172664617E+004 1.6331231278E+003 3.1456341074E+001 0.688
1.529 1.280
133.000 13.438 239.075 0.125 1.1205360347E+004 1.6440020246E+003 2.9379071492E+001 0.689
1.507 1.242
134.559 13.593 239.277 0.132 1.1249290705E+004 1.6583470583E+003 2.6671928947E+001 0.690
1.475 1.190
136.119 13.758 239.488 0.135 1.1288539361E+004 1.6709634756E+003 2.2875774960E+001 0.690
1.442 1.142
136.361 13.783 239.520 0.134 1.1293997325E+004 1.6727076720E+003 2.2205609988E+001 0.690
1.436 1.135
137.395 13.873 239.659 0.134 1.1315575838E+004 1.6795947716E+003 1.9379014655E+001 0.690
1.415 1.107
138.954 14.008 239.867 0.123 1.1342291545E+004 1.6880831157E+003 1.3608878814E+001 0.689
1.385 1.070
140.514 14.111 240.043 0.110 1.1358016455E+004 1.6930179937E+003 6.2510537697E+000 0.687
1.359 1.043
140.794 14.124 240.069 0.096 1.1359574982E+004 1.6935086092E+003 5.3559920887E+000 0.687
1.355 1.039
141.790 14.157 240.165 0.097 1.1364180362E+004 1.6950099004E+003 3.5812510522E+000 0.685
1.342 1.027
143.349 14.209 240.316 0.097 1.1367222168E+004 1.6961996254E+003 3.6220016500E-001 0.682
1.322 1.009
143.395 14.211 240.320 0.092 1.1367236593E+004 1.6962156073E+003 2.5685839591E-001 0.682
1.321 1.009
144.954 14.256 240.464 0.092 1.1364509706E+004 1.6958094238E+003 -3.3576885750E+000 0.678
1.302 0.994
145.000 14.257 240.468 0.088 1.1364354100E+004 1.6957782286E+003 -3.4918393311E+000 0.678
1.302 0.994
145.146 14.261 240.481 0.091 1.1363805009E+004 1.6956695682E+003 -3.9079449799E+000 0.678
1.300 0.992
146.705 14.279 240.623 0.091 1.1355394917E+004 1.6939279708E+003 -6.6358954801E+000 0.675
1.281 0.980
146.710 14.279 240.624 0.098 1.1355361579E+004 1.6939207941E+003 -6.6488357125E+000 0.675
1.281 0.980
148.269 14.308 240.776 0.098 1.1340664858E+004 1.6906190086E+003 -1.1533505968E+001 0.671
1.263 0.968
149.590 14.334 240.907 0.099 1.1323072444E+004 1.6865080440E+003 -1.4498579669E+001 0.668
1.248 0.958
149.635 14.334 240.911 0.111 1.1322419873E+004 1.6863545230E+003 -1.4664669376E+001 0.668
1.248 0.958
151.194 14.360 241.085 0.119 1.1292727033E+004 1.6792983504E+003 -2.2388813562E+001 0.663
1.230 0.947
152.754 14.409 241.282 0.126 1.1252598172E+004 1.6696799730E+003 -2.7807435410E+001 0.658
1.212 0.936
154.151 14.454 241.459 0.126 1.1211147782E+004 1.6596830426E+003 -3.1012032147E+001 0.652
1.197 0.928
154.270 14.456 241.474 0.115 1.1207440836E+004 1.6587864314E+003 -3.1297749273E+001 0.652
1.195 0.927
155.829 14.464 241.652 0.109 1.1155149961E+004 1.6460494350E+003 -3.4927674325E+001 0.646
1.180 0.919
157.270 14.456 241.801 0.103 1.1102975617E+004 1.6331340622E+003 -3.5767531818E+001 0.640
1.169 0.914
158.829 14.447 241.962 0.103 1.1047957760E+004 1.6193138546E+003 -3.4738474613E+001 0.634
1.159 0.910
158.993 14.446 241.979 0.111 1.1042265977E+004 1.6178770791E+003 -3.4656829315E+001 0.633
1.158 0.910
160.270 14.432 242.122 0.100 1.0998264522E+004 1.6067871786E+003 -3.5535771746E+001 0.628
1.151 0.909
161.480 14.388 242.228 0.087 1.0954041782E+004 1.5955162895E+003 -3.4401034425E+001 0.624
1.145 0.909
161.670 14.381 242.244 0.087 1.0947569631E+004 1.5938555921E+003 -3.4315789801E+001 0.623
1.144 0.909
162.690 14.344 242.333 0.101 1.0911188513E+004 1.5844944212E+003 -3.5989548758E+001 0.620
1.140 0.910
163.554 14.338 242.434 0.108 1.0879873294E+004 1.5763579843E+003 -3.6494426238E+001 0.616
1.136 0.911
163.845 14.322 242.458 0.088 1.0869215322E+004 1.5735760254E+003 -3.7892647135E+001 0.615
1.135 0.912

165.000	14.264	242.561	0.089	1.0819407723E+004	1.5604060673E+003	-4.4672677518E+001	0.609	1.132	0.915
166.559	14.186	242.700	0.089	1.0746488387E+004	1.5409396457E+003	-4.9735352388E+001	0.602	1.128	0.921
166.750	14.177	242.717	0.086	1.0736934500E+004	1.5383852298E+003	-5.0020982963E+001	0.601	1.127	0.922
167.998	14.110	242.824	0.087	1.0675120897E+004	1.5218104819E+003	-5.2813288412E+001	0.595	1.124	0.928
168.500	14.077	242.869	0.090	1.0647967558E+004	1.5145745158E+003	-5.4874706571E+001	0.592	1.123	0.931
170.059	13.976	243.011	0.091	1.0558837340E+004	1.4909195660E+003	-5.9288430970E+001	0.584	1.122	0.941
171.619	13.876	243.153	0.094	1.0463070798E+004	1.4658407943E+003	-6.7436159241E+001	0.576	1.122	0.954
172.351	13.834	243.226	0.097	1.0411620265E+004	1.4528378615E+003	-7.0584290846E+001	0.572	1.122	0.961
173.910	13.717	243.376	0.099	1.0300491657E+004	1.4253478737E+003	-7.5168803238E+001	0.563	1.124	0.977
175.469	13.607	243.535	0.099	1.0177199015E+004	1.3969309251E+003	-7.2367473325E+001	0.553	1.128	0.996
175.850	13.575	243.569	0.094	1.0150282063E+004	1.3909928011E+003	-7.2700589972E+001	0.551	1.129	1.000
176.783	13.504	243.659	0.103	1.0077917622E+004	1.3756410991E+003	-8.1156275296E+001	0.546	1.132	1.012
178.060	13.400	243.796	0.106	9.9679790671E+003	1.3536232710E+003	-8.4863819671E+001	0.539	1.136	1.029
179.619	13.269	243.959	0.103	9.8380378676E+003	1.3294821527E+003	-8.0951853545E+001	0.532	1.142	1.051
181.162	13.133	244.115	0.101	9.7167756383E+003	1.3087904013E+003	-7.8069191374E+001	0.526	1.148	1.070
182.721	12.971	244.273	0.101	9.5958721929E+003	1.2894228948E+003	-7.6389505416E+001	0.521	1.154	1.090
183.200	12.921	244.322	0.115	9.5594851558E+003	1.2837462538E+003	-7.8304767445E+001	0.519	1.155	1.096
184.759	12.787	244.508	0.124	9.4258640303E+003	1.2647518001E+003	-8.9081551733E+001	0.514	1.162	1.115
185.660	12.719	244.626	0.131	9.3438980482E+003	1.2536575974E+003	-9.0443922092E+001	0.510	1.165	1.127
185.850	12.702	244.651	0.134	9.3267057056E+003	1.2514096410E+003	-9.0397773271E+001	0.510	1.165	1.129
187.409	12.567	244.860	0.135	9.1847335158E+003	1.2331354105E+003	-9.0101626955E+001	0.505	1.171	1.148
188.500	12.475	245.010	0.138	9.0871821397E+003	1.2213429205E+003	-8.9146229798E+001	0.502	1.174	1.159
188.920	12.440	245.068	0.138	9.0497880957E+003	1.2169290451E+003	-8.8620609696E+001	0.500	1.175	1.164
190.331	12.323	245.263	0.140	8.9267223658E+003	1.2025686586E+003	-8.7241666950E+001	0.497	1.177	1.177
191.620	12.201	245.445	0.154	8.8142373911E+003	1.1895610848E+003	-9.2240729047E+001	0.493	1.178	1.188
193.179	12.090	245.701	0.164	8.6609920123E+003	1.1713859639E+003	-9.7315540653E+001	0.488	1.178	1.200
194.739	11.978	245.956	0.164	8.5107493782E+003	1.1532604497E+003	-8.7803854833E+001	0.483	1.175	1.210
194.740	11.978	245.956	0.154	8.5106262541E+003	1.1532453076E+003	-8.7797341017E+001	0.483	1.175	1.210
195.369	11.927	246.053	0.162	8.4550946112E+003	1.1464101769E+003	-9.1020732825E+001	0.481	1.173	1.213
196.390	11.827	246.223	0.167	8.3576639300E+003	1.1341377178E+003	-9.4534808295E+001	0.478	1.170	1.218
196.870	11.780	246.304	0.170	8.3124826719E+003	1.1283016462E+003	-9.4304374719E+001	0.476	1.168	1.220
198.429	11.634	246.571	0.178	8.1645386376E+003	1.1082053741E+003	-1.0407633690E+002	0.471	1.160	1.223
199.000	11.595	246.683	0.209	8.1032209558E+003	1.0994031800E+003	-1.1160954204E+002	0.468	1.156	1.224
199.877	11.553	246.874	0.217	7.9997625116E+003	1.0838677505E+003	-1.1747579500E+002	0.463	1.149	1.224
201.436	11.424	247.212	0.227	7.8180655090E+003	1.0555343526E+003	-1.2181877797E+002	0.454	1.136	1.221
202.995	11.327	247.582	0.238	7.6198587613E+003	1.0236161710E+003	-1.3208021740E+002	0.443	1.121	1.217
203.135	11.319	247.616	0.239	7.6013431630E+003	1.0206069766E+003	-1.3194188916E+002	0.442	1.119	1.216
204.210	11.253	247.872	0.265	7.4643754922E+003	9.9799434364E+002	-1.3739868722E+002	0.434	1.108	1.212
205.769	11.169	248.315	0.286	7.2276306015E+003	9.5864441101E+002	-1.5305191580E+002	0.420	1.090	1.205
207.270	11.096	248.748	0.280	6.9961215247E+003	9.1985459067E+002	-1.4785820210E+002	0.407		

1.074 1.196
208.364 11.021 249.042 0.265 6.8394282322E+003 8.9355826196E+002 -1.4174153881E+002 0.398
1.062 1.190
209.923 10.846 249.453 0.264 6.6216820220E+003 8.5740913305E+002 -1.4117338026E+002 0.386
1.048 1.182
210.280 10.808 249.548 0.264 6.5712179769E+003 8.4914420995E+002 -1.3918430494E+002 0.383
1.045 1.180
210.635 10.767 249.640 0.263 6.5226341792E+003 8.4122423275E+002 -1.3705850537E+002 0.381
1.042 1.179
212.194 10.593 250.052 0.274 6.3075304586E+003 8.0670969298E+002 -1.5197836619E+002 0.370
1.029 1.172
212.732 10.554 250.215 0.308 6.2231839699E+003 7.9336925529E+002 -1.5733754666E+002 0.365
1.025 1.169
214.000 10.423 250.607 0.310 6.0221517646E+003 7.6193825752E+002 -1.5796796928E+002 0.355
1.015 1.164
215.559 10.263 251.091 0.312 5.7769737156E+003 7.2429379850E+002 -1.5866801347E+002 0.341
1.004 1.159
215.890 10.231 251.196 0.314 5.7244015847E+003 7.1636966648E+002 -1.5825893274E+002 0.338
1.002 1.158
216.906 10.129 251.514 0.314 5.5658726673E+003 6.9265939887E+002 -1.5680753985E+002 0.330
0.996 1.155
217.780 10.011 251.790 0.319 5.4282296317E+003 6.7225046349E+002 -1.5782464379E+002 0.323
0.991 1.153
219.339 9.807 252.289 0.329 5.1810714057E+003 6.3591612496E+002 -1.6424168470E+002 0.310
0.984 1.151
220.390 9.692 252.648 0.346 5.0044416500E+003 6.1017187786E+002 -1.7046364943E+002 0.300
0.980 1.150
221.259 9.605 252.953 0.330 4.8546475470E+003 5.8844190778E+002 -1.6630368277E+002 0.292
0.977 1.150
222.818 9.343 253.448 0.315 4.6124268155E+003 5.5363342961E+002 -1.4463892067E+002 0.279
0.974 1.151
223.000 9.308 253.501 0.309 4.5863454936E+003 5.4990586545E+002 -1.4519956438E+002 0.278
0.973 1.151
223.750 9.178 253.736 0.312 4.4718518878E+003 5.3353851170E+002 -1.5178324096E+002 0.272
0.973 1.152
224.500 9.047 253.969 0.308 4.3586706322E+003 5.1739165957E+002 -1.4996802972E+002 0.267
0.973 1.153
225.807 8.813 254.370 0.320 4.1647940765E+003 4.8975251288E+002 -1.5760767711E+002 0.257
0.973 1.156
226.630 8.671 254.651 0.343 4.0302864613E+003 4.7054457422E+002 -1.6353146091E+002 0.250
0.974 1.159
227.210 8.571 254.851 0.341 3.9354046502E+003 4.5696300736E+002 -1.6235747988E+002 0.245
0.975 1.161
228.760 8.300 255.378 0.358 3.6888531749E+003 4.2169710258E+002 -1.6472077389E+002 0.232
0.980 1.169
230.319 8.084 255.965 0.384 3.4231330538E+003 3.8392298649E+002 -1.7824644891E+002 0.216
0.987 1.180
230.870 8.024 256.189 0.390 3.3233820307E+003 3.6984038969E+002 -1.7569923081E+002 0.210
0.990 1.185
231.780 7.881 256.534 0.403 3.1715423409E+003 3.4842917812E+002 -1.7066169254E+002 0.201
0.996 1.192
233.339 7.694 257.185 0.413 2.8954365563E+003 3.1022591104E+002 -1.7292295770E+002 0.184
1.009 1.210
234.800 7.507 257.783 0.396 2.6485229953E+003 2.7658185368E+002 -1.5480268654E+002 0.168
1.022 1.228
235.521 7.386 258.050 0.358 2.5419896746E+003 2.6238134633E+002 -1.4400697882E+002 0.162
1.029 1.237
237.080 7.059 258.599 0.357 2.3301557971E+003 2.3491417299E+002 -1.3935983572E+002 0.149
1.044 1.258
237.400 7.000 258.720 0.354 2.2853589590E+003 2.2925461609E+002 -1.3736582009E+002 0.147
1.047 1.262
238.959 6.667 259.264 0.340 2.0917948543E+003 2.0552590456E+002 -1.1584912277E+002 0.136
1.064 1.285
239.994 6.422 259.601 0.326 1.9775804549E+003 1.9201236594E+002 -1.0839668496E+002 0.130
1.074 1.300
240.000 6.421 259.603 0.327 1.9769657564E+003 1.9193997768E+002 -1.0837250596E+002 0.130
1.074 1.301
240.970 6.166 259.920 0.347 1.8740811244E+003 1.8008457900E+002 -1.1082769836E+002 0.125
1.085 1.315
241.750 5.996 260.210 0.365 1.7846492997E+003 1.6991865223E+002 -1.1149360877E+002 0.120
1.094 1.328
243.309 5.642 260.773 0.357 1.6206558199E+003 1.5181903589E+002 -9.1283113806E+001 0.112
1.111 1.352
243.500 5.591 260.835 0.357 1.6035719301E+003 1.4998351973E+002 -9.0967547847E+001 0.111
1.113 1.355
244.331 5.405 261.138 0.379 1.5229296984E+003 1.4131992384E+002 -9.7553140594E+001 0.107
1.121 1.367
245.891 5.049 261.742 0.399 1.3691879735E+003 1.2490173256E+002 -9.9160678691E+001 0.099
1.136 1.389

247.000	4.826	262.203	0.438	1.2587429689E+003	1.1316030025E+002	-9.9697708228E+001	0.093
1.147	1.405						
248.559	4.575	262.912	0.455	1.1029867800E+003	9.6694619359E+001	-9.6594082213E+001	0.082
1.159	1.423						
248.758	4.543	263.002	0.471	1.0839136734E+003	9.4682369451E+001	-9.5911727660E+001	0.081
1.160	1.426						
250.317	4.267	263.740	0.492	9.3758732543E+002	7.9354383561E+001	-9.3883703202E+001	0.070
1.169	1.440						
251.876	4.051	264.538	0.514	7.9112818059E+002	6.4214864395E+001	-8.9167064595E+001	0.059
1.177	1.453						
252.500	3.970	264.862	0.502	7.3669454490E+002	5.8710045054E+001	-8.4841958608E+001	0.054
1.179	1.458						
253.585	3.799	265.396	0.513	6.4922187980E+002	4.9867230086E+001	-8.2363542226E+001	0.047
1.181	1.463						
255.144	3.565	266.220	0.551	5.1690978397E+002	3.6356037010E+001	-8.3818366287E+001	0.043
1.179	1.463						
256.703	3.402	267.114	0.556	3.8782612266E+002	2.3772526759E+001	-7.5985700443E+001	0.043
1.175	1.460						
258.200	3.193	267.919	0.542	2.8387289653E+002	1.4551212573E+001	-6.6800715598E+001	0.043
1.176	1.461						
259.072	3.080	268.398	0.512	2.2694600662E+002	9.9602570869E+000	-5.9702233463E+001	0.043
1.182	1.470						
260.632	2.751	269.165	0.539	1.4931160354E+002	5.1672100102E+000	-4.8960034686E+001	0.043
1.224	1.525						
262.191	2.569	270.079	0.525	7.4259359255E+001	2.1045186029E+000	-3.6056183236E+001	0.043
1.318	1.637						
263.250	2.286	270.541	0.525	4.4762036235E+001	1.2769921940E+000	-2.8199526348E+001	0.043
1.380	1.712						

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)
66.598	1.559	1.873	-33.638	-4.784	-8.960	38.011	71.191
68.158	0.072	0.087	-33.638	-9.791	-0.851	38.041	3.308
68.230	1.559	1.873	-33.638	-14.797	-27.713	38.187	71.522
69.789	0.711	0.854	-33.638	-21.762	-18.577	38.585	32.938
70.500	1.559	1.873	-33.638	-28.726	-53.802	39.717	74.387
72.059	1.559	1.873	-33.638	-38.295	-71.723	40.383	75.634
73.619	0.899	1.080	-33.638	-45.838	-49.517	40.808	44.083
74.518	0.482	0.579	-33.638	-50.251	-29.095	103.903	60.159
75.000	1.559	1.873	-33.638	-56.673	-106.144	104.677	196.052
76.559	0.301	0.361	-33.638	-62.362	-22.524	105.609	38.144
76.860	0.890	1.069	-33.638	-66.003	-70.558	106.996	114.379
77.750	1.559	1.873	-33.638	-73.495	-137.649	106.634	199.717
79.309	1.191	1.430	-33.638	-81.906	-117.140	107.994	154.451
80.500	1.559	1.873	-33.638	-89.886	-168.350	109.015	204.177
82.059	0.691	0.830	-33.638	-96.148	-79.766	109.219	90.611
82.750	0.806	0.968	-33.638	-100.311	-97.057	111.710	108.086
83.556	1.444	1.710	-32.340	-103.855	-177.555	112.652	192.595
85.000	1.559	1.846	-32.340	-112.534	-207.689	114.807	211.883
86.559	0.981	1.161	-32.340	-120.605	-139.992	115.251	133.777
87.540	0.460	0.544	-32.340	-125.184	-68.156	117.096	63.753
88.000	1.559	1.846	-32.340	-131.604	-242.883	116.860	215.672
89.559	1.441	1.705	-32.340	-141.142	-240.673	118.432	201.950
91.000	0.368	0.435	-32.340	-147.026	-63.986	118.654	51.638
91.368	1.559	1.786	-29.199	-143.036	-255.501	118.946	212.471
92.927	1.559	1.786	-29.199	-152.428	-272.278	121.273	216.627
94.486	0.014	0.016	-29.199	-157.165	-2.468	119.574	1.877
94.500	1.559	1.786	-29.199	-161.903	-289.203	121.599	217.209
96.059	0.397	0.455	-29.199	-167.794	-76.282	122.726	55.793
96.456	1.544	1.700	-24.772	-151.732	-257.991	120.768	205.342
98.000	0.960	1.057	-24.772	-157.485	-166.507	121.251	128.198

98.960	1.540	1.696	-24.772	-163.223	-276.837	120.718	204.746
100.500	0.043	0.047	-24.772	-166.855	-7.818	120.530	5.647
100.543	1.559	1.647	-18.788	-130.895	-215.593	118.812	195.691
102.102	0.898	0.949	-18.788	-134.436	-127.541	120.575	114.391
103.000	1.559	1.647	-18.788	-138.143	-227.530	119.004	196.007
104.559	0.147	0.155	-18.788	-140.783	-21.790	117.720	18.220
104.706	1.559	1.606	-13.789	-102.188	-164.071	114.875	184.441
106.265	0.735	0.757	-13.789	-104.305	-78.926	113.600	85.960
107.000	1.300	1.338	-13.789	-106.182	-142.092	113.095	151.342
108.300	1.559	1.576	-8.425	-57.928	-91.313	107.426	169.336
109.859	1.141	1.154	-8.425	-58.987	-68.043	106.800	123.196
111.000	1.250	1.264	-8.425	-59.948	-75.752	106.262	134.277
112.250	0.068	0.069	-8.425	-60.489	-4.185	104.916	7.260
112.318	1.182	1.184	-3.991	-14.877	-17.621	102.510	121.416
113.500	0.030	0.030	-3.991	-14.974	-0.450	102.488	3.082
113.530	1.559	1.563	-3.991	-15.074	-23.562	102.255	159.833
115.089	1.559	1.563	-3.991	-15.270	-23.868	102.321	159.937
116.649	0.067	0.068	-3.991	-15.372	-1.039	102.057	6.900
116.716	0.534	0.534	-0.861	18.727	10.001	100.443	53.639
117.250	1.559	1.559	-0.861	18.852	29.399	100.472	156.684
118.809	1.559	1.559	-0.861	19.037	29.688	100.435	156.626
120.369	0.631	0.631	-0.861	19.168	12.104	100.439	63.424
121.000	1.309	1.310	-0.861	19.293	25.266	100.435	131.532
122.309	1.559	1.559	-0.116	27.928	43.548	100.057	156.019
123.869	1.559	1.559	-0.116	28.209	43.986	100.048	156.005
125.428	1.559	1.559	-0.116	28.490	44.424	100.043	155.997
126.987	0.013	0.013	-0.116	28.631	0.362	100.038	1.264
127.000	0.283	0.283	-0.116	28.658	8.101	100.038	28.280
127.283	1.559	1.559	0.765	39.128	61.018	99.760	155.569
128.842	0.158	0.158	0.765	39.322	6.214	99.822	15.775
129.000	1.559	1.559	0.765	39.516	61.623	99.799	155.630
130.559	1.359	1.359	0.765	39.847	54.142	99.809	135.616
131.918	1.082	1.083	1.706	51.363	55.603	99.618	107.841
133.000	1.559	1.560	1.706	51.678	80.617	99.650	155.453
134.559	1.559	1.560	1.706	52.021	81.153	99.692	155.519
136.119	0.242	0.242	1.706	52.220	12.662	99.726	24.181
136.361	1.034	1.035	2.689	64.291	66.552	99.601	103.104
137.395	1.559	1.561	2.689	64.600	100.842	99.674	155.593
138.954	1.559	1.561	2.689	64.972	101.422	99.810	155.806
140.514	0.280	0.281	2.689	65.191	18.287	99.895	28.022
140.794	0.996	0.998	3.615	76.713	76.574	99.879	99.698
141.790	1.559	1.562	3.615	77.029	120.351	99.939	156.145
143.349	0.046	0.046	3.615	77.229	3.536	99.972	4.578
143.395	1.559	1.562	3.615	77.428	120.975	100.021	156.274
144.954	0.046	0.046	3.615	77.628	3.555	100.055	4.582
145.000	0.146	0.146	3.615	77.644	11.334	100.060	14.606
145.146	1.559	1.564	4.537	89.145	139.440	100.113	156.596
146.705	0.005	0.005	4.537	89.237	0.449	100.144	0.504
146.710	1.559	1.564	4.537	89.329	139.729	100.213	156.754
148.269	1.321	1.325	4.537	89.500	118.585	100.314	132.912
149.590	0.045	0.045	5.415	100.436	4.528	100.411	4.527
149.635	1.559	1.566	5.415	100.507	157.423	100.543	157.480
151.194	1.559	1.566	5.415	100.646	157.640	100.741	157.789
152.754	1.397	1.404	5.415	100.777	141.449	100.859	141.563
154.151	0.119	0.120	6.218	110.744	13.267	101.036	12.104
154.270	1.559	1.569	6.218	110.731	173.684	101.124	158.616
155.829	1.441	1.449	6.218	110.698	160.427	101.234	146.711
157.270	1.559	1.569	6.218	110.666	173.583	101.220	158.766
158.829	0.164	0.165	6.218	110.647	18.267	101.205	16.708
158.993	1.277	1.286	7.035	120.582	155.101	101.350	130.363
160.270	1.210	1.219	7.035	120.378	146.762	101.447	123.682
161.480	0.190	0.191	7.035	120.194	23.010	101.358	19.404
161.670	1.020	1.028	7.035	120.036	123.366	101.426	104.239
162.690	0.864	0.870	7.035	119.987	104.404	101.464	88.287
163.554	0.291	0.294	7.922	130.788	38.481	101.666	29.913
163.845	1.155	1.166	7.922	130.899	152.644	101.990	118.933
165.000	1.559	1.574	7.922	130.745	205.835	102.179	160.862
166.559	0.191	0.193	7.922	130.474	25.121	102.338	19.704
166.750	1.248	1.260	7.922	130.251	164.179	102.317	128.969
167.998	0.502	0.508	8.846	140.925	71.531	102.803	52.181
168.500	1.559	1.578	8.846	140.394	221.551	102.947	162.457
170.059	1.559	1.578	8.846	139.534	220.194	103.124	162.737
171.619	0.732	0.741	8.846	138.902	102.936	103.449	76.663
172.351	1.559	1.582	9.769	148.822	235.472	103.769	164.187
173.910	1.559	1.582	9.769	147.785	233.831	103.896	164.388
175.469	0.381	0.386	9.769	147.139	56.818	103.336	39.903
175.850	0.933	0.947	9.769	146.702	138.944	103.516	98.041
176.783	1.277	1.299	10.701	156.294	203.059	104.023	135.148
178.060	1.559	1.587	10.701	155.174	246.245	103.611	164.420

179.619	1.543	1.570	10.701	153.949	241.726	103.128	161.929
181.162	1.559	1.592	11.614	162.441	258.589	103.131	164.174
182.721	0.479	0.489	11.614	161.503	78.901	102.990	50.315
183.200	1.559	1.592	11.614	160.702	255.821	103.071	164.078
184.759	0.900	0.919	11.614	159.787	146.871	103.106	94.772
185.660	0.190	0.195	12.476	168.298	32.811	103.184	20.117
185.850	1.559	1.597	12.476	167.539	267.563	103.160	164.748
187.409	1.091	1.117	12.476	166.390	185.872	102.915	114.965
188.500	0.420	0.430	12.476	165.773	71.309	102.834	44.235
188.920	1.411	1.445	12.476	165.145	238.614	102.745	148.454
190.331	1.289	1.324	13.245	171.821	227.573	102.877	136.258
191.620	1.559	1.602	13.245	170.689	273.429	103.323	165.515
193.179	1.559	1.602	13.245	169.450	271.444	103.314	165.500
194.739	0.001	0.001	13.245	168.830	0.243	103.078	0.149
194.740	0.629	0.646	13.245	168.605	108.903	103.100	66.593
195.369	1.021	1.057	14.842	183.101	193.451	103.804	109.671
196.390	0.480	0.497	14.842	182.384	90.566	103.849	51.568
196.870	1.559	1.613	14.842	181.410	292.636	104.080	167.893
198.429	0.571	0.590	14.842	180.393	106.504	104.882	61.922
199.000	0.877	0.907	14.842	179.917	163.176	105.609	95.782
199.877	1.559	1.628	16.683	195.667	318.510	106.388	173.180
201.436	1.559	1.628	16.683	194.529	316.658	107.196	174.496
202.995	0.140	0.146	16.683	193.909	28.282	107.572	15.690
203.135	1.075	1.122	16.683	193.466	217.043	107.397	120.485
204.210	1.559	1.646	18.655	208.840	343.703	109.777	180.668
205.769	1.501	1.584	18.655	207.220	328.300	110.012	174.292
207.270	1.094	1.155	18.655	205.657	237.492	109.312	126.233
208.364	1.559	1.665	20.569	218.358	363.670	109.749	182.784
209.923	0.357	0.381	20.569	216.642	82.510	109.747	41.798
210.280	0.355	0.379	20.569	216.005	81.903	109.382	41.475
210.635	1.559	1.665	20.569	214.291	356.897	109.308	182.050
212.194	0.538	0.574	20.569	212.415	122.030	110.430	63.441
212.732	1.268	1.372	22.446	223.734	306.910	111.184	152.518
214.000	1.559	1.687	22.446	221.323	373.397	110.891	187.086
215.559	0.331	0.358	22.446	220.094	78.752	110.810	39.649
215.890	1.016	1.099	22.446	219.219	240.926	110.530	121.475
216.906	0.874	0.959	24.274	229.452	220.052	111.184	106.629
217.780	1.559	1.711	24.274	227.325	388.847	111.164	190.149
219.339	1.051	1.153	24.274	225.002	259.338	111.739	128.791
220.390	0.869	0.953	24.274	223.293	212.815	111.983	106.728
221.259	1.559	1.733	25.900	230.115	398.881	111.213	192.777
222.818	0.182	0.202	25.900	228.236	46.149	110.294	22.301
223.000	0.750	0.834	25.900	226.972	189.236	110.962	92.514
223.750	0.750	0.834	25.900	224.836	187.455	110.814	92.390
224.500	1.307	1.453	25.900	221.579	321.956	110.622	160.734
225.807	0.823	0.926	27.255	224.670	207.979	112.148	103.816
226.630	0.580	0.652	27.255	222.059	144.879	112.187	73.195
227.210	1.550	1.744	27.255	218.096	380.268	111.841	195.004
228.760	1.559	1.754	27.255	212.615	372.935	112.608	197.519
230.319	0.551	0.620	27.255	209.100	129.618	113.300	70.233
230.870	0.910	1.033	28.249	210.861	217.742	112.546	116.218
231.780	1.559	1.770	28.249	206.411	365.374	113.059	200.129
233.339	1.461	1.658	28.249	200.967	333.243	112.277	186.177
234.800	0.721	0.818	28.249	196.943	161.173	110.499	90.430
235.521	1.559	1.789	29.350	196.434	351.406	109.621	196.104
237.080	0.320	0.367	29.350	192.509	70.630	109.666	40.235
237.400	1.559	1.789	29.350	188.584	337.363	108.311	193.761
238.959	1.035	1.187	29.350	183.166	217.500	107.131	127.213
239.994	0.006	0.007	30.494	184.618	1.215	107.135	0.705
240.000	0.970	1.126	30.494	182.094	204.984	106.832	120.261
240.970	0.780	0.905	30.494	177.563	160.731	107.285	97.115
241.750	1.559	1.810	30.494	171.506	310.355	106.488	192.700
243.309	0.191	0.221	30.494	166.974	36.953	105.380	23.322
243.500	0.831	0.965	30.494	164.513	158.729	105.825	102.104
244.331	1.559	1.831	31.624	161.498	295.739	106.010	194.127
245.891	1.109	1.303	31.624	154.718	201.560	106.041	138.146
247.000	1.559	1.831	31.624	149.737	274.202	106.027	194.159
248.559	0.198	0.233	31.624	147.300	34.306	105.791	24.639
248.758	1.559	1.860	33.032	147.473	274.289	105.743	196.674
250.317	1.559	1.860	33.032	142.527	265.089	105.672	196.543
251.876	0.624	0.744	33.032	139.064	103.471	105.156	78.241
252.500	1.085	1.294	33.032	136.347	176.434	104.762	135.563
253.585	1.559	1.884	34.133	133.721	251.905	105.145	198.073
255.144	1.559	1.884	34.133	128.251	241.601	104.792	197.408
256.703	1.497	1.808	34.133	122.891	222.189	103.659	187.416
258.200	0.872	1.054	34.133	118.400	124.796	103.124	108.695
259.072	1.559	1.906	35.115	114.218	217.725	101.849	194.147
260.632	1.559	1.906	35.115	107.070	204.099	101.181	192.875
262.191	1.059	1.295	35.115	101.069	130.839	100.470	130.064

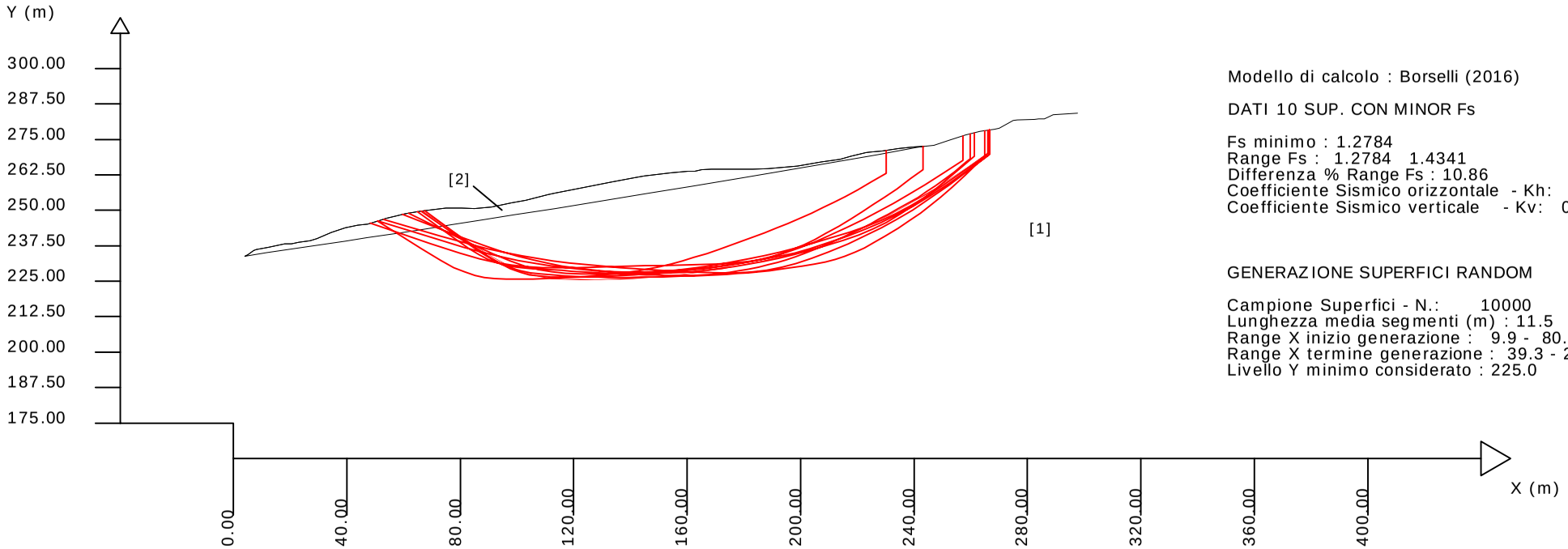
263.250	1.559	1.906	35.115	94.108	179.391	100.493	191.561

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

Data : 10/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Borselli (2016)

DATI 10 SUP. CON MINOR Fs

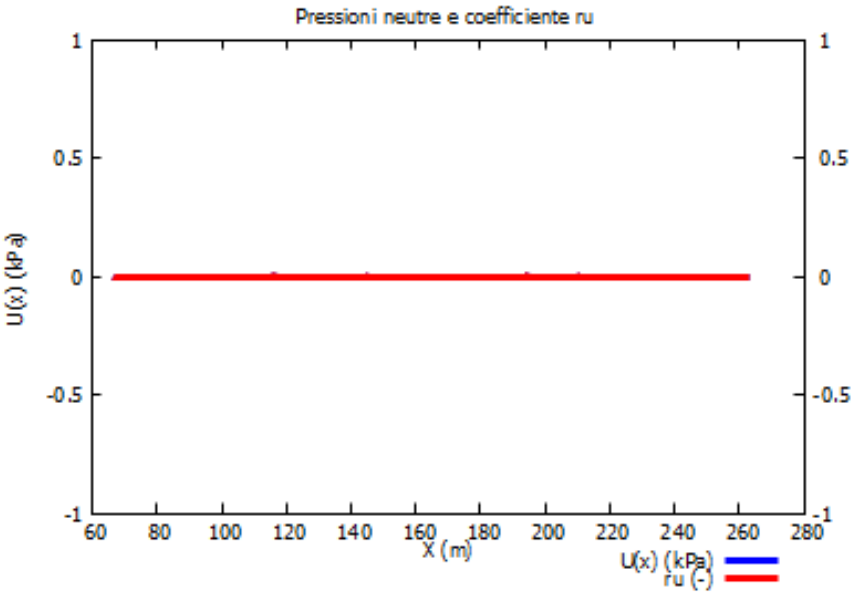
Fs minimo : 1.2784
Range Fs : 1.2784 1.4341
Differenza % Range Fs : 10.86
Coefficiente Sismico orizzontale - Kh: 0.0450
Coefficiente Sismico verticale - Kv: 0.0225

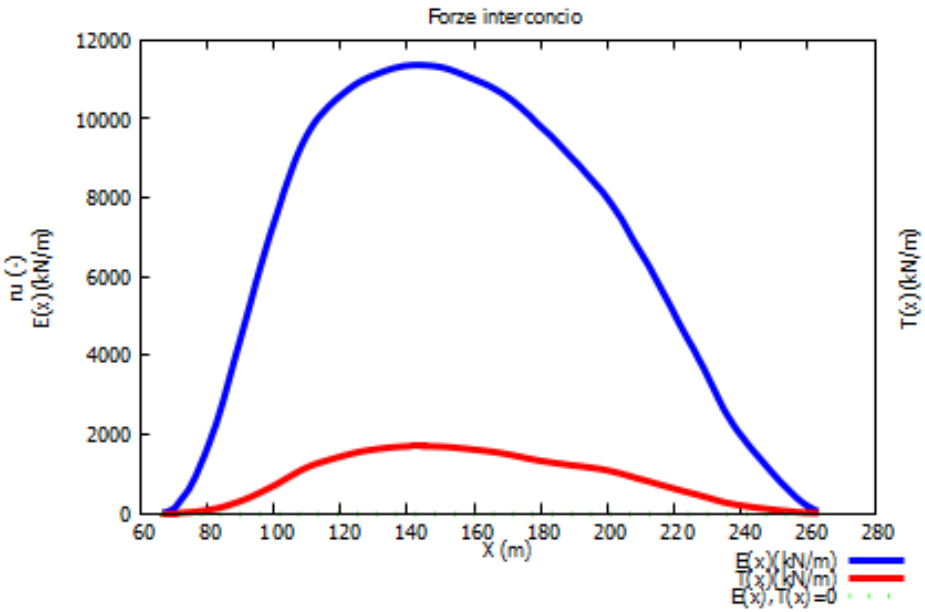
GENERAZIONE SUPERFICI RANDOM

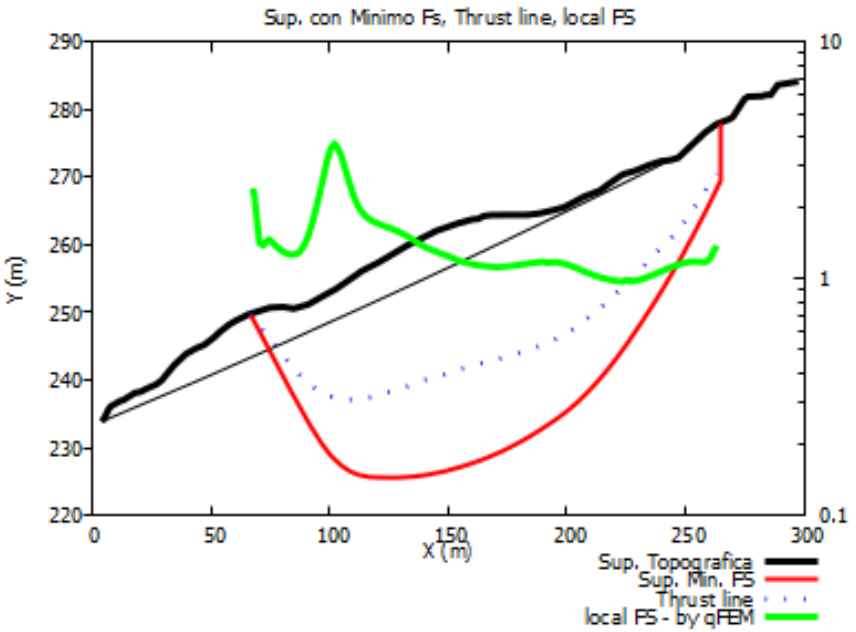
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 11.5
Range X inizio generazione : 9.9 - 80.0
Range X termine generazione : 39.3 - 291.9
Livello Y minimo considerato : 225.0

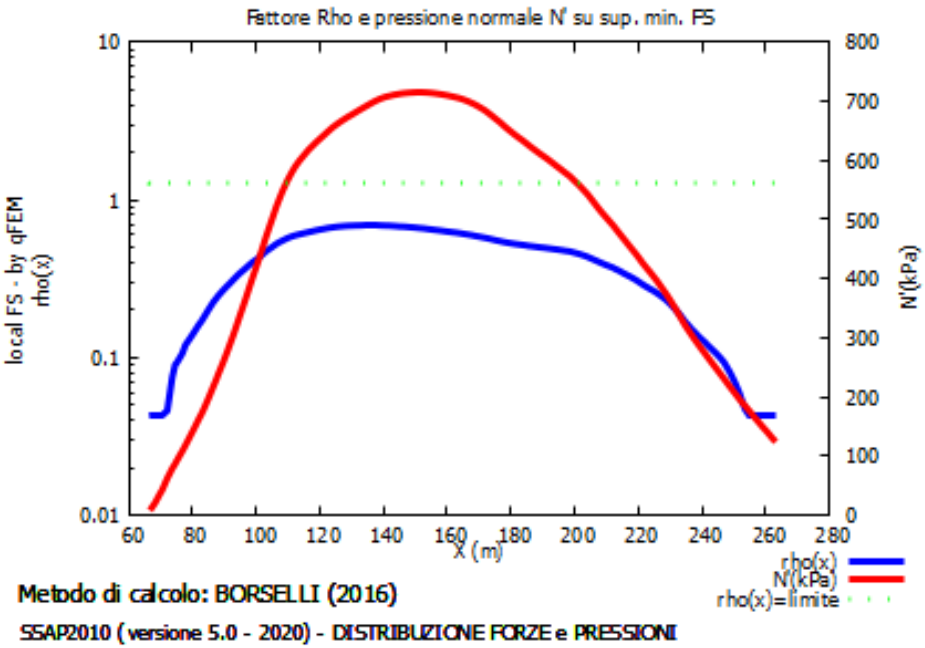
Parametri Geotecnici degli strati # ----------

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
2	0	0	38.00	18.00	20.00	0	0	0	0





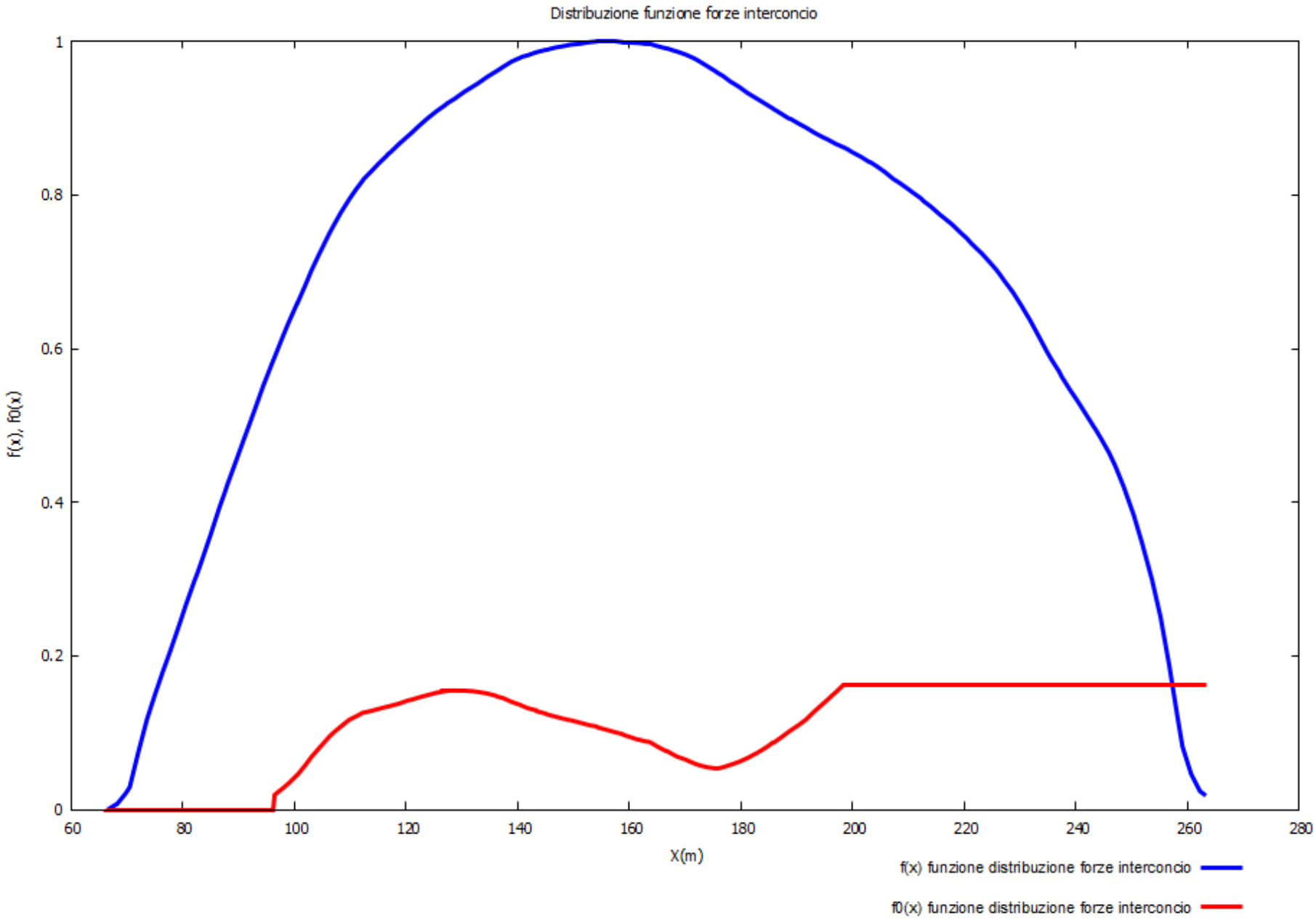


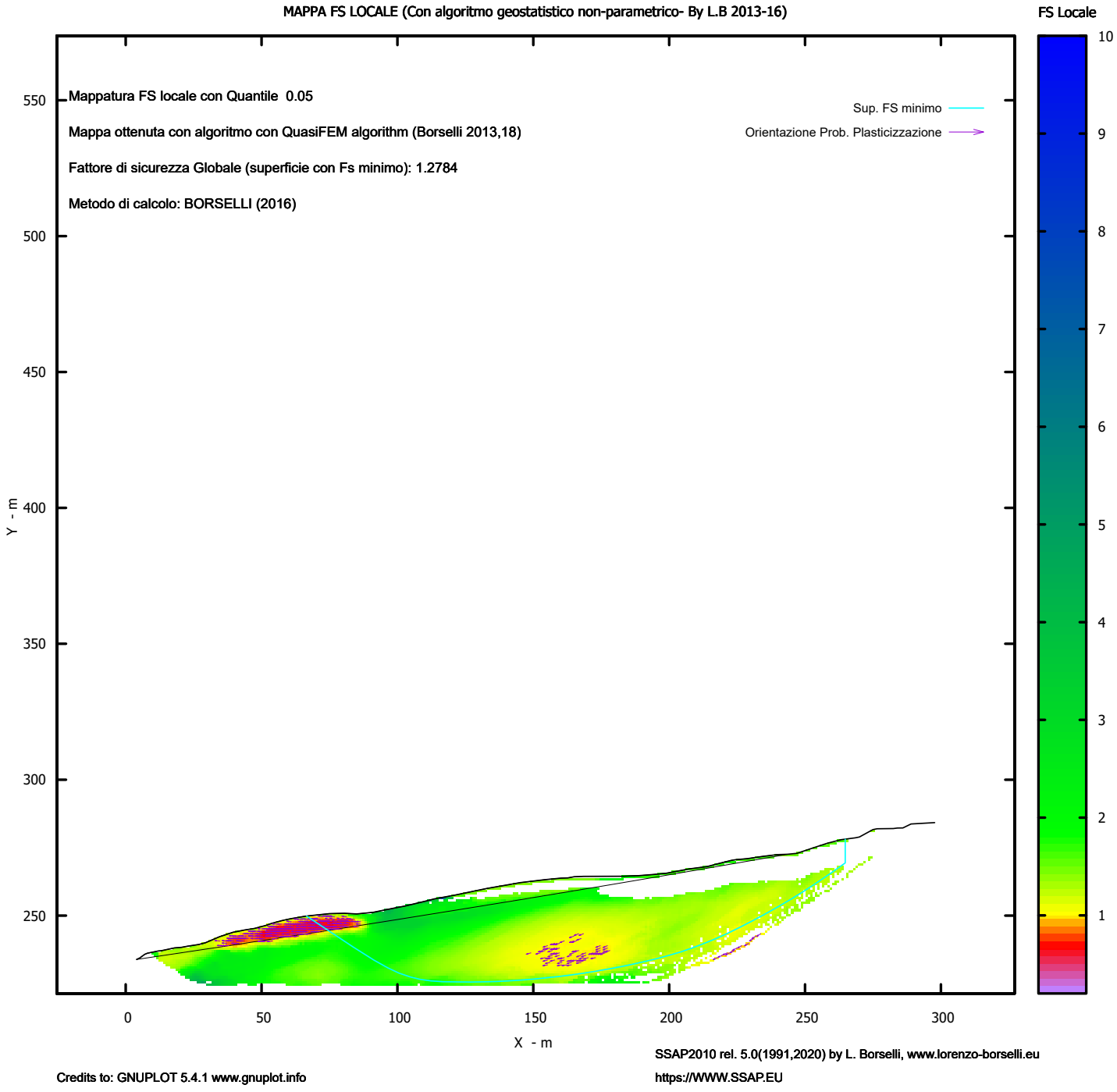


Metodo di calcolo: BORSELLI (2016)

SSAP2010 (versione 5.0 - 2020) - DISTRIBUZIONE FORZE e PRESSIONI

10/11/21 16:56

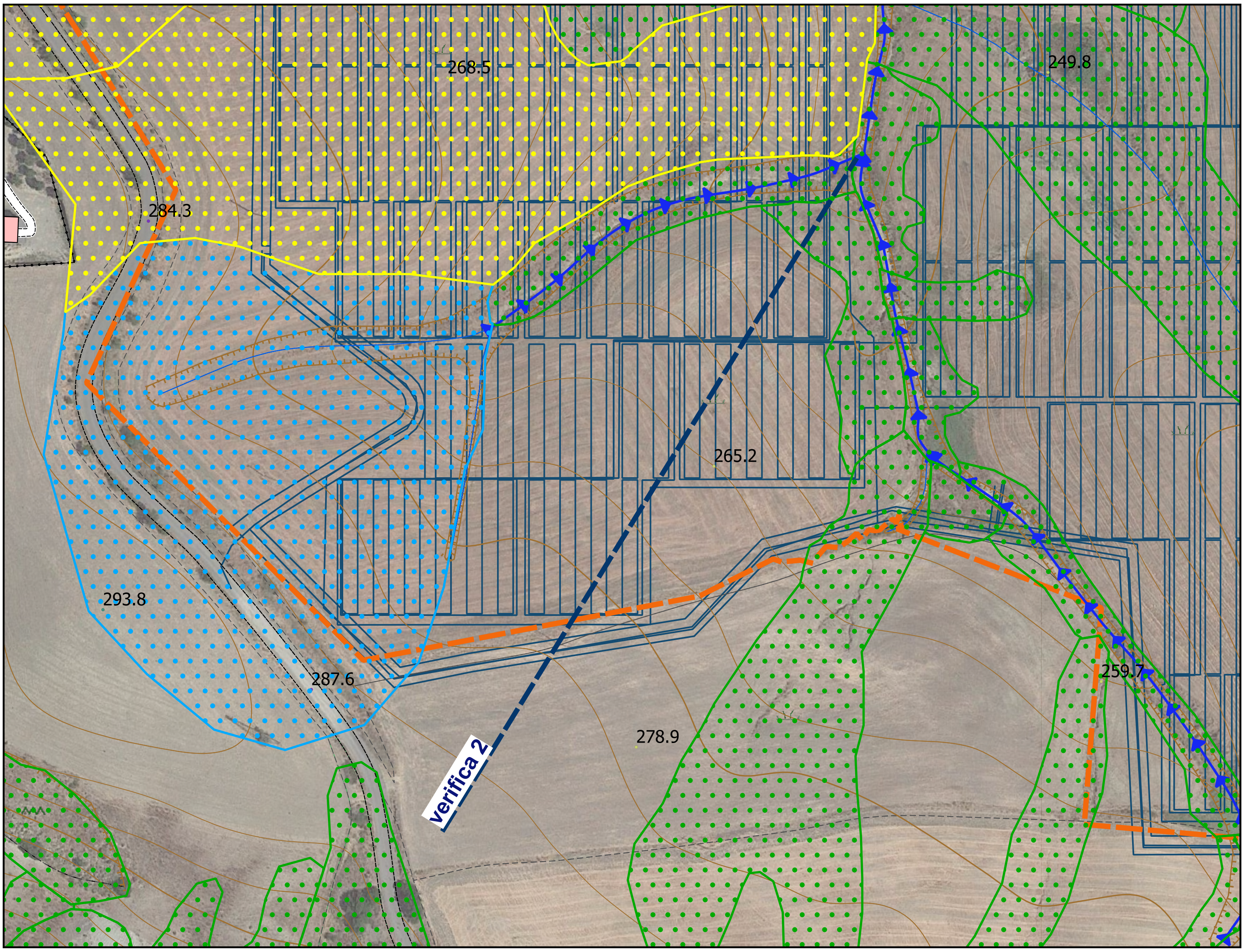

Distribuzione funzione forze interconcio
1
0.8
0.6
0.4
0.2
0
f(x), f0(x)
60
80
100
120
140
160
180
200
220
240
260
280
X(m)
f(x) funzione distribuzione forze interconcio
f0(x) funzione distribuzione forze interconcio

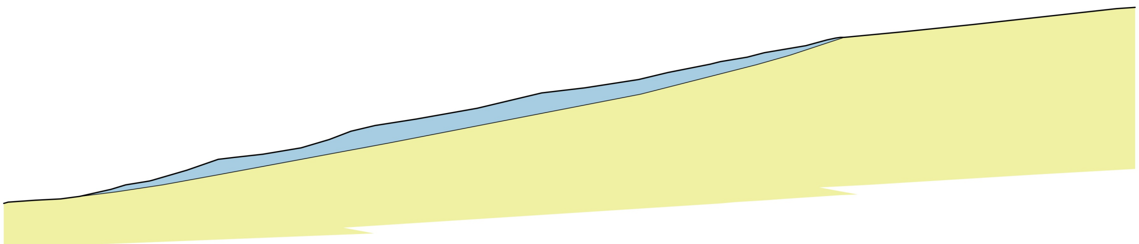

MAPPA FS LOCALE (Con algoritmo geostatistico non-parametrico- By L.B 2013-16)
FS Locale
Mappatura FS locale con Quantile 0.05
Mappa ottenuta con algoritmo con QuasiFEM algorithm (Borselli 2013,18)
Fattore di sicurezza Globale (superficie con Fs minimo): 1.2784
Metodo di calcolo: BORSELLI (2016)
Sup. FS minimo
Orientazione Prob. Plasticizzazione
Y - m
X - m
550
500
450
400
350
300
250
0
50
100
150
200
250
300
10
9
8
7
6
5
4
3
2
1
Credits to: GNUPLOT 5.4.1 www.gnuplot.info
SSAP2010 rel. 5.0(1991,2020) by L. Borselli, www.lorenzo-borselli.eu
https://WWW.SSAP.EU

SEZIONE DI VERIFICA N. 2

CONDIZIONI DRENATE

SEZIONE DI VERIFICA N. 2





220

DISTANZE PROGRESSIVE	0, 1, 7.12, 12.75, 17, 24, 27.25, [illegible], 41, 48, 51.5, 58, 66.54, 72.78, 77.7, 83, 92.19, 105.86, 120.26, 130.02, 142, 148.5, 157.91, 160.25, 166.23, 170, 179.28, 184, [illegible], 187.87, 201.5, 216.5, 248.86, 252.95
DISTANZE PARZIALI	1, 6.12, 5.63, 4.25, 7, 3.25, 5.31, 0.56, 7.88, 7, 3.5, 6.5, 8.54, 6.24, 4.92, 5.3, 9.19, 13.68, 14.4, 9.75, 11.98, 6.5, 9.41, 2.34, 5.98, 3.77, 9.28, 4.72, 2, [illegible], 0.87, 13.63, 15, 32.36, 4.09
QUOTE	243.33, [illegible], 243.99, 244.24, 244.85, 246.4, 247.4, [illegible], 250.71, 253.14, 253.56, 254.19, 255.75, 257.52, 259.44, 260.68, 262.16, 264.57, 267.92, 269.14, 271.02, 272.59, 274.43, 274.92, 275.97, 276.98, 278.52, 279.78, [illegible], 281.6, 283.26, 286.85, 287.02

ARGILLE MARNOSE DEL T. SAURO (Pliocene sup.)
Argille marnose azzurre o grigio verdi a frattura concoide con fitte intercalazioni sottili di sabbie giallastre

CORPI DI FRANA (Olocene)
Coperture di natura limoso argillosa

Report elaborazioni

SSAP 5.0 - Slope Stability Analysis Program (1991,2020)
WWW.SSAP.EU
Build No. 11719
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: 12 settembre 2020

File report: C:\SSAP\CRACO\SERRACARUSOMOR\VERIFICA 2\DRENATA\MORG\MORG.txt
Data: 10/11/2021
Localita' :
Descrizione:
Modello pendio: VERIFICA2DRENATA.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	243.32	12.75	244.24	-	-	-	-
1.00	243.53	19.45	245.08	-	-	-	-
7.12	243.99	25.18	245.86	-	-	-	-
12.75	244.24	35.52	247.43	-	-	-	-
17.00	244.85	48.12	249.63	-	-	-	-
24.00	246.40	86.42	256.75	-	-	-	-
27.25	247.40	142.37	267.72	-	-	-	-
32.56	248.32	168.24	274.24	-	-	-	-
33.12	248.40	175.79	276.36	-	-	-	-
41.00	250.71	187.87	280.41	-	-	-	-
48.00	253.14	187.00	280.41	-	-	-	-
51.50	253.56	186.00	280.27	-	-	-	-
58.00	254.19	184.00	279.78	-	-	-	-
66.54	255.75	179.28	278.52	-	-	-	-
72.78	257.52	170.00	276.98	-	-	-	-
77.70	259.44	166.23	275.97	-	-	-	-
83.00	260.68	160.25	274.92	-	-	-	-
92.19	262.16	157.91	274.43	-	-	-	-
105.86	264.57	148.50	272.59	-	-	-	-
120.26	267.92	142.00	271.02	-	-	-	-
130.02	269.14	130.02	269.14	-	-	-	-
142.00	271.02	120.26	267.92	-	-	-	-
148.50	272.59	105.86	264.57	-	-	-	-
157.91	274.43	92.19	262.16	-	-	-	-
160.25	274.92	83.00	260.68	-	-	-	-
166.23	275.97	77.70	259.44	-	-	-	-
170.00	276.98	72.78	257.52	-	-	-	-
179.28	278.52	66.54	255.75	-	-	-	-
184.00	279.78	58.00	254.19	-	-	-	-
186.00	280.27	51.50	253.56	-	-	-	-
187.00	280.41	48.00	253.14	-	-	-	-
187.87	280.41	41.00	250.71	-	-	-	-
201.50	281.60	33.12	248.40	-	-	-	-
216.50	283.26	32.56	248.32	-	-	-	-
248.86	286.85	27.25	247.40	-	-	-	-
252.95	287.02	24.00	246.40	-	-	-	-
-	-	17.00	244.85	-	-	-	-
-	-	12.75	244.24	-	-	-	-

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
STRATO 2	22.00	5.00	0.00	18.00	20.00	1.322	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
      METODO DI RICERCA: CONVEX RANDOM       - Chen     (1992)
      FILTRAGGIO SUPERFICI : ATTIVATO
      COORDINATE X1,X2,Y OSTACOLO :         0.00            0.00            0.00
      LUNGHEZZA MEDIA SEGMENTI (m):               10.1   (+/-) 50%
      INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax):      5.06          232.71
      LIVELLO MINIMO CONSIDERATO (Ymin):                   203.99
      INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax):       30.35          247.89

  *** TOTALE SUPERFICI GENERATE :        10000

  ------------ 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 : 0.0450
      COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0225
      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)    1.7342  - Min. -    X       Y       Lambda=  0.3697
                                              65.31  255.52
                                              66.43  254.98
                                              66.96  254.74
                                              67.31  254.60
                                              67.60  254.51
                                              67.89  254.44
                                              68.14  254.40
                                              68.42  254.37
                                              68.73  254.36
                                              69.10  254.37
                                              69.43  254.38
                                              69.73  254.40
                                              70.03  254.43
                                              70.32  254.46
                                              70.61  254.50
                                              70.91  254.55
                                              71.21  254.60
                                              71.53  254.67
                                              71.84  254.73
                                              72.15  254.79
                                              72.46  254.86
                                              72.76  254.92
                                              73.07  254.98
                                              73.38  255.04
                                              73.68  255.11
                                              73.99  255.17
                                              74.30  255.24
                                              74.60  255.30
                                              74.89  255.37
                                              75.20  255.44
                                              75.50  255.52
                                              75.80  255.60
                                              76.11  255.68
                                              76.44  255.77
                                              76.74  255.86
                                              77.04  255.96
                                              77.33  256.06
```

77.63 256.17
77.92 256.28
78.22 256.41
78.52 256.54
78.84 256.69
79.16 256.84
79.46 256.98
79.76 257.13
80.07 257.28
80.37 257.44
80.67 257.59
80.97 257.75
81.28 257.92
81.59 258.08
81.89 258.25
82.20 258.41
82.50 258.57
82.81 258.74
83.12 258.90
83.42 259.07
83.73 259.23
84.04 259.40
84.34 259.57
84.63 259.74
84.94 259.92
85.27 260.12
85.65 260.35
85.90 260.51
85.90 261.15

Fattore di sicurezza (FS) 1.7420 - N.2 -- X Y Lambda= 0.3370
62.36 254.99
63.49 254.31
64.02 254.01
64.37 253.84
64.66 253.71
64.95 253.62
65.20 253.56
65.49 253.51
65.79 253.47
66.17 253.45
66.50 253.43
66.81 253.43
67.10 253.43
67.40 253.45
67.68 253.47
67.97 253.50
68.27 253.54
68.60 253.60
68.92 253.65
69.23 253.70
69.54 253.75
69.85 253.80
70.15 253.85
70.46 253.90
70.78 253.95
71.09 254.00
71.39 254.05
71.69 254.11
71.99 254.17
72.29 254.23
72.59 254.30
72.89 254.38
73.20 254.46
73.53 254.55
73.84 254.64
74.14 254.74
74.43 254.83
74.73 254.94
75.03 255.05
75.32 255.17
75.63 255.30
75.94 255.44
76.26 255.58
76.57 255.71
76.88 255.85
77.18 255.98
77.49 256.12

77.80	256.26
78.11	256.39
78.42	256.53
78.73	256.67
79.03	256.81
79.32	256.95
79.63	257.10
79.93	257.26
80.23	257.41
80.53	257.58
80.85	257.75
81.16	257.92
81.47	258.09
81.77	258.27
82.07	258.44
82.38	258.62
82.68	258.80
82.98	258.98
83.29	259.17
83.60	259.35
83.91	259.54
84.21	259.72
84.52	259.91
84.86	260.12
85.25	260.35
85.25	261.04

Fattore di sicurezza (FS) 1.7427 - N.3 -- X Y Lambda= 0.3559

64.97	255.46
66.42	254.68
67.09	254.34
67.52	254.15
67.87	254.04
68.22	253.96
68.53	253.92
68.87	253.91
69.24	253.93
69.71	253.98
70.14	254.02
70.54	254.07
70.93	254.11
71.31	254.16
71.69	254.21
72.07	254.27
72.46	254.33
72.85	254.39
73.24	254.45
73.62	254.51
74.00	254.57
74.39	254.64
74.77	254.71
75.16	254.78
75.56	254.85
75.96	254.92
76.34	255.00
76.72	255.09
77.08	255.18
77.46	255.28
77.83	255.39
78.20	255.50
78.58	255.63
78.99	255.77
79.38	255.91
79.77	256.05
80.16	256.18
80.54	256.32
80.93	256.46
81.32	256.60
81.71	256.75
82.12	256.90
82.50	257.05
82.87	257.20
83.24	257.36
83.61	257.54
83.98	257.72
84.36	257.91
84.76	258.13
85.19	258.36

85.58	258.59
85.95	258.83
86.31	259.07
86.69	259.34
87.09	259.64
87.56	260.02
88.23	260.58
88.76	261.04
88.76	261.61

Fattore di sicurezza (FS) 1.7448 - N.4 -- X Y Lambda= 0.3681

67.06	255.90
68.13	255.19
68.62	254.89
68.93	254.71
69.18	254.61
69.43	254.53
69.65	254.49
69.90	254.46
70.17	254.46
70.52	254.48
70.83	254.50
71.13	254.52
71.41	254.55
71.69	254.57
71.96	254.60
72.24	254.63
72.52	254.66
72.80	254.69
73.09	254.73
73.37	254.76
73.65	254.79
73.93	254.83
74.22	254.86
74.50	254.90
74.80	254.93
75.10	254.97
75.37	255.01
75.64	255.06
75.90	255.12
76.17	255.19
76.43	255.26
76.70	255.35
76.98	255.45
77.29	255.57
77.58	255.69
77.86	255.81
78.14	255.93
78.42	256.06
78.69	256.18
78.96	256.32
79.24	256.45
79.53	256.60
79.81	256.75
80.10	256.89
80.38	257.04
80.66	257.18
80.94	257.33
81.22	257.47
81.50	257.62
81.78	257.76
82.06	257.90
82.34	258.05
82.62	258.19
82.90	258.34
83.18	258.48
83.46	258.62
83.75	258.77
84.02	258.91
84.30	259.06
84.59	259.20
84.87	259.35
85.15	259.49
85.43	259.63
85.71	259.78
85.99	259.92
86.27	260.07
86.55	260.21

86.83	260.35
87.11	260.50
87.39	260.64
87.60	260.75
87.60	261.42

Fattore di sicurezza (FS) 1.7472 - N.5 -- Lambda= 0.3526

X	Y
65.83	255.62
67.91	254.91
68.88	254.60
69.53	254.42
70.06	254.32
70.60	254.25
71.08	254.23
71.61	254.24
72.18	254.28
72.88	254.36
73.48	254.44
74.03	254.54
74.56	254.65
75.10	254.79
75.62	254.94
76.16	255.11
76.72	255.32
77.35	255.57
77.94	255.81
78.50	256.05
79.05	256.29
79.61	256.54
80.15	256.81
80.71	257.08
81.27	257.37
81.86	257.68
82.44	257.99
83.00	258.30
83.55	258.62
84.11	258.94
84.73	259.31
85.42	259.73
86.40	260.34
86.93	260.66
86.93	261.31

Fattore di sicurezza (FS) 1.7491 - N.6 -- Lambda= 0.3516

X	Y
64.92	255.45
66.42	254.92
67.13	254.69
67.61	254.55
68.02	254.46
68.41	254.39
68.78	254.36
69.17	254.34
69.58	254.34
70.08	254.35
70.52	254.38
70.93	254.42
71.31	254.46
71.72	254.52
72.10	254.59
72.50	254.67
72.91	254.77
73.36	254.89
73.78	255.01
74.20	255.12
74.61	255.24
75.02	255.36
75.43	255.49
75.83	255.62
76.25	255.75
76.67	255.89
77.09	256.03
77.50	256.17
77.91	256.31
78.32	256.46
78.73	256.61
79.14	256.76
79.55	256.91

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                                    79.98  257.07
                                    80.39  257.23
                                    80.80  257.39
                                    81.21  257.55
                                    81.62  257.72
                                    82.03  257.89
                                    82.45  258.06
                                    82.88  258.24
                                    83.33  258.44
                                    83.74  258.63
                                    84.13  258.83
                                    84.51  259.03
                                    84.91  259.27
                                    85.34  259.54
                                    85.84  259.88
                                    86.56  260.40
                                    86.81  260.60
                                    86.81  261.29

Fattore di sicurezza (FS)    1.7493  - N.7 --    X       Y       Lambda=  0.3569
                                    65.94  255.64
                                    67.83  255.04
                                    68.72  254.78
                                    69.31  254.63
                                    69.81  254.54
                                    70.30  254.49
                                    70.75  254.47
                                    71.23  254.47
                                    71.75  254.50
                                    72.37  254.56
                                    72.92  254.63
                                    73.43  254.71
                                    73.92  254.80
                                    74.42  254.91
                                    74.90  255.03
                                    75.40  255.17
                                    75.92  255.34
                                    76.51  255.53
                                    77.03  255.73
                                    77.54  255.92
                                    78.03  256.13
                                    78.53  256.36
                                    79.01  256.59
                                    79.51  256.85
                                    80.03  257.13
                                    80.58  257.44
                                    81.11  257.75
                                    81.63  258.06
                                    82.13  258.36
                                    82.64  258.68
                                    83.21  259.04
                                    83.84  259.46
                                    84.74  260.06
                                    85.22  260.38
                                    85.22  261.04

Fattore di sicurezza (FS)    1.7507  - N.8 --    X       Y       Lambda=  0.3308
                                    62.64  255.04
                                    64.63  254.21
                                    65.54  253.85
                                    66.15  253.66
                                    66.63  253.54
                                    67.13  253.47
                                    67.56  253.45
                                    68.05  253.46
                                    68.57  253.50
                                    69.23  253.59
                                    69.81  253.68
                                    70.35  253.78
                                    70.86  253.89
                                    71.38  254.01
                                    71.88  254.14
                                    72.40  254.28
                                    72.93  254.44
                                    73.50  254.63
                                    74.04  254.82
                                    74.58  255.00
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75.10	255.19
75.62	255.39
76.14	255.58
76.67	255.79
77.21	256.01
77.76	256.24
78.30	256.46
78.82	256.69
79.34	256.93
79.86	257.17
80.38	257.42
80.90	257.68
81.43	257.95
81.98	258.23
82.51	258.52
83.05	258.80
83.58	259.08
84.11	259.36
84.70	259.68
85.36	260.03
86.18	260.47
86.18	261.19

Fattore di sicurezza (FS) 1.7516 - N.9 -- X Y Lambda= 0.3513

63.84	255.26
66.07	254.54
67.10	254.23
67.78	254.07
68.33	253.99
68.89	253.95
69.39	253.96
69.93	254.00
70.51	254.09
71.21	254.22
71.87	254.36
72.49	254.48
73.09	254.61
73.68	254.74
74.28	254.88
74.87	255.02
75.49	255.16
76.12	255.32
76.71	255.47
77.29	255.64
77.87	255.81
78.45	256.00
79.03	256.20
79.62	256.42
80.25	256.66
80.93	256.94
81.52	257.20
82.10	257.48
82.64	257.77
83.22	258.11
83.83	258.51
84.54	259.01
85.58	259.79
86.68	260.65
86.68	261.27

Fattore di sicurezza (FS) 1.7521 - N.10 -- X Y Lambda= 0.3605

65.91	255.64
67.57	255.15
68.35	254.93
68.88	254.82
69.32	254.74
69.75	254.70
70.14	254.69
70.57	254.70
71.02	254.73
71.56	254.78
72.04	254.84
72.49	254.91
72.93	254.98
73.37	255.07
73.81	255.16
74.25	255.26

74.70	255.38
75.19	255.51
75.65	255.64
76.10	255.77
76.55	255.90
77.00	256.04
77.44	256.19
77.89	256.34
78.35	256.50
78.83	256.67
79.28	256.84
79.73	257.02
80.17	257.20
80.62	257.38
81.06	257.58
81.51	257.78
81.97	258.00
82.45	258.24
82.91	258.47
83.36	258.71
83.79	258.95
84.24	259.21
84.72	259.50
85.28	259.85
86.07	260.37
86.31	260.54
86.31	261.21

---------- 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	1.734	445.9	257.1	163.1	Surplus
2	1.742	537.9	308.8	198.3	Surplus
3	1.743	626.7	359.6	231.1	Surplus
4	1.745	488.3	279.9	180.5	Surplus
5	1.747	512.6	293.4	189.9	Surplus
6	1.749	485.4	277.5	180.2	Surplus
7	1.749	442.2	252.8	164.2	Surplus
8	1.751	544.2	310.8	202.3	Surplus
9	1.752	548.7	313.2	204.1	Surplus
10	1.752	436.7	249.2	162.5	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 162.5

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)
65.307	0.249	-25.83	0.38	0.00	0.00	22.00	5.00
65.556	0.249	-25.83	1.15	0.00	0.00	22.00	5.00
65.806	0.249	-25.83	1.91	0.00	0.00	22.00	5.00
66.055	0.249	-25.83	2.67	0.00	0.00	22.00	5.00
66.305	0.129	-25.83	1.69	0.00	0.00	22.00	5.00
66.434	0.106	-24.58	1.54	0.00	0.00	22.00	5.00
66.540	0.249	-24.58	4.19	0.00	0.00	22.00	5.00
66.789	0.172	-24.58	3.37	0.00	0.00	22.00	5.00
66.961	0.249	-21.72	5.59	0.00	0.00	22.00	5.00
67.211	0.101	-21.72	2.47	0.00	0.00	22.00	5.00
67.311	0.249	-17.97	6.64	0.00	0.00	22.00	5.00
67.561	0.038	-17.97	1.08	0.00	0.00	22.00	5.00
67.599	0.249	-13.10	7.39	0.00	0.00	22.00	5.00
67.848	0.037	-13.10	1.16	0.00	0.00	22.00	5.00
67.886	0.249	-9.13	8.03	0.00	0.00	22.00	5.00
68.135	0.007	-9.13	0.23	0.00	0.00	22.00	5.00

68.142	0.249	-5.01	8.51	0.00	0.00	22.00	5.00
68.392	0.031	-5.01	1.10	0.00	0.00	22.00	5.00
68.423	0.249	-1.53	8.96	0.00	0.00	22.00	5.00
68.673	0.054	-1.53	2.00	0.00	0.00	22.00	5.00
68.727	0.249	1.07	9.36	0.00	0.00	22.00	5.00
68.976	0.123	1.07	4.72	0.00	0.00	22.00	5.00
69.099	0.249	2.16	9.81	0.00	0.00	22.00	5.00
69.349	0.079	2.16	3.15	0.00	0.00	22.00	5.00
69.427	0.233	3.47	9.47	0.00	0.00	22.00	5.00
69.660	0.074	3.47	3.08	0.00	0.00	22.00	5.00
69.734	0.249	4.90	10.46	0.00	0.00	22.00	5.00
69.984	0.043	4.90	1.83	0.00	0.00	22.00	5.00
70.027	0.249	6.36	10.71	0.00	0.00	22.00	5.00
70.277	0.048	6.36	2.10	0.00	0.00	22.00	5.00
70.325	0.249	7.73	10.94	0.00	0.00	22.00	5.00
70.574	0.037	7.73	1.64	0.00	0.00	22.00	5.00
70.612	0.249	9.10	11.12	0.00	0.00	22.00	5.00
70.861	0.044	9.10	1.98	0.00	0.00	22.00	5.00
70.905	0.249	10.39	11.27	0.00	0.00	22.00	5.00
71.155	0.050	10.39	2.29	0.00	0.00	22.00	5.00
71.205	0.249	11.54	11.40	0.00	0.00	22.00	5.00
71.455	0.071	11.54	3.27	0.00	0.00	22.00	5.00
71.526	0.249	11.55	11.51	0.00	0.00	22.00	5.00
71.775	0.066	11.55	3.06	0.00	0.00	22.00	5.00
71.841	0.249	11.55	11.63	0.00	0.00	22.00	5.00
72.091	0.060	11.55	2.82	0.00	0.00	22.00	5.00
72.151	0.249	11.55	11.74	0.00	0.00	22.00	5.00
72.401	0.059	11.55	2.77	0.00	0.00	22.00	5.00
72.459	0.249	11.55	11.85	0.00	0.00	22.00	5.00
72.709	0.054	11.55	2.58	0.00	0.00	22.00	5.00
72.763	0.017	11.55	0.82	0.00	0.00	22.00	5.00
72.780	0.249	11.55	12.03	0.00	0.00	22.00	5.00
73.029	0.040	11.55	1.94	0.00	0.00	22.00	5.00
73.069	0.249	11.55	12.28	0.00	0.00	22.00	5.00
73.319	0.057	11.55	2.83	0.00	0.00	22.00	5.00
73.376	0.249	11.55	12.54	0.00	0.00	22.00	5.00
73.625	0.059	11.55	3.01	0.00	0.00	22.00	5.00
73.684	0.249	11.55	12.80	0.00	0.00	22.00	5.00
73.934	0.060	11.55	3.10	0.00	0.00	22.00	5.00
73.994	0.249	12.04	13.06	0.00	0.00	22.00	5.00
74.243	0.053	12.04	2.81	0.00	0.00	22.00	5.00
74.296	0.249	12.54	13.30	0.00	0.00	22.00	5.00
74.546	0.051	12.54	2.73	0.00	0.00	22.00	5.00
74.597	0.249	13.05	13.53	0.00	0.00	22.00	5.00
74.846	0.049	13.05	2.67	0.00	0.00	22.00	5.00
74.895	0.249	13.55	13.74	0.00	0.00	22.00	5.00
75.144	0.052	13.55	2.89	0.00	0.00	22.00	5.00
75.196	0.044	14.07	2.42	0.00	0.00	22.00	5.00
75.240	0.249	14.07	13.97	0.00	0.00	22.00	5.00
75.489	0.008	14.07	0.43	0.00	0.00	22.00	5.00
75.497	0.249	14.57	14.13	0.00	0.00	22.00	5.00
75.747	0.056	14.57	3.16	0.00	0.00	22.00	5.00
75.802	0.249	15.06	14.31	0.00	0.00	22.00	5.00
76.052	0.063	15.06	3.63	0.00	0.00	22.00	5.00
76.114	0.249	15.52	14.47	0.00	0.00	22.00	5.00
76.364	0.077	15.52	4.47	0.00	0.00	22.00	5.00
76.441	0.249	16.61	14.63	0.00	0.00	22.00	5.00
76.690	0.055	16.61	3.22	0.00	0.00	22.00	5.00
76.745	0.249	17.81	14.75	0.00	0.00	22.00	5.00
76.994	0.047	17.81	2.80	0.00	0.00	22.00	5.00
77.041	0.249	19.05	14.83	0.00	0.00	22.00	5.00
77.291	0.040	19.05	2.38	0.00	0.00	22.00	5.00
77.331	0.249	20.28	14.87	0.00	0.00	22.00	5.00
77.580	0.049	20.28	2.93	0.00	0.00	22.00	5.00
77.629	0.071	21.48	4.21	0.00	0.00	22.00	5.00
77.700	0.219	21.48	13.01	0.00	0.00	22.00	5.00
77.919	0.249	22.66	14.62	0.00	0.00	22.00	5.00
78.169	0.047	22.66	2.75	0.00	0.00	22.00	5.00
78.216	0.249	23.77	14.36	0.00	0.00	22.00	5.00
78.466	0.055	23.77	3.12	0.00	0.00	22.00	5.00
78.520	0.249	24.76	14.06	0.00	0.00	22.00	5.00
78.770	0.075	24.76	4.19	0.00	0.00	22.00	5.00
78.845	0.249	25.17	13.71	0.00	0.00	22.00	5.00
79.094	0.063	25.17	3.41	0.00	0.00	22.00	5.00
79.157	0.249	25.61	13.37	0.00	0.00	22.00	5.00
79.407	0.056	25.61	2.96	0.00	0.00	22.00	5.00
79.463	0.249	26.06	13.02	0.00	0.00	22.00	5.00
79.712	0.052	26.06	2.68	0.00	0.00	22.00	5.00
79.764	0.249	26.51	12.66	0.00	0.00	22.00	5.00

80.014	0.052	26.51	2.62	0.00	0.00	22.00	5.00
80.066	0.249	26.94	12.29	0.00	0.00	22.00	5.00
80.316	0.034	26.94	1.67	0.00	0.00	22.00	5.00
80.350	0.015	26.94	0.75	0.00	0.00	22.00	5.00
80.365	0.249	27.38	11.91	0.00	0.00	22.00	5.00
80.615	0.051	27.38	2.41	0.00	0.00	22.00	5.00
80.666	0.249	27.80	11.51	0.00	0.00	22.00	5.00
80.916	0.054	27.80	2.43	0.00	0.00	22.00	5.00
80.969	0.249	28.21	11.10	0.00	0.00	22.00	5.00
81.219	0.059	28.21	2.56	0.00	0.00	22.00	5.00
81.278	0.249	28.21	10.67	0.00	0.00	22.00	5.00
81.527	0.059	28.21	2.46	0.00	0.00	22.00	5.00
81.586	0.249	28.21	10.24	0.00	0.00	22.00	5.00
81.835	0.057	28.21	2.28	0.00	0.00	22.00	5.00
81.892	0.249	28.21	9.81	0.00	0.00	22.00	5.00
82.141	0.057	28.21	2.19	0.00	0.00	22.00	5.00
82.198	0.249	28.21	9.39	0.00	0.00	22.00	5.00
82.448	0.054	28.21	1.99	0.00	0.00	22.00	5.00
82.502	0.249	28.21	8.97	0.00	0.00	22.00	5.00
82.751	0.057	28.21	2.00	0.00	0.00	22.00	5.00
82.808	0.192	28.21	6.59	0.00	0.00	22.00	5.00
83.000	0.115	28.21	3.85	0.00	0.00	22.00	5.00
83.115	0.249	28.21	8.04	0.00	0.00	22.00	5.00
83.365	0.060	28.21	1.86	0.00	0.00	22.00	5.00
83.424	0.249	28.22	7.50	0.00	0.00	22.00	5.00
83.674	0.061	28.22	1.76	0.00	0.00	22.00	5.00
83.735	0.249	28.77	6.96	0.00	0.00	22.00	5.00
83.984	0.053	28.77	1.42	0.00	0.00	22.00	5.00
84.037	0.249	29.35	6.41	0.00	0.00	22.00	5.00
84.286	0.050	29.35	1.24	0.00	0.00	22.00	5.00
84.337	0.249	29.93	5.85	0.00	0.00	22.00	5.00
84.586	0.048	29.93	1.07	0.00	0.00	22.00	5.00
84.634	0.249	30.50	5.28	0.00	0.00	22.00	5.00
84.884	0.052	30.50	1.04	0.00	0.00	22.00	5.00
84.936	0.249	31.25	4.68	0.00	0.00	22.00	5.00
85.185	0.085	31.25	1.48	0.00	0.00	22.00	5.00
85.270	0.249	31.84	3.98	0.00	0.00	22.00	5.00
85.520	0.126	31.84	1.81	0.00	0.00	22.00	5.00
85.646	0.249	32.39	3.18	0.00	0.00	22.00	5.00

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 (--)
65.307	0.000	255.525	-0.314	0.0000000000E+000	0.0000000000E+000	0.0000000000E+000	0.058	39.076	40.236
65.556	0.042	255.446	-0.314	1.6536786200E-001	4.7234551853E-004	1.3338758886E+000	0.058	39.076	40.236
65.806	0.085	255.368	-0.335	6.6556495086E-001	1.8698630885E-002	4.6046855404E+000	0.058	29.492	11.660
66.055	0.116	255.279	-0.302	2.4629709085E+000	2.0366140677E-001	9.0259657410E+000	0.101	14.298	4.690
66.305	0.176	255.217	-0.234	5.1692571580E+000	5.6328738215E-001	1.3391481705E+001	0.180	15.084	3.696
66.434	0.211	255.190	-0.215	7.0701868922E+000	8.5995795546E-001	1.7278143667E+001	0.225	15.625	3.448
66.540	0.236	255.167	-0.198	9.1292386663E+000	1.2225816789E+000	1.8670877324E+001	0.272	14.469	3.290
66.789	0.303	255.120	-0.180	1.3366397310E+001	1.9914050958E+000	1.7809933754E+001	0.331	11.854	3.042
66.961	0.353	255.091	-0.149	1.6521659939E+001	2.6037530715E+000	1.8764156030E+001	0.366	9.913	2.929
67.211	0.418	255.057	-0.131	2.1342835036E+001	3.6001883117E+000	1.9741353177E+001	0.413		

7.381 2.817
67.311 0.447 255.045 -0.091 2.3346601157E+001 4.0350956171E+000 1.9680061849E+001 0.430
6.521 2.783
67.561 0.508 255.025 -0.078 2.8114579412E+001 5.1290519622E+000 1.8406215315E+001 0.469
4.993 2.723
67.599 0.518 255.023 -0.035 2.8813152091E+001 5.2952698466E+000 1.8020799005E+001 0.474
4.809 2.716
67.848 0.568 255.015 -0.026 3.2856598097E+001 6.3112283964E+000 1.4505105126E+001 0.506
3.905 2.675
67.886 0.577 255.015 0.010 3.3388758637E+001 6.4554092390E+000 1.4187828183E+001 0.510
3.795 2.669
68.135 0.620 255.018 0.012 3.6824224810E+001 7.4057776727E+000 1.2793159945E+001 0.537
3.229 2.630
68.142 0.621 255.018 0.047 3.6914101132E+001 7.4319312273E+000 1.2767873641E+001 0.538
3.216 2.629
68.392 0.655 255.030 0.050 4.0119710670E+001 8.4133106064E+000 1.3144161190E+001 0.567
2.827 2.582
68.423 0.660 255.032 0.084 4.0532069389E+001 8.5455023725E+000 1.3100674887E+001 0.571
2.785 2.575
68.673 0.688 255.054 0.088 4.3640308665E+001 9.5982539164E+000 1.1557973084E+001 0.604
2.525 2.518
68.727 0.694 255.059 0.120 4.4257211681E+001 9.8170574295E+000 1.1465657918E+001 0.610
2.481 2.506
68.976 0.721 255.090 0.133 4.7236591868E+001 1.0929680386E+001 1.1833763970E+001 0.644
2.311 2.441
69.099 0.737 255.108 0.153 4.8684736438E+001 1.1494992590E+001 1.1336713242E+001 0.660
2.245 2.408
69.349 0.766 255.147 0.162 5.1288435854E+001 1.2553861111E+001 1.0795905870E+001 0.690
2.151 2.347
69.427 0.778 255.161 0.172 5.2146450047E+001 1.2908853461E+001 1.0386450688E+001 0.700
2.126 2.328
69.660 0.803 255.201 0.170 5.4202601658E+001 1.3778315654E+001 8.2739952997E+000 0.722
2.072 2.281
69.734 0.811 255.214 0.177 5.4804862725E+001 1.4035332326E+001 7.9322381577E+000 0.728
2.060 2.268
69.984 0.834 255.258 0.177 5.6649555737E+001 1.4827933096E+001 6.5472521351E+000 0.747
2.022 2.228
70.027 0.838 255.265 0.179 5.6926071708E+001 1.4947771573E+001 6.3367502936E+000 0.750
2.017 2.222
70.277 0.855 255.310 0.182 5.8414964390E+001 1.5597898278E+001 5.6659071930E+000 0.765
1.991 2.192
70.325 0.859 255.320 0.191 5.8686047062E+001 1.5718929436E+001 5.5032340308E+000 0.767
1.986 2.186
70.574 0.873 255.367 0.195 5.9924912329E+001 1.6280575359E+001 5.2434950499E+000 0.780
1.965 2.160
70.612 0.876 255.376 0.207 6.0120876335E+001 1.6372295655E+001 5.1341499057E+000 0.782
1.962 2.156
70.861 0.887 255.426 0.208 6.1148917402E+001 1.6869121361E+001 4.1867363975E+000 0.793
1.943 2.134
70.905 0.890 255.437 0.222 6.1334562134E+001 1.6962550572E+001 4.0783371779E+000 0.795
1.939 2.129
71.155 0.899 255.491 0.223 6.2182970430E+001 1.7410563538E+001 3.3819983964E+000 0.806
1.919 2.108
71.205 0.902 255.504 0.236 6.2353439400E+001 1.7504566016E+001 3.2900930855E+000 0.808
1.915 2.104
71.455 0.910 255.562 0.243 6.3065554860E+001 1.7918782500E+001 2.9600797637E+000 0.819
1.893 2.084
71.526 0.915 255.582 0.265 6.3278843511E+001 1.8047889176E+001 2.9029827047E+000 0.823
1.886 2.077
71.775 0.929 255.647 0.269 6.3926888511E+001 1.8458043459E+001 2.7259396691E+000 0.833
1.861 2.056
71.841 0.935 255.667 0.262 6.4108910680E+001 1.8575557786E+001 2.6489854193E+000 0.836
1.854 2.051
72.091 0.948 255.730 0.259 6.4665131155E+001 1.8944032318E+001 2.3760775934E+000 0.846
1.831 2.032
72.151 0.952 255.747 0.250 6.4810244042E+001 1.9042113382E+001 2.3308687023E+000 0.848
1.825 2.027
72.401 0.962 255.807 0.247 6.5308424506E+001 1.9383858781E+001 2.1270010035E+000 0.857
1.805 2.010
72.459 0.966 255.823 0.241 6.5434895282E+001 1.9473475996E+001 2.0989812575E+000 0.859
1.800 2.006
72.709 0.973 255.882 0.239 6.5896332159E+001 1.9805873184E+001 1.9657326748E+000 0.868
1.783 1.989
72.763 0.976 255.896 0.258 6.6004092497E+001 1.9887362611E+001 1.9375714432E+000 0.870
1.779 1.985
72.780 0.977 255.900 0.245 6.6037173226E+001 1.9912742111E+001 1.9141322168E+000 0.871
1.778 1.984
73.029 0.987 255.961 0.251 6.6491388674E+001 2.0271054446E+001 2.0472086503E+000 0.877
1.762 1.964

73.069	0.990	255.973	0.268	6.6574157042E+001	2.0340093397E+001	2.0533896079E+000	0.879
1.759	1.960						
73.319	1.005	256.039	0.275	6.7039598038E+001	2.0743911707E+001	2.1047067173E+000	0.887
1.742	1.934						
73.376	1.012	256.057	0.296	6.7162384726E+001	2.0856562513E+001	2.1085883103E+000	0.889
1.737	1.926						
73.625	1.033	256.129	0.301	6.7633042694E+001	2.1310264273E+001	2.0698085899E+000	0.899
1.718	1.893						
73.684	1.042	256.150	0.321	6.7758324015E+001	2.1438185641E+001	2.0563508828E+000	0.902
1.713	1.883						
73.934	1.069	256.228	0.329	6.8211494276E+001	2.1927078456E+001	1.9498917781E+000	0.914
1.692	1.842						
73.994	1.080	256.252	0.340	6.8329954143E+001	2.2065876453E+001	1.8823327337E+000	0.917
1.685	1.830						
74.243	1.109	256.333	0.335	6.8695917287E+001	2.2541426544E+001	1.3996702342E+000	0.929
1.662	1.784						
74.296	1.117	256.353	0.323	6.8769677116E+001	2.2648668280E+001	1.3132842131E+000	0.932
1.657	1.773						
74.546	1.140	256.431	0.320	6.9013101009E+001	2.3054809663E+001	8.6653370204E-001	0.941
1.635	1.729						
74.597	1.147	256.449	0.306	6.9056006652E+001	2.3140617174E+001	7.8434466400E-001	0.944
1.630	1.720						
74.846	1.163	256.523	0.303	6.9178259186E+001	2.3468107171E+001	3.2873192906E-001	0.951
1.610	1.681						
74.895	1.168	256.540	0.293	6.9192771318E+001	2.3534350428E+001	2.5321530100E-001	0.953
1.605	1.673						
75.144	1.179	256.611	0.290	6.9199935397E+001	2.3788782075E+001	-1.6228733976E-001	0.959
1.587	1.639						
75.196	1.183	256.627	0.311	6.9189409468E+001	2.3840876922E+001	-2.7386606264E-001	0.960
1.583	1.631						
75.240	1.185	256.640	0.290	6.9174889582E+001	2.3879703476E+001	-3.6182926399E-001	0.961
1.580	1.625						
75.489	1.194	256.712	0.289	6.9044484882E+001	2.4059323845E+001	-8.6855432153E-001	0.966
1.562	1.592						
75.497	1.195	256.715	0.305	6.9037745692E+001	2.4064800639E+001	-8.8251924789E-001	0.966
1.562	1.591						
75.747	1.206	256.791	0.314	6.8790460574E+001	2.4192673317E+001	-1.4039782108E+000	0.970
1.543	1.557						
75.802	1.211	256.810	0.336	6.8707424734E+001	2.4215559680E+001	-1.5271066554E+000	0.971
1.538	1.548						
76.052	1.227	256.893	0.345	6.8291361985E+001	2.4270669584E+001	-2.2953552816E+000	0.973
1.516	1.511						
76.114	1.235	256.918	0.369	6.8137166648E+001	2.4271359978E+001	-2.4725795312E+000	0.974
1.509	1.501						
76.364	1.256	257.008	0.377	6.7501370495E+001	2.4225935713E+001	-3.3709885122E+000	0.975
1.483	1.464						
76.441	1.267	257.041	0.365	6.7223694276E+001	2.4184189524E+001	-3.6583663738E+000	0.975
1.474	1.451						
76.690	1.279	257.127	0.343	6.6282775541E+001	2.3982361402E+001	-4.1277132547E+000	0.972
1.445	1.417						
76.745	1.281	257.146	0.346	6.6052948439E+001	2.3926507657E+001	-4.2175872383E+000	0.972
1.438	1.410						
76.994	1.288	257.233	0.349	6.4987238991E+001	2.3624250875E+001	-4.9773388332E+000	0.967
1.412	1.385						
77.041	1.289	257.249	0.361	6.4745633292E+001	2.3548417819E+001	-5.1218448462E+000	0.966
1.406	1.381						
77.291	1.294	257.340	0.363	6.3453597842E+001	2.3108147099E+001	-6.1278911511E+000	0.958
1.382	1.362						
77.331	1.295	257.354	0.332	6.3202359040E+001	2.3017235961E+001	-6.2392367293E+000	0.957
1.378	1.360						
77.580	1.284	257.436	0.334	6.1709307167E+001	2.2447190059E+001	-7.1783279184E+000	0.946
1.358	1.347						
77.629	1.284	257.454	0.346	6.1345865240E+001	2.2301215650E+001	-7.2569310435E+000	0.943
1.353	1.345						
77.700	1.279	257.477	0.327	6.0849981301E+001	2.2097969313E+001	-7.1251219526E+000	0.939
1.348	1.343						
77.919	1.265	257.549	0.333	5.9224484915E+001	2.1407409060E+001	-7.8478658722E+000	0.929
1.334	1.338						
78.169	1.245	257.633	0.344	5.7143099551E+001	2.0485539608E+001	-9.4061382813E+000	0.913
1.322	1.335						
78.216	1.243	257.651	0.350	5.6688601758E+001	2.0278880498E+001	-9.5449181589E+000	0.909
1.320	1.335						
78.466	1.219	257.737	0.352	5.4389989981E+001	1.9213072589E+001	-1.0226710266E+001	0.889
1.314	1.336						
78.520	1.216	257.758	0.357	5.3818665241E+001	1.8944525682E+001	-1.0342597334E+001	0.883
1.313	1.336						
78.770	1.189	257.846	0.363	5.1359222147E+001	1.7775650844E+001	-1.0958385846E+001	0.858
1.313	1.340						
78.845	1.184	257.876	0.353	5.0509503506E+001	1.7371879990E+001	-1.0910083440E+001	0.849

1.313 1.342
79.094 1.151 257.960 0.352 4.8102058659E+001 1.6228151011E+001 -1.1182063110E+001 0.822
1.319 1.349
79.157 1.147 257.986 0.382 4.7374845654E+001 1.5889381552E+001 -1.1389846100E+001 0.814
1.321 1.352
79.407 1.122 258.080 0.383 4.4709829086E+001 1.4656944717E+001 -1.1474574036E+001 0.783
1.332 1.363
79.463 1.118 258.103 0.368 4.4057343072E+001 1.4361943302E+001 -1.1354177649E+001 0.775
1.334 1.366
79.712 1.085 258.192 0.363 4.1556192427E+001 1.3254453330E+001 -1.0691615858E+001 0.746
1.346 1.378
79.764 1.080 258.212 0.348 4.0992604618E+001 1.3011608321E+001 -1.0577613687E+001 0.739
1.349 1.381
80.014 1.040 258.297 0.346 3.8656258145E+001 1.2031054783E+001 -1.0082697275E+001 0.714
1.362 1.395
80.066 1.034 258.317 0.336 3.8120566899E+001 1.1811585138E+001 -9.9918749082E+000 0.707
1.365 1.398
80.316 0.989 258.398 0.334 3.5914869991E+001 1.0930484858E+001 -9.9223437220E+000 0.684
1.378 1.412
80.350 0.984 258.411 0.378 3.5568910688E+001 1.0793897946E+001 -1.0057669913E+001 0.680
1.380 1.414
80.365 0.982 258.417 0.336 3.5413360660E+001 1.0732622312E+001 -9.9751431685E+000 0.678
1.381 1.414
80.615 0.936 258.500 0.345 3.3232062722E+001 9.8941305117E+000 -1.0092914730E+001 0.655
1.394 1.427
80.666 0.930 258.521 0.367 3.2699153386E+001 9.6904047663E+000 -1.0161041428E+001 0.648
1.397 1.430
80.916 0.888 258.611 0.371 3.0418336616E+001 8.8283346094E+000 -1.0359252695E+001 0.621
1.412 1.442
80.969 0.883 258.634 0.394 2.9849359130E+001 8.6144947694E+000 -1.0415264660E+001 0.614
1.415 1.444
81.219 0.846 258.730 0.400 2.7489491482E+001 7.7318560167E+000 -1.0652864581E+001 0.583
1.431 1.452
81.278 0.841 258.757 0.422 2.6846835071E+001 7.4937418781E+000 -1.0696981310E+001 0.574
1.435 1.454
81.527 0.810 258.860 0.429 2.4429241362E+001 6.6027729992E+000 -1.0910932645E+001 0.538
1.452 1.458
81.586 0.808 258.889 0.421 2.3771532026E+001 6.3644253666E+000 -1.0762064841E+001 0.527
1.457 1.459
81.835 0.775 258.990 0.413 2.1548842802E+001 5.5750814867E+000 -9.5248967641E+000 0.492
1.473 1.458
81.892 0.770 259.015 0.396 2.1001756430E+001 5.3851193193E+000 -9.3547101354E+000 0.482
1.477 1.457
82.141 0.732 259.111 0.395 1.9008656664E+001 4.7114804882E+000 -8.8224400622E+000 0.449
1.491 1.453
82.198 0.726 259.136 0.394 1.8496523347E+001 4.5426008431E+000 -8.7346334683E+000 0.440
1.495 1.452
82.448 0.688 259.232 0.392 1.6621506830E+001 3.9440058252E+000 -8.2446188990E+000 0.408
1.509 1.447
82.502 0.683 259.255 0.391 1.6166694047E+001 3.8019448699E+000 -8.1630146464E+000 0.400
1.513 1.445
82.751 0.644 259.350 0.392 1.4405877876E+001 3.2700192994E+000 -7.7708629103E+000 0.368
1.527 1.440
82.808 0.638 259.375 0.389 1.3952966005E+001 3.1357453666E+000 -7.6142065031E+000 0.359
1.530 1.438
83.000 0.607 259.447 0.394 1.2700126459E+001 2.7734573813E+000 -6.9839423427E+000 0.336
1.541 1.435
83.115 0.595 259.496 0.400 1.1865828365E+001 2.5360100490E+000 -6.9498396231E+000 0.319
1.548 1.433
83.365 0.557 259.593 0.399 1.0294282984E+001 2.1001830685E+000 -6.9000751503E+000 0.287
1.562 1.430
83.424 0.552 259.620 0.400 9.8729645400E+000 1.9857413279E+000 -6.8075841293E+000 0.278
1.566 1.430
83.674 0.515 259.717 0.399 8.4207457318E+000 1.6003959291E+000 -6.2755682413E+000 0.245
1.580 1.430
83.735 0.510 259.744 0.396 8.0329600929E+000 1.5000118856E+000 -6.1658752428E+000 0.235
1.584 1.431
83.984 0.468 259.839 0.393 6.7205484990E+000 1.1698212627E+000 -5.6172333480E+000 0.202
1.599 1.436
84.037 0.462 259.862 0.390 6.4191951583E+000 1.0963616106E+000 -5.5162074685E+000 0.193
1.602 1.438
84.286 0.417 259.957 0.378 5.2507787325E+000 8.2261389973E-001 -4.2907681987E+000 0.161
1.620 1.450
84.337 0.407 259.976 0.379 5.0390487829E+000 7.7545397741E-001 -4.1932289078E+000 0.155
1.624 1.454
84.586 0.359 260.071 0.384 4.0157321526E+000 5.5864087376E-001 -4.2624800291E+000 0.125
1.644 1.471
84.634 0.350 260.090 0.393 3.8101538455E+000 5.1497136382E-001 -4.2522511528E+000 0.118
1.648 1.475

```
     84.884       0.301     260.188       0.403   2.8026856161E+000   3.1015016526E-001  -4.3259792671E+000       0.081
  1.678       1.504
     84.936       0.294     260.212       0.424   2.5746399752E+000   2.6673514098E-001  -4.2339649003E+000       0.072
  1.685       1.512
     85.185       0.247     260.316       0.436   1.7002789510E+000   1.2029535520E-001  -3.6286106729E+000       0.058
  1.737       1.564
     85.270       0.237     260.358       0.475   1.3881390542E+000   7.5112261184E-002  -3.4424726358E+000       0.058
  1.764       1.592
     85.520       0.199     260.474       0.442   6.9646889259E-001   1.4889152110E-002  -2.1789020130E+000       0.058
  1.894       1.712
     85.646       0.170     260.524       0.442   4.5956201865E-001   5.4121983284E-003  -1.8665719249E+000       0.058
  1.954       1.784

-------------------------------------------------------------------------------------------------------------------------------
--------------------------------------
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
-----------------------------------------------------------------------------------------------------


TABELLA SFORZI DI TAGLIO DISTRIBUITI LUNGO SUPERFICIE INDIVIDUATA CON MINOR FS
-----------------------------------------------------------------------------------------------
        X           dx          dl         alpha     TauStress    TauF      TauStrength   TauS
       (m)          (m)         (m)          (°)      (kPa)      (kN/m)       (kPa)     (kN/m)
      65.307       0.249       0.277     -25.832      -0.545      -0.151       5.514       1.528
      65.556       0.249       0.277     -25.832      -1.634      -0.453       6.610       1.832
      65.806       0.249       0.277     -25.832      -2.723      -0.755       8.307       2.303
      66.055       0.249       0.277     -25.832      -3.812      -1.057      10.036       2.782
      66.305       0.129       0.144     -25.832      -4.639      -0.666      11.674       1.676
      66.434       0.106       0.117     -24.580      -4.931      -0.576      13.311       1.554
      66.540       0.249       0.274     -24.580      -5.725      -1.571      13.775       3.779
      66.789       0.172       0.189     -24.580      -6.704      -1.266      15.235       2.876
      66.961       0.249       0.269     -21.720      -6.829      -1.834      16.723       4.491
      67.211       0.101       0.108     -21.720      -7.499      -0.812      17.812       1.930
      67.311       0.249       0.262     -17.968      -6.727      -1.764      18.708       4.907
      67.561       0.038       0.040     -17.968      -7.134      -0.286      19.278       0.774
      67.599       0.249       0.256     -13.102      -5.277      -1.352      19.594       5.019
      67.848       0.037       0.038     -13.102      -5.520      -0.212      19.960       0.765
      67.886       0.249       0.253      -9.130      -3.631      -0.917      20.304       5.131
      68.135       0.007       0.007      -9.130      -3.749      -0.027      20.658       0.147
      68.142       0.249       0.250      -5.013      -1.446      -0.362      20.904       5.235
      68.392       0.031       0.031      -5.013      -1.487      -0.047      21.452       0.674
      68.423       0.249       0.250      -1.525       0.659       0.165      21.409       5.343
      68.673       0.054       0.054      -1.525       0.675       0.037      21.674       1.177
      68.727       0.249       0.250       1.065       2.386       0.595      21.802       5.440
      68.976       0.123       0.123       1.065       2.444       0.300      22.220       2.732
      69.099       0.249       0.250       2.161       3.247       0.811      22.264       5.559
      69.349       0.079       0.079       2.161       3.309       0.260      22.654       1.783
      69.427       0.233       0.233       3.475       4.287       0.999      22.451       5.231
      69.660       0.074       0.075       3.475       4.353       0.325      22.619       1.686
      69.734       0.249       0.250       4.897       5.440       1.362      22.561       5.649
      69.984       0.043       0.043       4.897       5.509       0.239      22.671       0.983
      70.027       0.249       0.251       6.358       6.635       1.666      22.594       5.672
      70.277       0.048       0.049       6.358       6.708       0.326      22.760       1.107
      70.325       0.249       0.252       7.726       7.776       1.958      22.656       5.704
      70.574       0.037       0.037       7.726       7.845       0.294      22.847       0.855
      70.612       0.249       0.253       9.102       8.914       2.252      22.670       5.728
      70.861       0.044       0.045       9.102       8.981       0.402      22.815       1.022
      70.905       0.249       0.254      10.387       9.977       2.531      22.661       5.748
      71.155       0.050       0.051      10.387      10.038       0.515      22.774       1.168
      71.205       0.249       0.255      11.544      10.929       2.783      22.632       5.763
      71.455       0.071       0.073      11.544      10.985       0.800      22.729       1.655
      71.526       0.249       0.255      11.545      11.042       2.812      22.811       5.809
      71.775       0.066       0.067      11.545      11.097       0.747      22.906       1.542
      71.841       0.249       0.255      11.547      11.153       2.840      22.980       5.852
      72.091       0.060       0.061      11.547      11.207       0.688      23.074       1.417
      72.151       0.249       0.255      11.548      11.262       2.868      23.148       5.894
      72.401       0.059       0.060      11.548      11.316       0.677      23.242       1.391
      72.459       0.249       0.255      11.549      11.371       2.895      23.319       5.938
      72.709       0.054       0.055      11.549      11.424       0.631      23.413       1.293
```

72.763	0.017	0.018	11.550	11.437	0.201	23.431	0.412
72.780	0.249	0.255	11.550	11.542	2.939	23.598	6.009
73.029	0.040	0.041	11.550	11.661	0.473	23.802	0.965
73.069	0.249	0.255	11.551	11.780	3.000	23.986	6.108
73.319	0.057	0.058	11.551	11.906	0.691	24.205	1.405
73.376	0.249	0.255	11.552	12.032	3.064	24.398	6.213
73.625	0.059	0.061	11.552	12.158	0.736	24.617	1.490
73.684	0.249	0.255	11.554	12.286	3.128	24.811	6.318
73.934	0.060	0.061	11.554	12.412	0.757	25.031	1.527
73.994	0.249	0.255	12.039	12.933	3.299	25.099	6.403
74.243	0.053	0.054	12.039	13.055	0.711	25.291	1.377
74.296	0.249	0.256	12.540	13.586	3.472	25.349	6.479
74.546	0.051	0.052	12.540	13.704	0.713	25.527	1.329
74.597	0.249	0.256	13.048	14.242	3.647	25.576	6.550
74.846	0.049	0.050	13.048	14.356	0.720	25.742	1.290
74.895	0.249	0.257	13.553	14.888	3.821	25.787	6.618
75.144	0.052	0.054	13.553	15.000	0.803	25.943	1.390
75.196	0.044	0.045	14.067	15.466	0.694	25.878	1.161
75.240	0.249	0.257	14.067	15.571	4.005	26.024	6.693
75.489	0.008	0.008	14.067	15.663	0.124	26.149	0.207
75.497	0.249	0.258	14.573	16.177	4.170	26.158	6.743
75.747	0.056	0.057	14.573	16.281	0.934	26.299	1.508
75.802	0.249	0.258	15.062	16.794	4.339	26.328	6.802
76.052	0.063	0.065	15.062	16.896	1.100	26.470	1.723
76.114	0.249	0.259	15.519	17.381	4.500	26.503	6.862
76.364	0.077	0.080	15.519	17.482	1.390	26.654	2.120
76.441	0.249	0.260	16.614	18.491	4.814	26.549	6.912
76.690	0.055	0.057	16.614	18.572	1.059	26.665	1.521
76.745	0.249	0.262	17.808	19.621	5.141	26.502	6.945
76.994	0.047	0.050	17.808	19.684	0.977	26.624	1.322
77.041	0.249	0.264	19.054	20.727	5.471	26.425	6.975
77.291	0.040	0.042	19.054	20.769	0.879	26.556	1.124
77.331	0.249	0.266	20.275	21.738	5.781	26.316	6.999
77.580	0.049	0.052	20.275	21.758	1.137	26.480	1.384
77.629	0.071	0.076	21.477	22.657	1.717	26.203	1.986
77.700	0.219	0.236	21.477	22.534	5.310	26.156	6.164
77.919	0.249	0.270	22.665	23.086	6.242	25.792	6.973
78.169	0.047	0.051	22.665	22.888	1.173	25.806	1.323
78.216	0.249	0.273	23.769	23.398	6.379	25.377	6.918
78.466	0.055	0.060	23.769	23.163	1.384	25.378	1.516
78.520	0.249	0.275	24.757	23.520	6.462	24.913	6.845
78.770	0.075	0.083	24.757	23.236	1.926	24.914	2.065
78.845	0.249	0.276	25.174	23.188	6.392	24.350	6.713
79.094	0.063	0.069	25.174	22.902	1.591	24.401	1.695
79.157	0.249	0.277	25.613	22.852	6.323	23.943	6.624
79.407	0.056	0.062	25.613	22.558	1.401	23.836	1.480
79.463	0.249	0.278	26.060	22.492	6.247	23.233	6.452
79.712	0.052	0.058	26.060	22.187	1.285	23.089	1.337
79.764	0.249	0.279	26.509	22.100	6.161	22.503	6.274
80.014	0.052	0.058	26.509	21.780	1.274	22.367	1.308
80.066	0.249	0.280	26.944	21.659	6.062	21.794	6.099
80.316	0.034	0.039	26.944	21.344	0.822	21.738	0.838
80.350	0.015	0.017	26.944	21.289	0.370	21.692	0.377
80.365	0.249	0.281	27.378	21.183	5.951	21.160	5.945
80.615	0.051	0.058	27.378	20.834	1.206	21.151	1.224
80.666	0.249	0.282	27.800	20.657	5.826	20.618	5.815
80.916	0.054	0.061	27.800	20.291	1.229	20.580	1.246
80.969	0.249	0.283	28.208	20.080	5.685	20.064	5.680
81.219	0.059	0.067	28.208	19.693	1.313	20.011	1.335
81.278	0.249	0.283	28.209	19.306	5.466	19.552	5.535
81.527	0.059	0.067	28.209	18.919	1.261	19.488	1.299
81.586	0.249	0.283	28.210	18.532	5.247	18.860	5.339
81.835	0.057	0.064	28.210	18.147	1.166	18.677	1.200
81.892	0.249	0.283	28.211	17.763	5.029	18.148	5.138
82.141	0.057	0.064	28.211	17.378	1.121	17.998	1.161
82.198	0.249	0.283	28.212	16.993	4.811	17.503	4.955
82.448	0.054	0.061	28.212	16.612	1.020	17.336	1.065
82.502	0.249	0.283	28.213	16.230	4.595	16.876	4.778
82.751	0.057	0.065	28.213	15.845	1.026	16.705	1.082
82.808	0.192	0.217	28.214	15.533	3.376	16.304	3.544
83.000	0.115	0.131	28.214	15.112	1.974	16.090	2.101
83.115	0.249	0.283	28.215	14.544	4.118	15.575	4.410
83.365	0.060	0.068	28.215	14.061	0.954	15.315	1.040
83.424	0.249	0.283	28.216	13.579	3.845	14.837	4.201
83.674	0.061	0.069	28.216	13.095	0.902	14.554	1.003
83.735	0.249	0.285	28.774	12.735	3.625	14.004	3.986
83.984	0.053	0.060	28.774	12.242	0.739	13.704	0.828
84.037	0.249	0.286	29.347	11.862	3.395	13.168	3.769
84.286	0.050	0.058	29.347	11.351	0.655	12.768	0.736

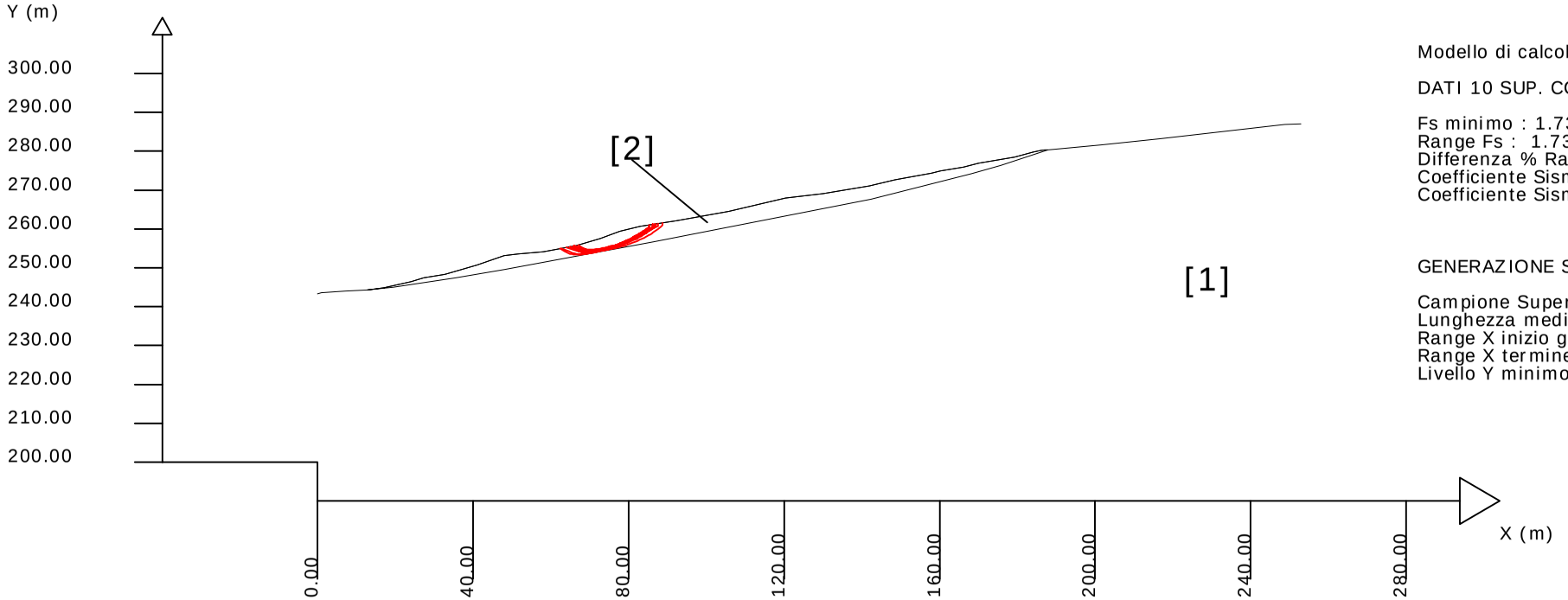
84.337	0.249	0.288	29.928	10.938	3.149	12.324	3.548
84.586	0.048	0.055	29.928	10.409	0.575	12.008	0.663
84.634	0.249	0.290	30.499	9.962	2.885	11.556	3.346
84.884	0.052	0.060	30.499	9.403	0.567	11.216	0.677
84.936	0.249	0.292	31.248	8.931	2.606	10.663	3.112
85.185	0.085	0.099	31.248	8.278	0.823	10.243	1.019
85.270	0.249	0.294	31.840	7.676	2.254	9.644	2.832
85.520	0.126	0.148	31.840	6.912	1.026	9.113	1.352
85.646	0.249	0.295	32.388	6.182	1.826	8.582	2.536

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

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



Modello di calcolo : Morgenstern - Price (1965)

DATI 10 SUP. CON MINOR Fs

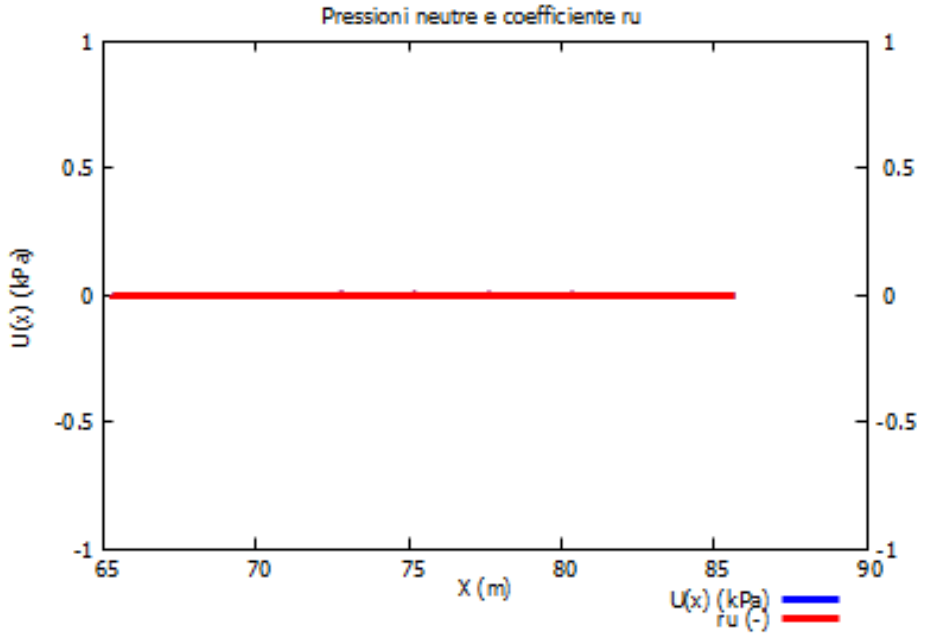
Fs minimo : 1.7342
Range Fs : 1.7342 1.7521
Differenza % Range Fs : 1.02
Coefficiente Sismico orizzontale - Kh: 0.0450
Coefficiente Sismico verticale - Kv: 0.0225

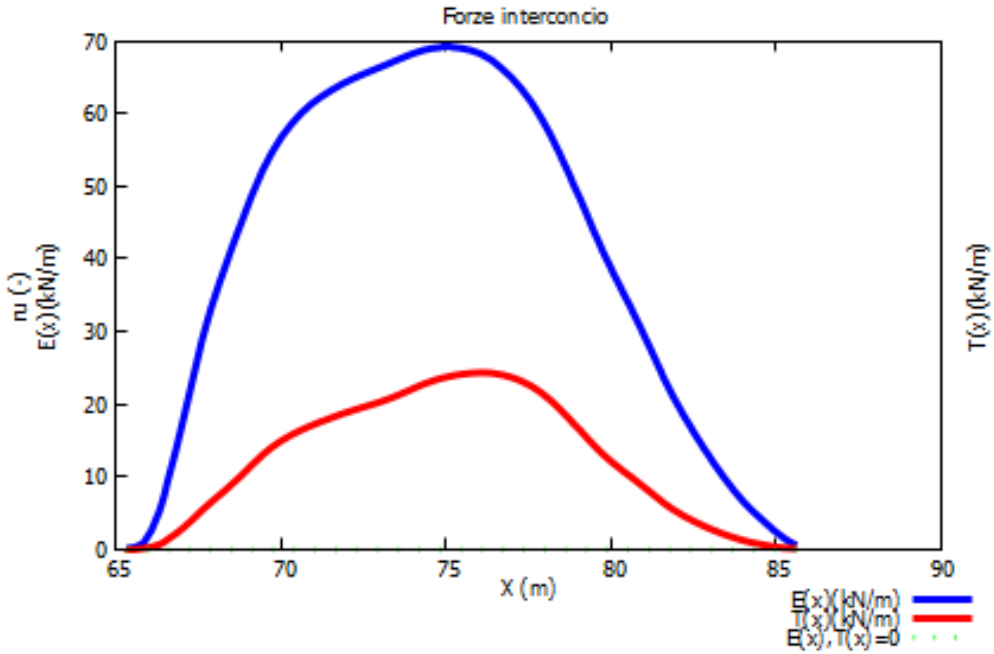
GENERAZIONE SUPERFICI RANDOM

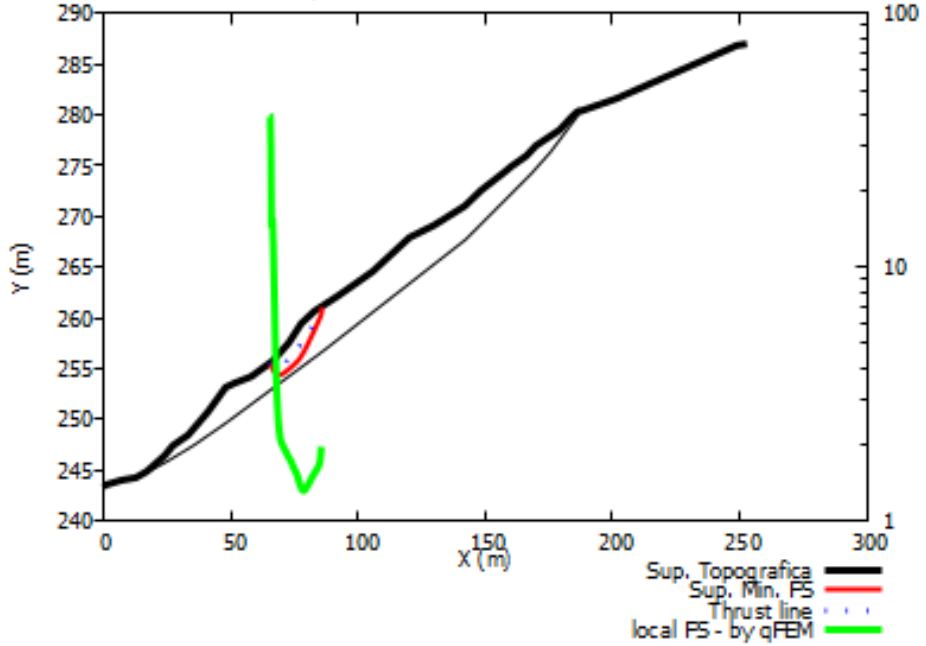
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 10.1
Range X inizio generazione : 5.1 - 232.7
Range X termine generazione : 30.4 - 247.9
Livello Y minimo considerato : 204.0

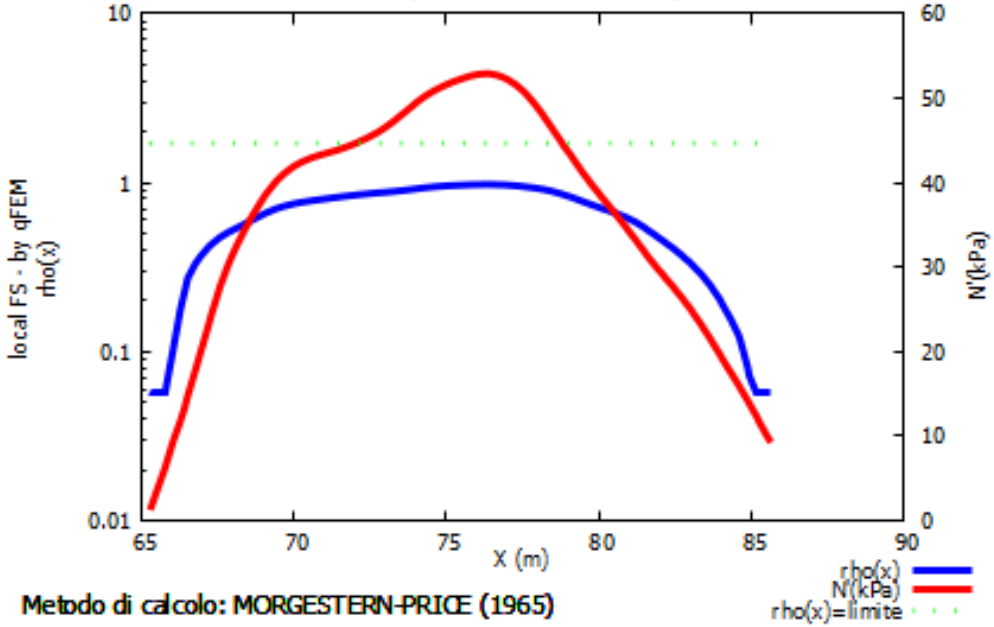
Parametri Geotecnici degli strati # ----------

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
2	22.00	5.00	0	18.00	20.00	0	0	0	0





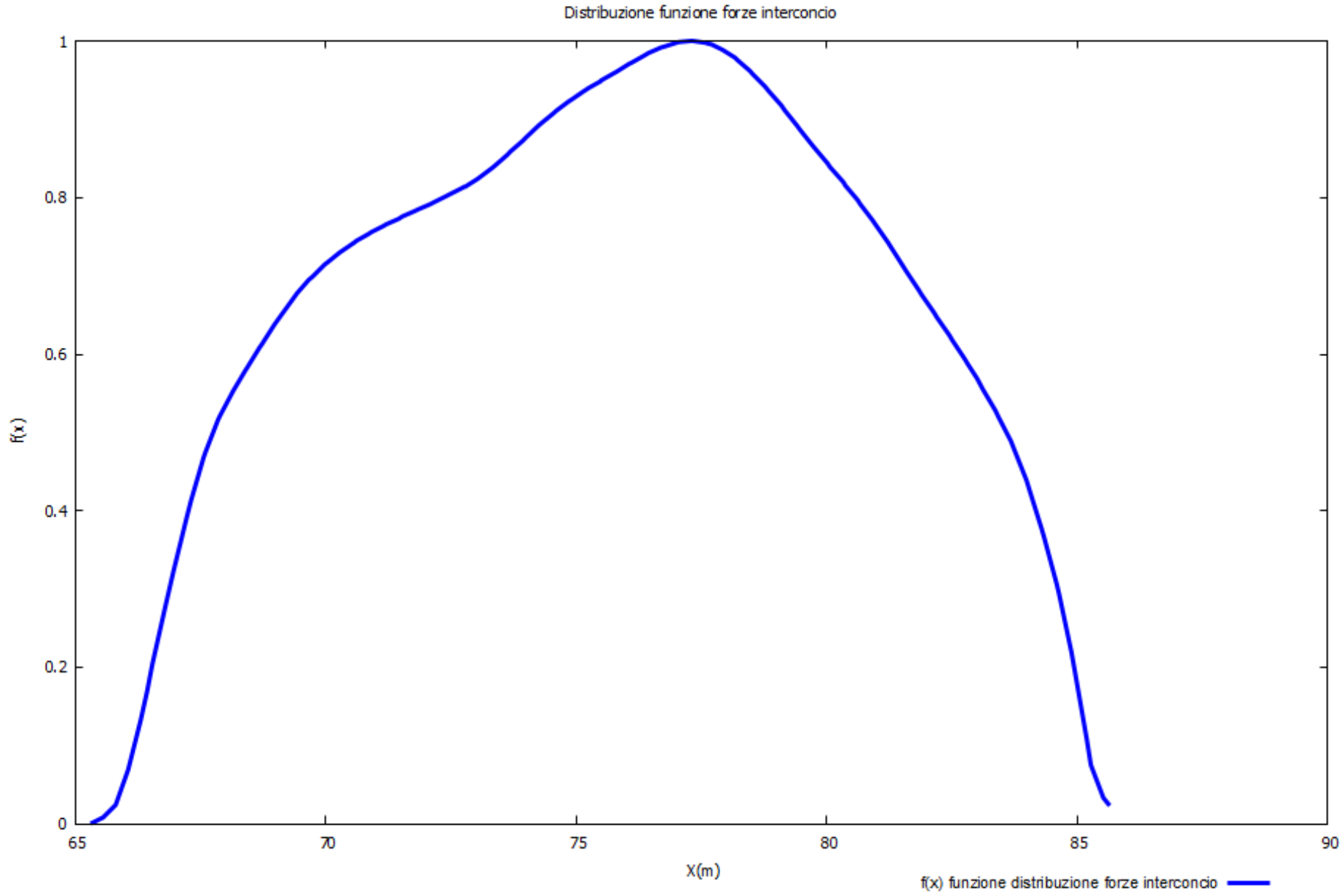


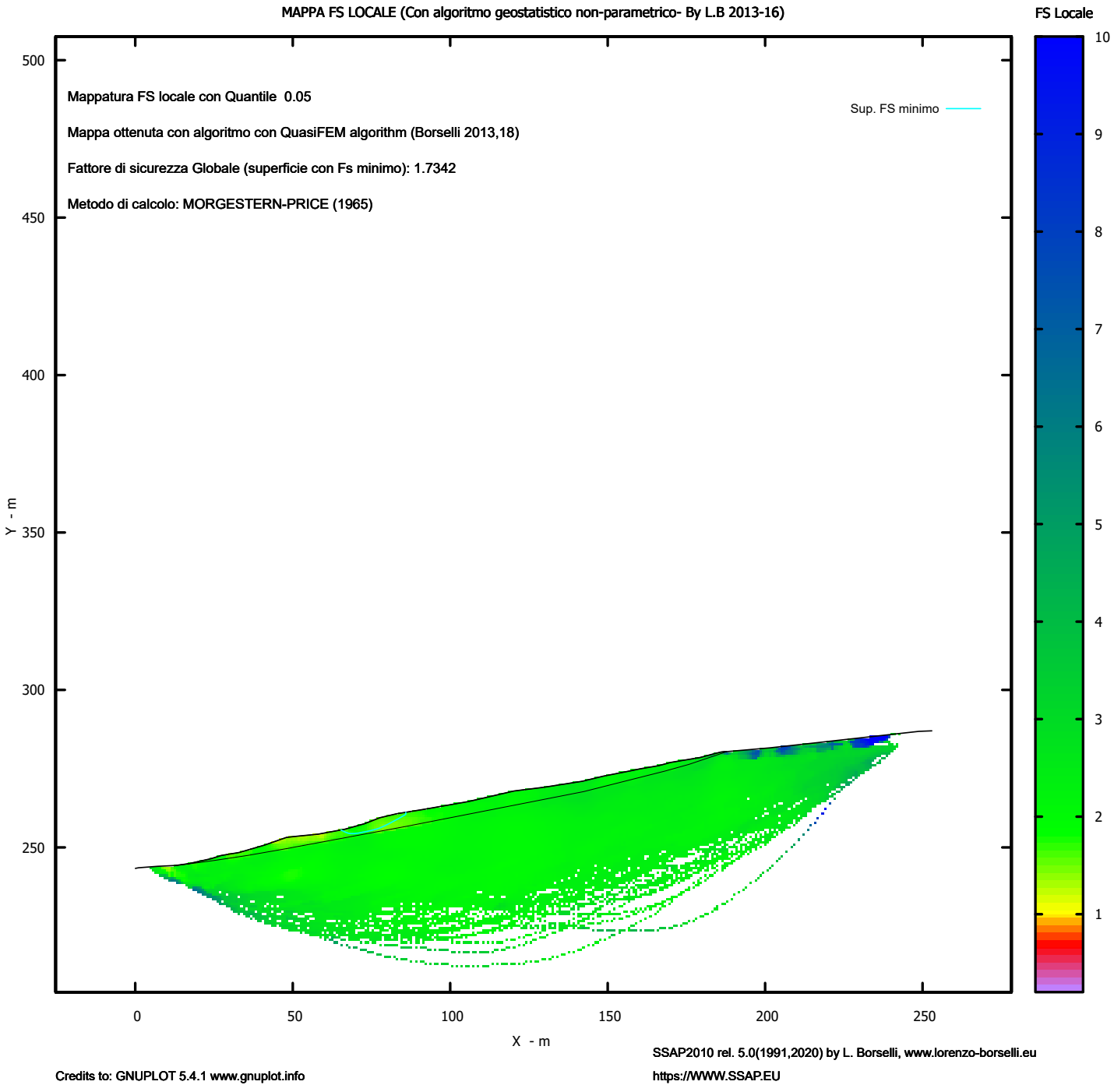


Metodo di calcolo: MORGESTERN-PRICE (1965)

SSAP2010 (versione 5.0 - 2020) - DISTRIBUZIONE FORZE e PRESSIONI

10/11/21 19:08




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): 1.7342
Metodo di calcolo: MORGESTERN-PRICE (1965)
Sup. FS minimo
Y - m
X - m
500
450
400
350
300
250
0
50
100
150
200
250
10
9
8
7
6
5
4
3
2
1
Credits to: GNUPLOT 5.4.1 www.gnuplot.info
SSAP2010 rel. 5.0(1991,2020) by L. Borselli, www.lorenzo-borselli.eu
https://WWW.SSAP.EU

Report elaborazioni

SSAP 5.0 - Slope Stability Analysis Program (1991,2020)
WWW.SSAP.EU
Build No. 11719
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: 12 settembre 2020

File report: C:\SSAP\CRACO\SERRACARUSOMOR\VERIFICA 2\DRENATA\BERSELLI\BERSELLI.txt
Data: 10/11/2021
Localita' :
Descrizione:
Modello pendio: VERIFICA2DRENATA.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	243.32	12.75	244.24	-	-	-	-
1.00	243.53	19.45	245.08	-	-	-	-
7.12	243.99	25.18	245.86	-	-	-	-
12.75	244.24	35.52	247.43	-	-	-	-
17.00	244.85	48.12	249.63	-	-	-	-
24.00	246.40	86.42	256.75	-	-	-	-
27.25	247.40	142.37	267.72	-	-	-	-
32.56	248.32	168.24	274.24	-	-	-	-
33.12	248.40	175.79	276.36	-	-	-	-
41.00	250.71	187.87	280.41	-	-	-	-
48.00	253.14	187.00	280.41	-	-	-	-
51.50	253.56	186.00	280.27	-	-	-	-
58.00	254.19	184.00	279.78	-	-	-	-
66.54	255.75	179.28	278.52	-	-	-	-
72.78	257.52	170.00	276.98	-	-	-	-
77.70	259.44	166.23	275.97	-	-	-	-
83.00	260.68	160.25	274.92	-	-	-	-
92.19	262.16	157.91	274.43	-	-	-	-
105.86	264.57	148.50	272.59	-	-	-	-
120.26	267.92	142.00	271.02	-	-	-	-
130.02	269.14	130.02	269.14	-	-	-	-
142.00	271.02	120.26	267.92	-	-	-	-
148.50	272.59	105.86	264.57	-	-	-	-
157.91	274.43	92.19	262.16	-	-	-	-
160.25	274.92	83.00	260.68	-	-	-	-
166.23	275.97	77.70	259.44	-	-	-	-
170.00	276.98	72.78	257.52	-	-	-	-
179.28	278.52	66.54	255.75	-	-	-	-
184.00	279.78	58.00	254.19	-	-	-	-
186.00	280.27	51.50	253.56	-	-	-	-
187.00	280.41	48.00	253.14	-	-	-	-
187.87	280.41	41.00	250.71	-	-	-	-
201.50	281.60	33.12	248.40	-	-	-	-
216.50	283.26	32.56	248.32	-	-	-	-
248.86	286.85	27.25	247.40	-	-	-	-
252.95	287.02	24.00	246.40	-	-	-	-
-	-	17.00	244.85	-	-	-	-
-	-	12.75	244.24	-	-	-	-

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
STRATO 2	22.00	5.00	0.00	18.00	20.00	1.322	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
      METODO DI RICERCA: CONVEX RANDOM       - Chen     (1992)
      FILTRAGGIO SUPERFICI : ATTIVATO
      COORDINATE X1,X2,Y OSTACOLO :         0.00            0.00            0.00
      LUNGHEZZA MEDIA SEGMENTI (m):               10.1   (+/-) 50%
      INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax):      5.06          232.71
      LIVELLO MINIMO CONSIDERATO (Ymin):                   203.99
      INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax):       30.35          247.89

  *** TOTALE SUPERFICI GENERATE :        10000

  ------------ INFORMAZIONI PARAMETRI DI CALCOLO ------------
      METODO DI CALCOLO : BORSELLI (Borselli, 2016)
      METODO DI ESPLORAZIONE CAMPO VALORI (lambda0,Fs0) ADOTTATO : A (rapido)
      COEFFICIENTE SISMICO UTILIZZATO Kh : 0.0450
      COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0225
      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)    1.7273  - Min. -    X       Y       Lambda=  0.2787
                                              66.02  255.65
                                              67.12  255.00
                                              67.63  254.72
                                              67.96  254.55
                                              68.22  254.45
                                              68.49  254.38
                                              68.72  254.33
                                              68.98  254.31
                                              69.27  254.31
                                              69.63  254.32
                                              69.95  254.34
                                              70.25  254.36
                                              70.55  254.38
                                              70.84  254.41
                                              71.12  254.43
                                              71.41  254.46
                                              71.70  254.50
                                              72.00  254.54
                                              72.30  254.58
                                              72.59  254.61
                                              72.88  254.65
                                              73.18  254.69
                                              73.47  254.73
                                              73.77  254.77
                                              74.08  254.81
                                              74.39  254.85
                                              74.68  254.90
                                              74.96  254.96
                                              75.23  255.02
                                              75.51  255.09
                                              75.78  255.17
                                              76.06  255.27
                                              76.36  255.37
                                              76.68  255.50
                                              76.99  255.62
                                              77.28  255.75
                                              77.56  255.87
```

77.85	256.01
78.13	256.14
78.42	256.29
78.71	256.44
79.01	256.61
79.31	256.77
79.61	256.94
79.90	257.10
80.19	257.27
80.48	257.43
80.77	257.60
81.06	257.77
81.35	257.95
81.65	258.12
81.94	258.30
82.23	258.47
82.53	258.64
82.82	258.82
83.11	258.99
83.40	259.16
83.69	259.34
83.99	259.51
84.28	259.68
84.57	259.86
84.86	260.03
85.19	260.23
85.44	260.37
85.44	261.07

Fattore di sicurezza (FS) 1.7327 - N.2 -- X Y Lambda= 0.2688

63.40	255.18
64.90	254.40
65.59	254.06
66.03	253.87
66.39	253.75
66.76	253.67
67.08	253.63
67.43	253.62
67.82	253.64
68.31	253.68
68.75	253.73
69.16	253.78
69.56	253.83
69.95	253.88
70.34	253.94
70.73	254.01
71.14	254.08
71.55	254.16
71.96	254.23
72.35	254.32
72.74	254.40
73.13	254.50
73.52	254.59
73.92	254.70
74.33	254.81
74.76	254.94
75.16	255.06
75.54	255.19
75.92	255.33
76.31	255.49
76.68	255.65
77.07	255.83
77.46	256.02
77.90	256.24
78.31	256.46
78.70	256.67
79.09	256.89
79.49	257.12
79.87	257.34
80.27	257.58
80.66	257.83
81.07	258.09
81.48	258.34
81.87	258.60
82.27	258.85
82.67	259.11
83.11	259.40
83.61	259.73

84.30	260.20
84.30	260.89

Fattore di sicurezza (FS) 1.7362 - N.3 -- Lambda= 0.2728

X	Y
65.85	255.62
67.13	254.95
67.72	254.65
68.12	254.48
68.44	254.37
68.76	254.29
69.05	254.24
69.36	254.20
69.70	254.19
70.11	254.20
70.48	254.21
70.84	254.22
71.18	254.23
71.52	254.25
71.87	254.27
72.21	254.30
72.58	254.33
72.96	254.37
73.30	254.41
73.63	254.46
73.94	254.53
74.27	254.61
74.59	254.70
74.91	254.81
75.26	254.94
75.64	255.09
76.00	255.24
76.35	255.39
76.69	255.54
77.03	255.70
77.37	255.85
77.71	256.02
78.06	256.19
78.42	256.37
78.77	256.55
79.11	256.73
79.45	256.91
79.79	257.10
80.12	257.29
80.47	257.50
80.82	257.71
81.19	257.94
81.54	258.16
81.87	258.39
82.20	258.62
82.54	258.87
82.91	259.15
83.33	259.49
83.93	260.00
84.16	260.20
84.16	260.87

Fattore di sicurezza (FS) 1.7391 - N.4 -- Lambda= 0.2722

X	Y
64.30	255.34
66.19	254.69
67.07	254.41
67.66	254.25
68.15	254.15
68.63	254.10
69.07	254.07
69.54	254.08
70.05	254.11
70.65	254.18
71.20	254.25
71.72	254.32
72.22	254.40
72.73	254.49
73.22	254.58
73.73	254.69
74.25	254.81
74.80	254.94
75.32	255.08
75.82	255.22

76.31	255.36
76.82	255.52
77.31	255.69
77.80	255.87
78.31	256.06
78.85	256.28
79.38	256.49
79.89	256.70
80.40	256.91
80.91	257.12
81.42	257.34
81.93	257.57
82.46	257.80
83.00	258.04
83.51	258.28
84.01	258.53
84.49	258.79
84.99	259.08
85.53	259.40
86.15	259.80
87.04	260.40
87.58	260.76
87.58	261.42

Fattore di sicurezza (FS) 1.7391 - N.5 -- X Y Lambda= 0.2749

65.42	255.54
66.85	254.97
67.52	254.72
67.97	254.58
68.34	254.49
68.71	254.43
69.04	254.40
69.39	254.39
69.78	254.40
70.24	254.44
70.66	254.47
71.05	254.51
71.44	254.55
71.82	254.60
72.20	254.65
72.59	254.71
72.99	254.77
73.41	254.85
73.80	254.92
74.18	255.00
74.55	255.09
74.93	255.18
75.30	255.29
75.69	255.40
76.08	255.53
76.52	255.67
76.91	255.82
77.29	255.97
77.66	256.12
78.04	256.29
78.40	256.47
78.78	256.66
79.16	256.86
79.57	257.09
79.97	257.32
80.37	257.54
80.76	257.76
81.15	257.98
81.54	258.19
81.93	258.41
82.32	258.63
82.70	258.85
83.09	259.06
83.48	259.28
83.87	259.50
84.26	259.72
84.70	259.96
85.18	260.24
85.43	260.38
85.43	261.07

Fattore di sicurezza (FS) 1.7407 - N.6 -- X Y Lambda= 0.2719

65.59 255.58
66.97 254.99
67.61 254.73
68.03 254.59
68.37 254.50
68.72 254.45
69.03 254.42
69.36 254.42
69.73 254.44
70.19 254.49
70.59 254.54
70.96 254.60
71.32 254.66
71.68 254.73
72.03 254.81
72.39 254.90
72.76 254.99
73.15 255.11
73.53 255.22
73.90 255.33
74.27 255.45
74.64 255.56
75.00 255.68
75.37 255.80
75.74 255.92
76.12 256.05
76.49 256.18
76.86 256.32
77.22 256.45
77.59 256.58
77.96 256.72
78.33 256.86
78.70 257.01
79.09 257.16
79.45 257.32
79.82 257.47
80.18 257.63
80.54 257.80
80.90 257.97
81.27 258.14
81.65 258.33
82.04 258.53
82.41 258.73
82.78 258.93
83.13 259.14
83.50 259.36
83.89 259.61
84.35 259.90
84.99 260.33
84.99 261.00

Fattore di sicurezza (FS)   1.7416 - N.7 --   X   Y   Lambda= 0.2667
65.43 255.55
67.01 254.86
67.75 254.56
68.24 254.39
68.65 254.27
69.05 254.20
69.41 254.15
69.81 254.14
70.25 254.14
70.80 254.17
71.25 254.21
71.67 254.26
72.06 254.33
72.46 254.43
72.85 254.53
73.25 254.66
73.66 254.82
74.13 255.01
74.59 255.19
75.03 255.37
75.46 255.54
75.89 255.72
76.32 255.89
76.75 256.07
77.18 256.24
77.62 256.42

78.04	256.60
78.46	256.78
78.88	256.96
79.30	257.16
79.72	257.36
80.14	257.56
80.58	257.78
81.03	258.02
81.46	258.25
81.88	258.48
82.29	258.72
82.71	258.98
83.17	259.27
83.70	259.61
84.44	260.12
84.68	260.29
84.68	260.95

Fattore di sicurezza (FS) 1.7451 - N.8 -- X Y Lambda= 0.2699

66.26	255.70
68.05	255.05
68.89	254.77
69.45	254.61
69.92	254.51
70.38	254.45
70.79	254.42
71.25	254.42
71.75	254.45
72.35	254.51
72.87	254.57
73.35	254.65
73.80	254.74
74.27	254.85
74.72	254.97
75.18	255.12
75.67	255.29
76.21	255.50
76.72	255.70
77.21	255.90
77.69	256.10
78.17	256.31
78.65	256.52
79.13	256.75
79.64	256.98
80.17	257.24
80.66	257.50
81.13	257.76
81.58	258.03
82.05	258.33
82.56	258.68
83.15	259.11
84.00	259.77
84.69	260.32
84.69	260.95

Fattore di sicurezza (FS) 1.7454 - N.9 -- X Y Lambda= 0.2660

64.02	255.29
66.10	254.40
67.05	254.02
67.67	253.82
68.16	253.70
68.66	253.64
69.10	253.63
69.59	253.66
70.13	253.74
70.82	253.87
71.43	253.99
71.99	254.12
72.53	254.25
73.07	254.39
73.60	254.54
74.13	254.71
74.68	254.89
75.27	255.09
75.83	255.29
76.38	255.49
76.92	255.69

```
                                          77.47  255.90
                                          78.00  256.11
                                          78.55  256.33
                                          79.09  256.56
                                          79.65  256.80
                                          80.21  257.03
                                          80.76  257.27
                                          81.31  257.50
                                          81.86  257.74
                                          82.41  257.98
                                          82.96  258.21
                                          83.52  258.45
                                          84.08  258.70
                                          84.63  258.94
                                          85.17  259.19
                                          85.71  259.44
                                          86.25  259.70
                                          86.85  260.00
                                          87.53  260.35
                                          88.43  260.83
                                          88.43  261.55


 Fattore di sicurezza (FS)    1.7501  - N.10 --    X       Y       Lambda=  0.2746
                                          65.45  255.55
                                          67.13  254.93
                                          67.92  254.66
                                          68.44  254.51
                                          68.88  254.41
                                          69.31  254.35
                                          69.70  254.31
                                          70.12  254.31
                                          70.56  254.32
                                          71.09  254.36
                                          71.58  254.40
                                          72.05  254.45
                                          72.51  254.49
                                          72.96  254.54
                                          73.41  254.59
                                          73.87  254.65
                                          74.35  254.71
                                          74.85  254.78
                                          75.30  254.86
                                          75.73  254.95
                                          76.15  255.05
                                          76.59  255.17
                                          77.01  255.30
                                          77.45  255.46
                                          77.91  255.63
                                          78.42  255.85
                                          78.89  256.06
                                          79.35  256.26
                                          79.79  256.48
                                          80.23  256.70
                                          80.67  256.93
                                          81.12  257.18
                                          81.58  257.44
                                          82.07  257.73
                                          82.53  258.01
                                          82.98  258.30
                                          83.42  258.58
                                          83.87  258.88
                                          84.37  259.23
                                          84.93  259.63
                                          85.72  260.21
                                          86.22  260.58
                                          86.22  261.20


------------ 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     1.727         455.3         263.6       165.3        Surplus
       2     1.733         492.0         283.9       179.6        Surplus
       3     1.736         448.4         258.3       164.3        Surplus
       4     1.739         548.0         315.1       201.4        Surplus
       5     1.739         440.6         253.4       161.9        Surplus
```

6	1.741	401.3	230.5	147.7	Surplus
7	1.742	431.7	247.9	159.0	Surplus
8	1.745	429.8	246.3	158.9	Surplus
9	1.745	576.8	330.5	213.3	Surplus
10	1.750	509.6	291.2	189.3	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 147.7

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

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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)
66.017	0.244	-30.67	0.42	0.00	0.00	22.00	5.00
66.261	0.244	-30.67	1.27	0.00	0.00	22.00	5.00
66.504	0.036	-30.67	0.26	0.00	0.00	22.00	5.00
66.540	0.244	-30.67	2.30	0.00	0.00	22.00	5.00
66.784	0.244	-30.67	3.25	0.00	0.00	22.00	5.00
67.027	0.094	-30.67	1.50	0.00	0.00	22.00	5.00
67.121	0.244	-29.32	4.56	0.00	0.00	22.00	5.00
67.364	0.244	-29.32	5.49	0.00	0.00	22.00	5.00
67.608	0.020	-29.32	0.48	0.00	0.00	22.00	5.00
67.628	0.244	-26.06	6.44	0.00	0.00	22.00	5.00
67.871	0.086	-26.06	2.48	0.00	0.00	22.00	5.00
67.957	0.244	-21.48	7.53	0.00	0.00	22.00	5.00
68.201	0.020	-21.48	0.67	0.00	0.00	22.00	5.00
68.221	0.244	-15.37	8.27	0.00	0.00	22.00	5.00
68.465	0.027	-15.37	0.94	0.00	0.00	22.00	5.00
68.491	0.233	-10.33	8.49	0.00	0.00	22.00	5.00
68.724	0.244	-4.98	9.33	0.00	0.00	22.00	5.00
68.968	0.016	-4.98	0.64	0.00	0.00	22.00	5.00
68.984	0.244	-0.60	9.72	0.00	0.00	22.00	5.00
69.228	0.040	-0.60	1.64	0.00	0.00	22.00	5.00
69.268	0.244	2.48	10.07	0.00	0.00	22.00	5.00
69.511	0.116	2.48	4.87	0.00	0.00	22.00	5.00
69.627	0.033	3.01	1.39	0.00	0.00	22.00	5.00
69.660	0.244	3.01	10.48	0.00	0.00	22.00	5.00
69.904	0.048	3.01	2.09	0.00	0.00	22.00	5.00
69.951	0.244	3.61	10.78	0.00	0.00	22.00	5.00
70.195	0.060	3.61	2.69	0.00	0.00	22.00	5.00
70.255	0.244	4.25	11.07	0.00	0.00	22.00	5.00
70.499	0.049	4.25	2.26	0.00	0.00	22.00	5.00
70.548	0.244	4.92	11.34	0.00	0.00	22.00	5.00
70.791	0.046	4.92	2.14	0.00	0.00	22.00	5.00
70.837	0.244	5.54	11.59	0.00	0.00	22.00	5.00
71.080	0.041	5.54	1.99	0.00	0.00	22.00	5.00
71.122	0.244	6.16	11.82	0.00	0.00	22.00	5.00
71.365	0.044	6.16	2.16	0.00	0.00	22.00	5.00
71.409	0.244	6.76	12.04	0.00	0.00	22.00	5.00
71.653	0.047	6.76	2.35	0.00	0.00	22.00	5.00
71.700	0.244	7.34	12.25	0.00	0.00	22.00	5.00
71.944	0.055	7.34	2.81	0.00	0.00	22.00	5.00
71.999	0.244	7.38	12.46	0.00	0.00	22.00	5.00
72.243	0.054	7.38	2.76	0.00	0.00	22.00	5.00
72.296	0.244	7.42	12.67	0.00	0.00	22.00	5.00
72.540	0.051	7.42	2.65	0.00	0.00	22.00	5.00
72.590	0.190	7.47	10.00	0.00	0.00	22.00	5.00
72.780	0.104	7.47	5.55	0.00	0.00	22.00	5.00
72.884	0.244	7.51	13.18	0.00	0.00	22.00	5.00
73.128	0.048	7.51	2.62	0.00	0.00	22.00	5.00
73.176	0.244	7.56	13.51	0.00	0.00	22.00	5.00
73.419	0.052	7.56	2.94	0.00	0.00	22.00	5.00
73.471	0.244	7.61	13.85	0.00	0.00	22.00	5.00
73.715	0.055	7.61	3.16	0.00	0.00	22.00	5.00
73.770	0.244	7.65	14.20	0.00	0.00	22.00	5.00
74.014	0.062	7.65	3.68	0.00	0.00	22.00	5.00
74.076	0.244	7.69	14.55	0.00	0.00	22.00	5.00
74.319	0.071	7.69	4.29	0.00	0.00	22.00	5.00

74.390	0.244	9.25	14.89	0.00	0.00	22.00	5.00
74.634	0.043	9.25	2.66	0.00	0.00	22.00	5.00
74.677	0.244	11.00	15.17	0.00	0.00	22.00	5.00
74.921	0.035	11.00	2.21	0.00	0.00	22.00	5.00
74.956	0.244	12.88	15.39	0.00	0.00	22.00	5.00
75.199	0.026	12.88	1.63	0.00	0.00	22.00	5.00
75.225	0.015	14.71	0.95	0.00	0.00	22.00	5.00
75.240	0.244	14.71	15.58	0.00	0.00	22.00	5.00
75.484	0.025	14.71	1.64	0.00	0.00	22.00	5.00
75.509	0.244	16.53	15.71	0.00	0.00	22.00	5.00
75.753	0.028	16.53	1.80	0.00	0.00	22.00	5.00
75.780	0.244	18.32	15.81	0.00	0.00	22.00	5.00
76.024	0.039	18.32	2.53	0.00	0.00	22.00	5.00
76.063	0.244	19.93	15.87	0.00	0.00	22.00	5.00
76.307	0.051	19.93	3.30	0.00	0.00	22.00	5.00
76.357	0.244	21.30	15.89	0.00	0.00	22.00	5.00
76.601	0.083	21.30	5.39	0.00	0.00	22.00	5.00
76.683	0.244	22.15	15.88	0.00	0.00	22.00	5.00
76.927	0.059	22.15	3.83	0.00	0.00	22.00	5.00
76.986	0.244	23.09	15.85	0.00	0.00	22.00	5.00
77.229	0.048	23.09	3.12	0.00	0.00	22.00	5.00
77.277	0.244	24.06	15.79	0.00	0.00	22.00	5.00
77.521	0.040	24.06	2.59	0.00	0.00	22.00	5.00
77.561	0.139	25.03	8.97	0.00	0.00	22.00	5.00
77.700	0.149	25.03	9.54	0.00	0.00	22.00	5.00
77.849	0.244	25.97	15.41	0.00	0.00	22.00	5.00
78.092	0.038	25.97	2.36	0.00	0.00	22.00	5.00
78.130	0.244	26.89	15.08	0.00	0.00	22.00	5.00
78.374	0.043	26.89	2.61	0.00	0.00	22.00	5.00
78.416	0.244	27.76	14.71	0.00	0.00	22.00	5.00
78.660	0.048	27.76	2.86	0.00	0.00	22.00	5.00
78.708	0.244	28.56	14.32	0.00	0.00	22.00	5.00
78.951	0.062	28.56	3.62	0.00	0.00	22.00	5.00
79.014	0.244	28.82	13.89	0.00	0.00	22.00	5.00
79.257	0.055	28.82	3.09	0.00	0.00	22.00	5.00
79.312	0.244	29.09	13.47	0.00	0.00	22.00	5.00
79.556	0.050	29.09	2.72	0.00	0.00	22.00	5.00
79.606	0.244	29.36	13.04	0.00	0.00	22.00	5.00
79.850	0.048	29.36	2.52	0.00	0.00	22.00	5.00
79.897	0.244	29.63	12.61	0.00	0.00	22.00	5.00
80.141	0.047	29.63	2.38	0.00	0.00	22.00	5.00
80.188	0.162	29.90	8.14	0.00	0.00	22.00	5.00
80.350	0.128	29.90	6.29	0.00	0.00	22.00	5.00
80.478	0.244	30.16	11.72	0.00	0.00	22.00	5.00
80.721	0.047	30.16	2.20	0.00	0.00	22.00	5.00
80.768	0.244	30.42	11.27	0.00	0.00	22.00	5.00
81.011	0.048	30.42	2.17	0.00	0.00	22.00	5.00
81.059	0.244	30.68	10.80	0.00	0.00	22.00	5.00
81.303	0.050	30.68	2.17	0.00	0.00	22.00	5.00
81.353	0.244	30.68	10.33	0.00	0.00	22.00	5.00
81.597	0.051	30.68	2.11	0.00	0.00	22.00	5.00
81.648	0.244	30.68	9.85	0.00	0.00	22.00	5.00
81.891	0.050	30.68	1.96	0.00	0.00	22.00	5.00
81.941	0.244	30.68	9.38	0.00	0.00	22.00	5.00
82.184	0.050	30.68	1.88	0.00	0.00	22.00	5.00
82.235	0.244	30.68	8.91	0.00	0.00	22.00	5.00
82.478	0.048	30.68	1.71	0.00	0.00	22.00	5.00
82.526	0.244	30.68	8.44	0.00	0.00	22.00	5.00
82.770	0.050	30.68	1.67	0.00	0.00	22.00	5.00
82.819	0.181	30.68	5.94	0.00	0.00	22.00	5.00
83.000	0.112	30.68	3.56	0.00	0.00	22.00	5.00
83.112	0.244	30.69	7.42	0.00	0.00	22.00	5.00
83.355	0.049	30.69	1.44	0.00	0.00	22.00	5.00
83.404	0.244	30.69	6.85	0.00	0.00	22.00	5.00
83.648	0.047	30.69	1.26	0.00	0.00	22.00	5.00
83.694	0.244	30.69	6.29	0.00	0.00	22.00	5.00
83.938	0.049	30.69	1.21	0.00	0.00	22.00	5.00
83.987	0.244	30.70	5.72	0.00	0.00	22.00	5.00
84.230	0.049	30.70	1.08	0.00	0.00	22.00	5.00
84.279	0.244	30.70	5.15	0.00	0.00	22.00	5.00
84.523	0.050	30.70	0.99	0.00	0.00	22.00	5.00
84.572	0.244	30.70	4.59	0.00	0.00	22.00	5.00
84.816	0.048	30.70	0.85	0.00	0.00	22.00	5.00
84.864	0.244	30.71	4.02	0.00	0.00	22.00	5.00
85.107	0.086	30.71	1.31	0.00	0.00	22.00	5.00
85.194	0.244	30.72	3.38	0.00	0.00	22.00	5.00

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

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 (--)
66.017	0.000	255.654	-0.401	0.0000000000E+000	0.0000000000E+000	1.9642598733E-002	0.058	8.904	8.320
66.261	0.047	255.557	-0.401	2.0826213043E-001	4.9578953954E-004	1.6903862272E+000	0.058	8.904	8.320
66.504	0.093	255.459	-0.384	8.2347953809E-001	1.4234568963E-002	3.3788976866E+000	0.058	9.623	8.858
66.540	0.106	255.450	-0.321	9.4926277439E-001	2.3150522792E-002	3.9759999726E+000	0.058	10.245	8.855
66.784	0.170	255.369	-0.332	2.6969704377E+000	2.1436372900E-001	1.2160937044E+001	0.088	21.422	7.211
67.027	0.233	255.288	-0.316	6.8735199995E+000	7.8620401398E-001	1.8600680304E+001	0.196	32.757	5.400
67.121	0.263	255.263	-0.275	8.6656941599E+000	1.0504824173E+000	2.0225473006E+001	0.225	30.628	5.025
67.364	0.333	255.196	-0.256	1.4268548071E+001	1.9467282467E+000	2.2644821915E+001	0.296	19.094	4.332
67.608	0.412	255.138	-0.234	1.9697224818E+001	2.8650199560E+000	2.2409240560E+001	0.339	13.032	3.916
67.628	0.419	255.134	-0.175	2.0139063376E+001	2.9431715795E+000	2.2427247096E+001	0.342	12.627	3.889
67.871	0.496	255.092	-0.163	2.5626333516E+001	3.9874346850E+000	2.2562749219E+001	0.382	8.611	3.603
67.957	0.527	255.081	-0.113	2.7570724832E+001	4.3866689450E+000	2.2668408468E+001	0.396	7.562	3.514
68.201	0.597	255.055	-0.103	3.3156513703E+001	5.6407769394E+000	2.2973966419E+001	0.439	5.470	3.294
68.221	0.603	255.053	-0.048	3.3627460962E+001	5.7509066692E+000	2.2758385870E+001	0.442	5.337	3.276
68.465	0.659	255.042	-0.041	3.8536698053E+001	7.0214788739E+000	2.1480049213E+001	0.483	4.185	3.102
68.491	0.666	255.042	0.006	3.9110732686E+001	7.1848581069E+000	2.1428115977E+001	0.488	4.071	3.080
68.724	0.710	255.044	0.029	4.3696139063E+001	8.5519574018E+000	1.8670439127E+001	0.531	3.348	2.912
68.968	0.744	255.056	0.051	4.7979557705E+001	9.9669740524E+000	1.4632965900E+001	0.574	2.877	2.758
68.984	0.746	255.057	0.090	4.8215715761E+001	1.0049070780E+001	1.4431878442E+001	0.576	2.854	2.749
69.228	0.771	255.079	0.093	5.1720927714E+001	1.1341808477E+001	1.1903265407E+001	0.614	2.575	2.622
69.268	0.775	255.083	0.119	5.2183627482E+001	1.1521639546E+001	1.1543680108E+001	0.619	2.542	2.604
69.511	0.795	255.113	0.124	5.5071373467E+001	1.2678311041E+001	1.0552066681E+001	0.651	2.376	2.502
69.627	0.804	255.128	0.132	5.6220501147E+001	1.3154735450E+001	1.1134794232E+001	0.664	2.320	2.463
69.660	0.808	255.133	0.141	5.6597058875E+001	1.3310957366E+001	1.1167336204E+001	0.668	2.304	2.451
69.904	0.829	255.167	0.143	5.8759658291E+001	1.4222792816E+001	9.4863631175E+000	0.691	2.228	2.383
69.951	0.834	255.175	0.164	5.9219290818E+001	1.4417223965E+001	9.5352915290E+000	0.695	2.214	2.370
70.195	0.859	255.215	0.165	6.1454475654E+001	1.5363210078E+001	8.7468173396E+000	0.718	2.149	2.309
70.255	0.865	255.225	0.172	6.1972266286E+001	1.5581511750E+001	8.6454318749E+000	0.722	2.137	2.297
70.499	0.889	255.267	0.174	6.4082371797E+001	1.6472365103E+001	8.4067810407E+000	0.742	2.087	2.247
70.548	0.894	255.276	0.181	6.4492756897E+001	1.6646292730E+001	8.3510946224E+000	0.745	2.078	2.238
70.791	0.918	255.320	0.186	6.6522034250E+001	1.7509845312E+001	8.9300324888E+000	0.763		

2.035 2.195
70.837 0.923 255.329 0.182 6.6933642704E+001 1.7687671995E+001 8.7666387405E+000 0.767
2.027 2.187
71.080 0.943 255.373 0.182 6.8710166251E+001 1.8464090183E+001 8.0286241698E+000 0.782
1.991 2.150
71.122 0.947 255.381 0.186 6.9047915186E+001 1.8615380718E+001 7.9603605999E+000 0.785
1.984 2.144
71.365 0.965 255.426 0.187 7.0710037906E+001 1.9373798576E+001 7.5119409550E+000 0.799
1.951 2.109
71.409 0.970 255.435 0.197 7.1046571272E+001 1.9532763592E+001 7.4882253423E+000 0.803
1.945 2.102
71.653 0.989 255.482 0.199 7.2670989451E+001 2.0329628412E+001 7.1699135950E+000 0.819
1.912 2.067
71.700 0.993 255.493 0.200 7.3012961870E+001 2.0503349771E+001 7.1025163507E+000 0.822
1.905 2.060
71.944 1.010 255.540 0.202 7.4535994407E+001 2.1312240810E+001 6.9580890363E+000 0.839
1.875 2.026
71.999 1.015 255.553 0.209 7.4930512516E+001 2.1528731488E+001 6.9302478765E+000 0.844
1.868 2.017
72.243 1.034 255.603 0.211 7.6416958730E+001 2.2380394491E+001 6.7835801229E+000 0.862
1.840 1.983
72.296 1.039 255.616 0.218 7.6788295720E+001 2.2597349017E+001 6.7652837210E+000 0.866
1.834 1.975
72.540 1.060 255.668 0.219 7.8250017262E+001 2.3478749052E+001 6.5802231937E+000 0.885
1.809 1.941
72.590 1.065 255.680 0.226 7.8589353209E+001 2.3684712467E+001 6.5284225457E+000 0.889
1.804 1.933
72.780 1.082 255.722 0.229 7.9705111701E+001 2.4371238683E+001 6.2124698253E+000 0.903
1.789 1.906
72.884 1.094 255.747 0.241 8.0371201119E+001 2.4778460928E+001 6.2918612028E+000 0.910
1.780 1.891
73.128 1.120 255.806 0.242 8.1846053970E+001 2.5672886851E+001 6.2791538346E+000 0.925
1.765 1.855
73.176 1.126 255.818 0.251 8.2148003463E+001 2.5854871315E+001 6.2833033912E+000 0.928
1.762 1.848
73.419 1.155 255.879 0.253 8.3629022561E+001 2.6739333065E+001 6.3634964586E+000 0.942
1.750 1.810
73.471 1.162 255.893 0.264 8.3965595656E+001 2.6939952486E+001 6.3706498076E+000 0.945
1.747 1.802
73.715 1.194 255.957 0.270 8.5456458118E+001 2.7822586964E+001 6.5226043538E+000 0.959
1.735 1.761
73.770 1.202 255.973 0.276 8.5819581167E+001 2.8038548219E+001 6.4676164324E+000 0.962
1.732 1.752
74.014 1.236 256.039 0.282 8.7237634388E+001 2.8882045632E+001 6.0607895206E+000 0.974
1.716 1.710
74.076 1.248 256.060 0.310 8.7619341421E+001 2.9115855964E+001 5.9798039242E+000 0.977
1.709 1.698
74.319 1.289 256.134 0.310 8.8940605968E+001 2.9938091206E+001 5.0209374786E+000 0.988
1.682 1.654
74.390 1.303 256.157 0.304 8.9288432693E+001 3.0164298610E+001 4.6667808557E+000 0.992
1.672 1.642
74.634 1.335 256.229 0.298 9.0227217996E+001 3.0805768211E+001 3.1230413912E+000 1.000
1.639 1.605
74.677 1.341 256.242 0.285 9.0356085417E+001 3.0902613196E+001 2.8578396717E+000 1.001
1.632 1.599
74.921 1.363 256.311 0.281 9.0864732941E+001 3.1341844258E+001 1.3007478281E+000 1.007
1.596 1.569
74.956 1.366 256.321 0.282 9.0906520749E+001 3.1391623210E+001 1.0809936594E+000 1.008
1.591 1.565
75.199 1.379 256.390 0.286 9.0991315330E+001 3.1635530178E+001 -3.1455350169E-001 1.011
1.555 1.540
75.225 1.381 256.398 0.299 9.0981431895E+001 3.1655433276E+001 -6.4610272870E-001 1.012
1.551 1.538
75.240 1.381 256.402 0.281 9.0969545463E+001 3.1663057440E+001 -8.3346089946E-001 1.012
1.549 1.536
75.484 1.386 256.470 0.287 9.0624322345E+001 3.1719465287E+001 -2.4379712284E+000 1.013
1.516 1.516
75.509 1.388 256.479 0.311 9.0559526536E+001 3.1716606323E+001 -2.5905973183E+000 1.013
1.512 1.513
75.753 1.390 256.554 0.311 8.9821506315E+001 3.1613017630E+001 -3.9038809373E+000 1.014
1.480 1.493
75.780 1.392 256.564 0.349 8.9710062087E+001 3.1591032057E+001 -4.0950691509E+000 1.013
1.476 1.490
76.024 1.396 256.649 0.354 8.8517956842E+001 3.1300701658E+001 -5.8459867987E+000 1.012
1.444 1.468
76.063 1.398 256.663 0.393 8.8284427824E+001 3.1236454451E+001 -6.1299134979E+000 1.011
1.439 1.464
76.307 1.406 256.760 0.402 8.6590496358E+001 3.0726078642E+001 -7.9805983614E+000 1.007
1.408 1.440

76.357	1.410	256.782	0.424	8.6175330731E+001	3.0593098352E+001	-8.3412499937E+000	1.006
1.402	1.434						
76.601	1.418	256.885	0.414	8.3971234855E+001	2.9834519717E+001	-9.6643600233E+000	0.998
1.376	1.410						
76.683	1.418	256.917	0.398	8.3155271786E+001	2.9543508846E+001	-9.7540753953E+000	0.994
1.367	1.402						
76.927	1.416	257.014	0.400	8.0864917044E+001	2.8697144428E+001	-1.0922906956E+001	0.984
1.348	1.382						
76.986	1.416	257.038	0.410	8.0201563009E+001	2.8445568098E+001	-1.1090621337E+001	0.981
1.343	1.377						
77.229	1.412	257.138	0.412	7.7701010597E+001	2.7477361094E+001	-1.1150869059E+001	0.968
1.328	1.363						
77.277	1.411	257.158	0.391	7.7157780303E+001	2.7262815650E+001	-1.1237982849E+001	0.965
1.325	1.360						
77.521	1.397	257.252	0.388	7.4528258275E+001	2.6213264918E+001	-1.1726663838E+001	0.950
1.314	1.351						
77.561	1.395	257.268	0.357	7.4051767591E+001	2.6019979404E+001	-1.1625434419E+001	0.947
1.312	1.350						
77.700	1.378	257.316	0.365	7.2558415116E+001	2.5410439295E+001	-1.1447469101E+001	0.937
1.308	1.348						
77.849	1.365	257.373	0.371	7.0743456710E+001	2.4662310550E+001	-1.2182206274E+001	0.928
1.303	1.347						
78.092	1.336	257.462	0.372	6.7783708527E+001	2.3426314384E+001	-1.4023972246E+001	0.911
1.299	1.348						
78.130	1.333	257.478	0.374	6.7242901195E+001	2.3198758306E+001	-1.4103051859E+001	0.908
1.299	1.349						
78.374	1.299	257.567	0.373	6.4139705594E+001	2.1882457780E+001	-1.4251386549E+001	0.888
1.299	1.355						
78.416	1.295	257.585	0.382	6.3520547641E+001	2.1619138913E+001	-1.4342513798E+001	0.884
1.300	1.356						
78.660	1.258	257.676	0.384	6.0268399506E+001	2.0230061559E+001	-1.4712103071E+001	0.861
1.304	1.365						
78.708	1.253	257.697	0.386	5.9550602120E+001	1.9924254694E+001	-1.4721852553E+001	0.856
1.306	1.367						
78.951	1.213	257.789	0.382	5.6284007825E+001	1.8535552854E+001	-1.3689273644E+001	0.831
1.315	1.379						
79.014	1.204	257.813	0.398	5.5424211466E+001	1.8173344281E+001	-1.3779752245E+001	0.824
1.318	1.382						
79.257	1.167	257.911	0.407	5.2049664649E+001	1.6762267706E+001	-1.4854302472E+001	0.797
1.331	1.397						
79.312	1.161	257.935	0.394	5.1220016347E+001	1.6419088550E+001	-1.4688027241E+001	0.790
1.334	1.400						
79.556	1.119	258.028	0.393	4.8065284620E+001	1.5131583397E+001	-1.4298982395E+001	0.763
1.349	1.415						
79.606	1.113	258.050	0.394	4.7335384173E+001	1.4838514179E+001	-1.4234735626E+001	0.757
1.352	1.418						
79.850	1.070	258.144	0.394	4.4272421515E+001	1.3626915527E+001	-1.3755900198E+001	0.730
1.368	1.432						
79.897	1.064	258.165	0.395	4.3604211459E+001	1.3366984498E+001	-1.3686260966E+001	0.724
1.372	1.435						
80.141	1.019	258.259	0.395	4.0644699276E+001	1.2232425146E+001	-1.3243066171E+001	0.698
1.388	1.449						
80.188	1.013	258.279	0.398	4.0013932761E+001	1.1994308458E+001	-1.3057951165E+001	0.692
1.391	1.452						
80.350	0.982	258.342	0.405	3.8119435735E+001	1.1287925818E+001	-1.2317658630E+001	0.675
1.401	1.460						
80.478	0.964	258.397	0.417	3.6484900212E+001	1.0684080544E+001	-1.2489912882E+001	0.659
1.409	1.467						
80.721	0.922	258.497	0.422	3.3591946253E+001	9.6352402740E+000	-1.3307808408E+001	0.630
1.425	1.477						
80.768	0.918	258.519	0.427	3.2959464363E+001	9.4087584744E+000	-1.3249824672E+001	0.623
1.428	1.479						
81.011	0.876	258.621	0.429	3.0154505212E+001	8.4194467446E+000	-1.2854838048E+001	0.593
1.442	1.486						
81.059	0.871	258.644	0.434	2.9525067245E+001	8.2005324026E+000	-1.2787764782E+001	0.585
1.445	1.488						
81.303	0.830	258.748	0.436	2.6819384601E+001	7.2757648918E+000	-1.2331976831E+001	0.555
1.459	1.491						
81.353	0.825	258.772	0.434	2.6188462628E+001	7.0636140422E+000	-1.2214679269E+001	0.547
1.462	1.492						
81.597	0.783	258.875	0.426	2.3650155069E+001	6.2285278889E+000	-1.0571586981E+001	0.516
1.474	1.492						
81.648	0.776	258.898	0.441	2.3108884702E+001	6.0550043794E+000	-1.0526857502E+001	0.509
1.476	1.491						
81.891	0.738	259.005	0.447	2.0633458483E+001	5.2745486020E+000	-1.0802550509E+001	0.477
1.487	1.487						
81.941	0.733	259.029	0.434	2.0090572751E+001	5.1063303605E+000	-1.0643663997E+001	0.469
1.489	1.486						
82.184	0.692	259.132	0.434	1.7843688928E+001	4.4268039933E+000	-1.0025629500E+001	0.438

1.498	1.479							
82.235	0.686	259.156	0.434	1.7332223230E+001	4.2751651388E+000	-9.9207642174E+000	0.430	
1.500	1.477							
82.478	0.645	259.260	0.434	1.5234845462E+001	3.6679365906E+000	-9.3699791380E+000	0.399	
1.509	1.468							
82.526	0.640	259.283	0.433	1.4778668564E+001	3.5382390365E+000	-9.2682508842E+000	0.392	
1.510	1.466							
82.770	0.598	259.386	0.432	1.2832016974E+001	2.9968102054E+000	-8.6509660309E+000	0.360	
1.518	1.456							
82.819	0.593	259.410	0.428	1.2395577624E+001	2.8773002776E+000	-8.4597372665E+000	0.352	
1.520	1.454							
83.000	0.560	259.484	0.431	1.1081471308E+001	2.5244710097E+000	-7.6400318896E+000	0.329	
1.527	1.447							
83.112	0.545	259.536	0.435	1.0203712863E+001	2.2914644660E+000	-7.5419868761E+000	0.313	
1.532	1.442							
83.355	0.504	259.639	0.434	8.5384226167E+000	1.8590915532E+000	-7.3459976063E+000	0.280	
1.543	1.434							
83.404	0.498	259.663	0.430	8.1733667360E+000	1.7655408501E+000	-7.2253509387E+000	0.272	
1.547	1.433							
83.648	0.456	259.765	0.429	6.6835113723E+000	1.3902024330E+000	-6.5815287309E+000	0.238	
1.563	1.430							
83.694	0.451	259.787	0.427	6.3726591801E+000	1.3131776270E+000	-6.4634336474E+000	0.230	
1.568	1.430							
83.938	0.407	259.888	0.420	5.0619210733E+000	9.9494307033E-001	-5.4391435032E+000	0.195	
1.593	1.434							
83.987	0.400	259.910	0.414	4.7950244342E+000	9.3123978364E-001	-5.2993678964E+000	0.187	
1.599	1.436							
84.230	0.355	260.009	0.406	3.6876966949E+000	6.7638609419E-001	-4.5758634528E+000	0.154	
1.630	1.445							
84.279	0.345	260.029	0.412	3.4650595093E+000	6.2454912165E-001	-4.5362485009E+000	0.146	
1.638	1.448							
84.523	0.302	260.130	0.420	2.4157505446E+000	3.8904651652E-001	-4.2276563607E+000	0.104	
1.685	1.471							
84.572	0.294	260.152	0.422	2.2068003061E+000	3.4406391446E-001	-4.0754551717E+000	0.095	
1.699	1.479							
84.816	0.251	260.254	0.424	1.3765618531E+000	1.7895225767E-001	-3.3606541648E+000	0.058	
1.775	1.529							
84.864	0.245	260.276	0.445	1.2160116481E+000	1.4939197140E-001	-3.2205648358E+000	0.058	
1.800	1.547							
85.107	0.208	260.383	0.423	5.9338536346E-001	6.1300331766E-002	-2.0070429986E+000	0.058	
1.926	1.654							
85.194	0.188	260.415	0.423	4.3681717248E-001	4.3961622219E-002	-1.8073170019E+000	0.058	
1.977	1.696							

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)
66.017	0.244	0.283	-30.668	-0.705	-0.200	5.536	1.568
66.261	0.244	0.283	-30.668	-2.115	-0.599	6.660	1.886
66.504	0.036	0.042	-30.668	-2.924	-0.122	7.475	0.312
66.540	0.244	0.283	-30.668	-3.824	-1.083	8.724	2.471
66.784	0.244	0.283	-30.668	-5.417	-1.534	11.582	3.280
67.027	0.094	0.109	-30.668	-6.520	-0.709	12.921	1.405
67.121	0.244	0.279	-29.322	-7.357	-2.055	14.742	4.119
67.364	0.244	0.279	-29.322	-8.845	-2.471	16.030	4.478
67.608	0.020	0.023	-29.322	-9.650	-0.218	16.879	0.382
67.628	0.244	0.271	-26.061	-9.480	-2.570	18.136	4.917
67.871	0.086	0.096	-26.061	-10.320	-0.989	19.268	1.847
67.957	0.244	0.262	-21.482	-9.335	-2.443	20.844	5.456
68.201	0.020	0.022	-21.482	-9.831	-0.217	21.641	0.477
68.221	0.244	0.253	-15.367	-7.256	-1.833	22.175	5.602
68.465	0.027	0.028	-15.367	-7.552	-0.208	23.469	0.646

68.491	0.233	0.237	-10.330	-4.846	-1.146	23.469	5.551
68.724	0.244	0.244	-4.975	-1.599	-0.391	23.617	5.774
68.968	0.016	0.016	-4.975	-1.636	-0.027	23.538	0.387
68.984	0.244	0.244	-0.599	1.379	0.336	23.369	5.693
69.228	0.040	0.040	-0.599	1.405	0.057	23.325	0.939
69.268	0.244	0.244	2.482	3.644	0.888	23.192	5.654
69.511	0.116	0.116	2.482	3.714	0.430	23.304	2.699
69.627	0.033	0.033	3.005	4.127	0.136	23.548	0.774
69.660	0.244	0.244	3.005	4.184	1.021	23.467	5.724
69.904	0.048	0.048	3.005	4.244	0.203	23.816	1.141
69.951	0.244	0.244	3.612	4.765	1.163	23.897	5.832
70.195	0.060	0.060	3.612	4.831	0.290	24.073	1.445
70.255	0.244	0.244	4.249	5.393	1.317	24.205	5.912
70.499	0.049	0.049	4.249	5.460	0.269	24.399	1.202
70.548	0.244	0.244	4.918	6.056	1.480	24.498	5.989
70.791	0.046	0.046	4.918	6.124	0.280	24.800	1.133
70.837	0.244	0.245	5.536	6.690	1.637	24.710	6.047
71.080	0.041	0.042	5.536	6.759	0.281	25.014	1.041
71.122	0.244	0.245	6.157	7.334	1.797	24.961	6.115
71.365	0.044	0.044	6.157	7.405	0.328	25.252	1.119
71.409	0.244	0.245	6.759	7.973	1.956	25.238	6.190
71.653	0.047	0.047	6.759	8.044	0.381	25.496	1.208
71.700	0.244	0.246	7.335	8.597	2.111	25.471	6.255
71.944	0.055	0.056	7.335	8.670	0.484	25.744	1.439
71.999	0.244	0.246	7.380	8.780	2.156	25.829	6.344
72.243	0.054	0.054	7.380	8.852	0.478	26.094	1.409
72.296	0.244	0.246	7.424	8.963	2.202	26.173	6.429
72.540	0.051	0.051	7.424	9.035	0.461	26.416	1.349
72.590	0.190	0.191	7.469	9.133	1.747	26.460	5.061
72.780	0.104	0.105	7.469	9.222	0.969	26.714	2.807
72.884	0.244	0.246	7.515	9.406	2.311	26.989	6.631
73.128	0.048	0.048	7.515	9.526	0.459	27.286	1.314
73.176	0.244	0.246	7.561	9.689	2.381	27.517	6.761
73.419	0.052	0.053	7.561	9.812	0.519	27.828	1.471
73.471	0.244	0.246	7.607	9.977	2.452	28.058	6.895
73.715	0.055	0.055	7.607	10.101	0.560	28.389	1.573
73.770	0.244	0.246	7.651	10.268	2.523	28.576	7.023
74.014	0.062	0.063	7.651	10.394	0.654	28.909	1.819
74.076	0.244	0.246	7.694	10.564	2.596	29.119	7.157
74.319	0.071	0.072	7.694	10.694	0.765	29.379	2.103
74.390	0.244	0.247	9.248	12.378	3.055	29.202	7.207
74.634	0.043	0.044	9.248	12.499	0.545	29.391	1.282
74.677	0.244	0.248	11.004	14.367	3.565	29.147	7.233
74.921	0.035	0.036	11.004	14.483	0.519	29.315	1.051
74.956	0.244	0.250	12.885	16.439	4.108	29.022	7.252
75.199	0.026	0.026	12.885	16.543	0.436	29.172	0.769
75.225	0.015	0.015	14.706	18.308	0.282	28.752	0.443
75.240	0.244	0.252	14.706	18.396	4.633	28.878	7.272
75.484	0.025	0.026	14.706	18.487	0.487	29.012	0.764
75.509	0.244	0.254	16.528	20.262	5.148	28.677	7.286
75.753	0.028	0.029	16.528	20.335	0.590	28.799	0.836
75.780	0.244	0.257	18.321	21.999	5.645	28.459	7.302
76.024	0.039	0.041	18.321	22.051	0.904	28.583	1.172
76.063	0.244	0.259	19.933	23.467	6.080	28.291	7.330
76.307	0.051	0.054	19.933	23.494	1.266	28.421	1.532
76.357	0.244	0.261	21.295	24.619	6.436	28.204	7.373
76.601	0.083	0.089	21.295	24.620	2.184	28.299	2.510
76.683	0.244	0.263	22.147	25.279	6.648	28.073	7.383
76.927	0.059	0.063	22.147	25.261	1.603	28.264	1.793
76.986	0.244	0.265	23.085	25.942	6.869	27.933	7.396
77.229	0.048	0.052	23.085	25.904	1.351	28.041	1.462
77.277	0.244	0.267	24.060	26.561	7.085	27.715	7.393
77.521	0.040	0.044	24.060	26.501	1.164	27.823	1.222
77.561	0.139	0.153	25.033	27.132	4.163	27.410	4.205
77.700	0.149	0.164	25.033	26.957	4.426	27.487	4.513
77.849	0.244	0.271	25.966	27.197	7.368	26.995	7.314
78.092	0.038	0.042	25.966	26.915	1.131	27.121	1.140
78.130	0.244	0.273	26.889	27.180	7.423	26.465	7.228
78.374	0.043	0.048	26.889	26.864	1.285	26.528	1.269
78.416	0.244	0.275	27.759	27.026	7.439	25.915	7.133
78.660	0.048	0.054	27.759	26.675	1.444	25.942	1.405
78.708	0.244	0.277	28.557	26.730	7.413	25.237	6.999
78.951	0.062	0.071	28.557	26.332	1.873	25.011	1.779
79.014	0.244	0.278	28.816	26.059	7.244	24.682	6.862
79.257	0.055	0.063	28.816	25.662	1.611	24.606	1.545
79.312	0.244	0.279	29.085	25.387	7.076	23.880	6.656
79.556	0.050	0.057	29.085	24.987	1.432	23.859	1.367
79.606	0.244	0.279	29.357	24.704	6.904	23.159	6.472
79.850	0.048	0.055	29.357	24.297	1.332	23.097	1.266

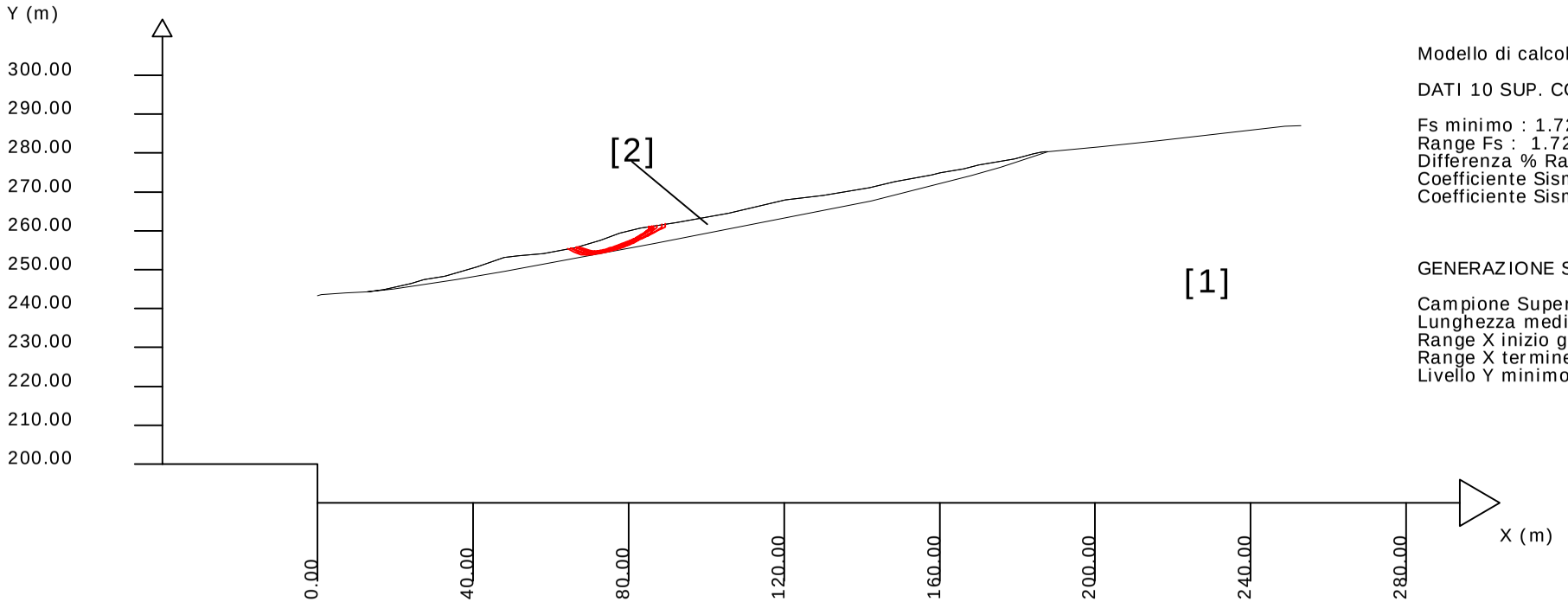
79.897	0.244	0.280	29.630	24.002	6.726	22.431	6.286
80.141	0.047	0.054	29.630	23.587	1.272	22.349	1.205
80.188	0.162	0.187	29.896	23.393	4.373	21.781	4.071
80.350	0.128	0.147	29.896	22.970	3.381	21.678	3.190
80.478	0.244	0.282	30.162	22.523	6.345	21.084	5.940
80.721	0.047	0.054	30.162	22.090	1.190	21.062	1.134
80.768	0.244	0.282	30.424	21.745	6.142	20.372	5.754
81.011	0.048	0.056	30.424	21.299	1.185	20.322	1.131
81.059	0.244	0.283	30.680	20.935	5.929	19.641	5.563
81.303	0.050	0.058	30.680	20.477	1.194	19.558	1.140
81.353	0.244	0.283	30.681	20.018	5.670	18.907	5.355
81.597	0.051	0.059	30.681	19.558	1.161	18.610	1.105
81.648	0.244	0.283	30.682	19.099	5.409	18.237	5.165
81.891	0.050	0.058	30.682	18.641	1.076	18.039	1.042
81.941	0.244	0.283	30.683	18.183	5.150	17.482	4.952
82.184	0.050	0.058	30.683	17.724	1.034	17.306	1.010
82.235	0.244	0.283	30.683	17.266	4.890	16.781	4.753
82.478	0.048	0.056	30.683	16.811	0.937	16.599	0.925
82.526	0.244	0.283	30.684	16.356	4.632	16.096	4.559
82.770	0.050	0.058	30.684	15.898	0.918	15.898	0.918
82.819	0.181	0.210	30.685	15.538	3.263	15.468	3.249
83.000	0.112	0.130	30.685	15.047	1.953	15.227	1.976
83.112	0.244	0.283	30.685	14.380	4.073	14.673	4.156
83.355	0.049	0.057	30.685	13.830	0.788	14.395	0.820
83.404	0.244	0.283	30.686	13.280	3.762	13.888	3.934
83.648	0.047	0.054	30.686	12.735	0.690	13.603	0.737
83.694	0.244	0.283	30.691	12.191	3.453	13.108	3.713
83.938	0.049	0.057	30.691	11.641	0.663	12.767	0.727
83.987	0.244	0.283	30.696	11.092	3.142	12.310	3.487
84.230	0.049	0.057	30.696	10.543	0.596	11.982	0.677
84.279	0.244	0.283	30.700	9.994	2.831	11.597	3.285
84.523	0.050	0.058	30.700	9.443	0.545	11.230	0.648
84.572	0.244	0.283	30.705	8.892	2.519	10.785	3.055
84.816	0.048	0.056	30.705	8.344	0.465	10.419	0.581
84.864	0.244	0.283	30.711	7.796	2.209	9.964	2.823
85.107	0.086	0.100	30.711	7.175	0.721	9.507	0.955
85.194	0.244	0.283	30.716	6.554	1.857	9.115	2.583

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

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



Modello di calcolo : Borselli (2016)

DATI 10 SUP. CON MINOR Fs

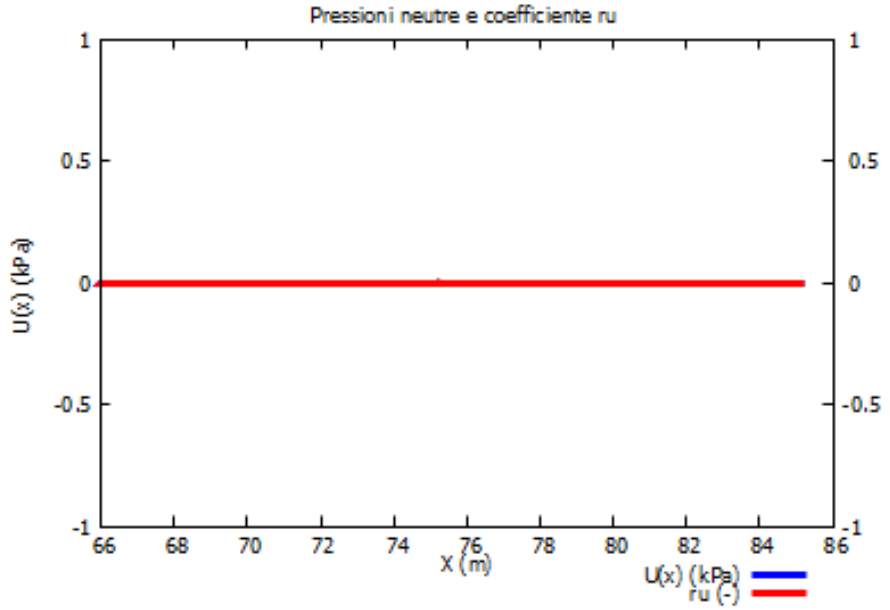
Fs minimo : 1.7273
Range Fs : 1.7273 1.7501
Differenza % Range Fs : 1.30
Coefficiente Sismico orizzontale - Kh: 0.0450
Coefficiente Sismico verticale - Kv: 0.0225

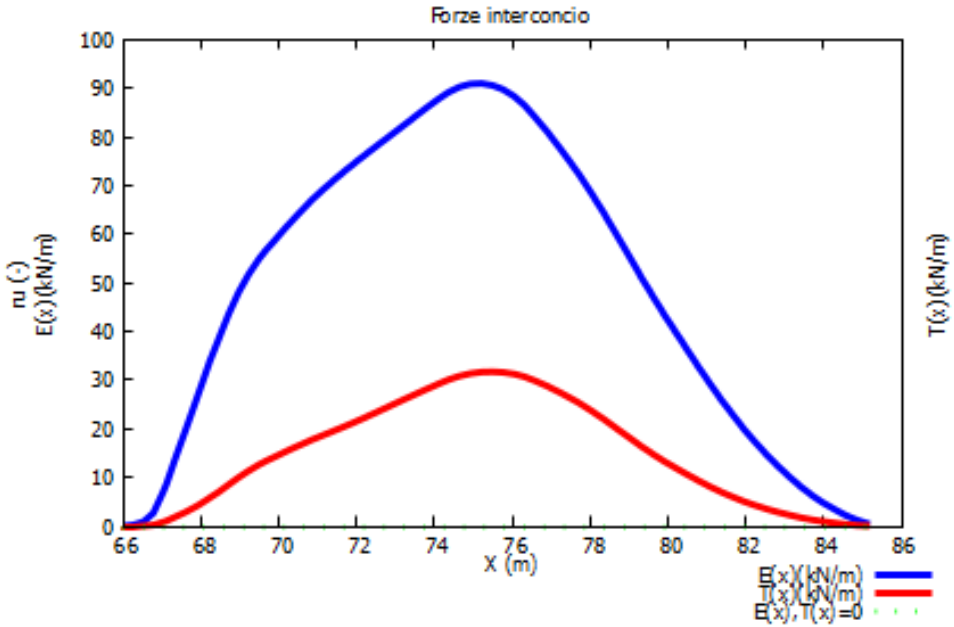
GENERAZIONE SUPERFICI RANDOM

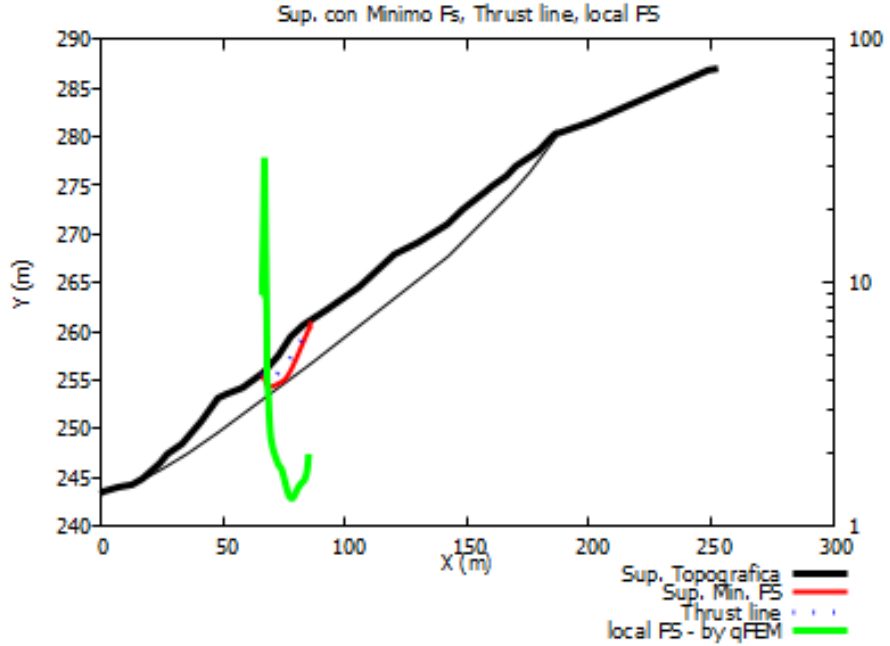
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 10.1
Range X inizio generazione : 5.1 - 232.7
Range X termine generazione : 30.4 - 247.9
Livello Y minimo considerato : 204.0

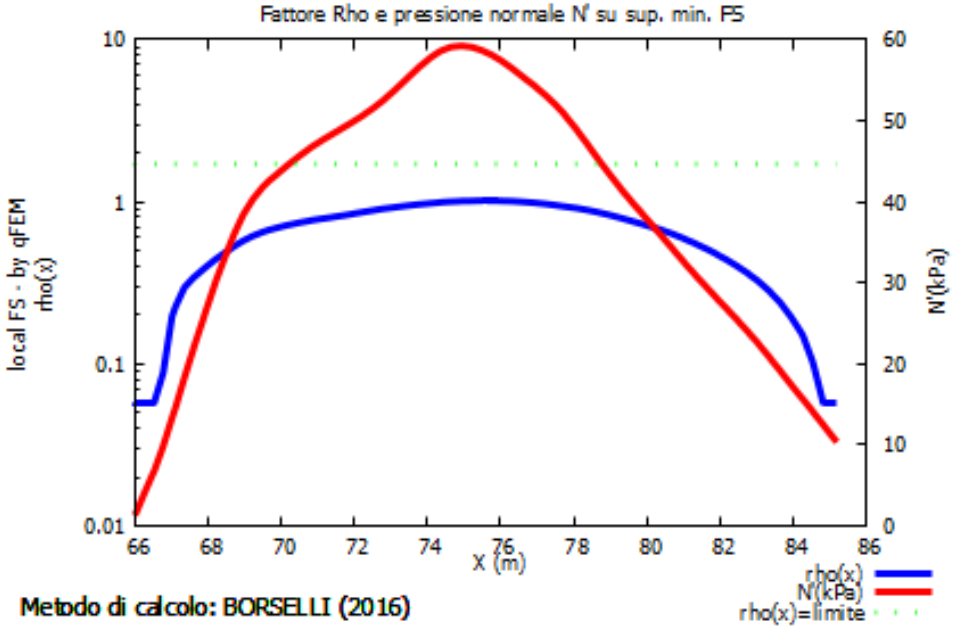
Parametri Geotecnici degli strati # ----------

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
2	22.00	5.00	0	18.00	20.00	0	0	0	0





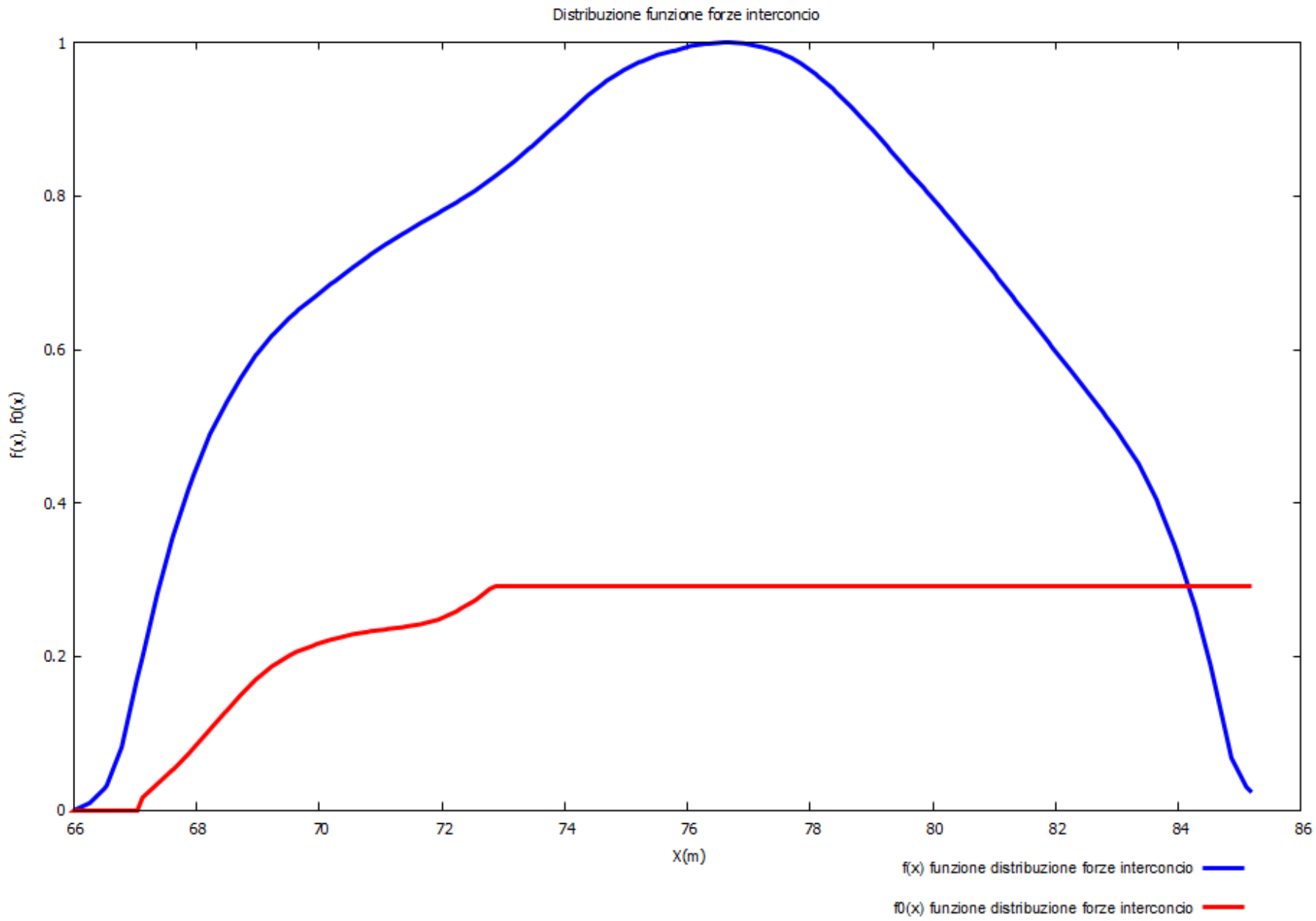


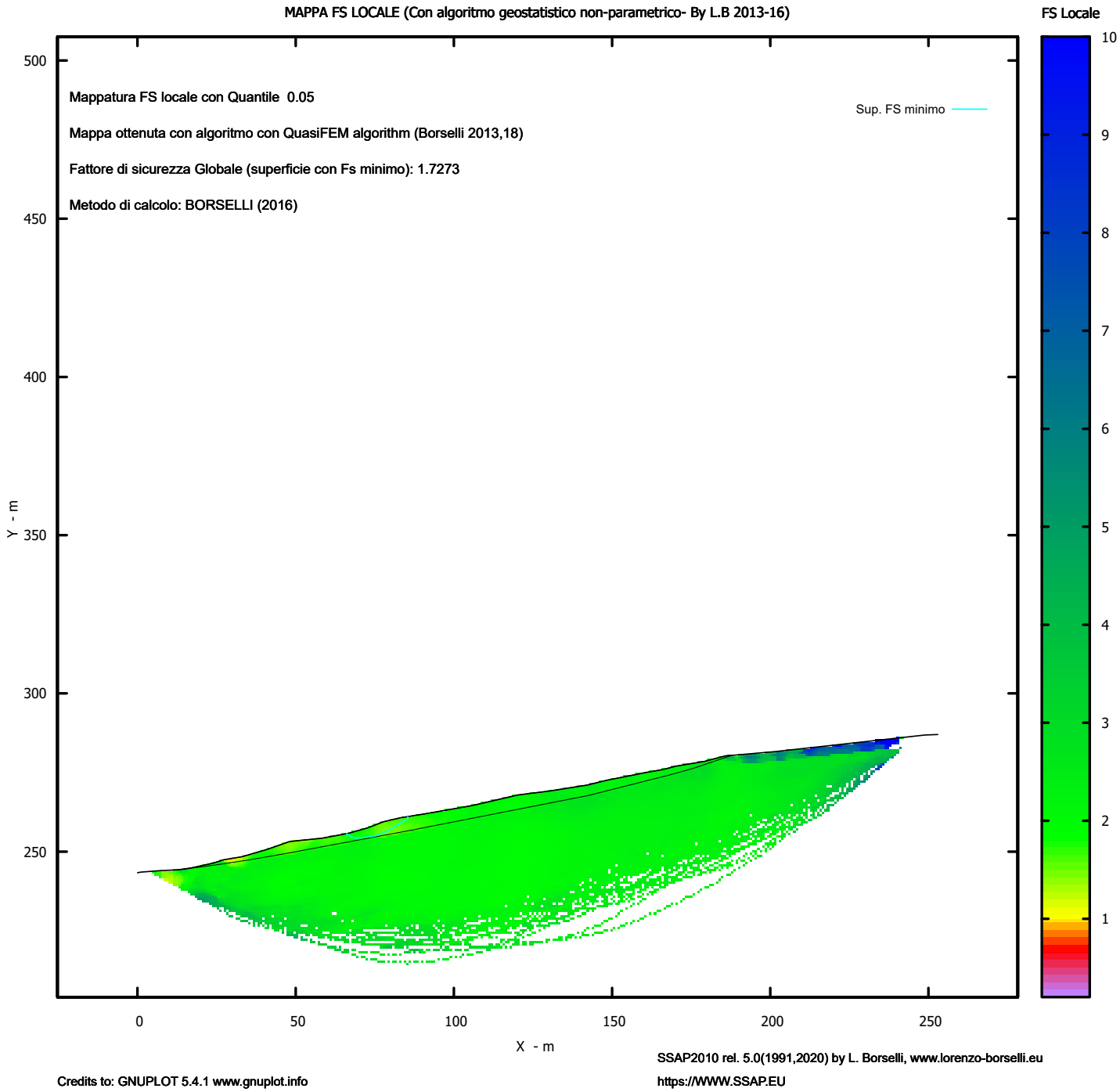


Metodo di calcolo: BORSELLI (2016)

SSAP2010 (versione 5.0 - 2020) - DISTRIBUZIONE FORZE e PRESSIONI

10/11/21 19:18

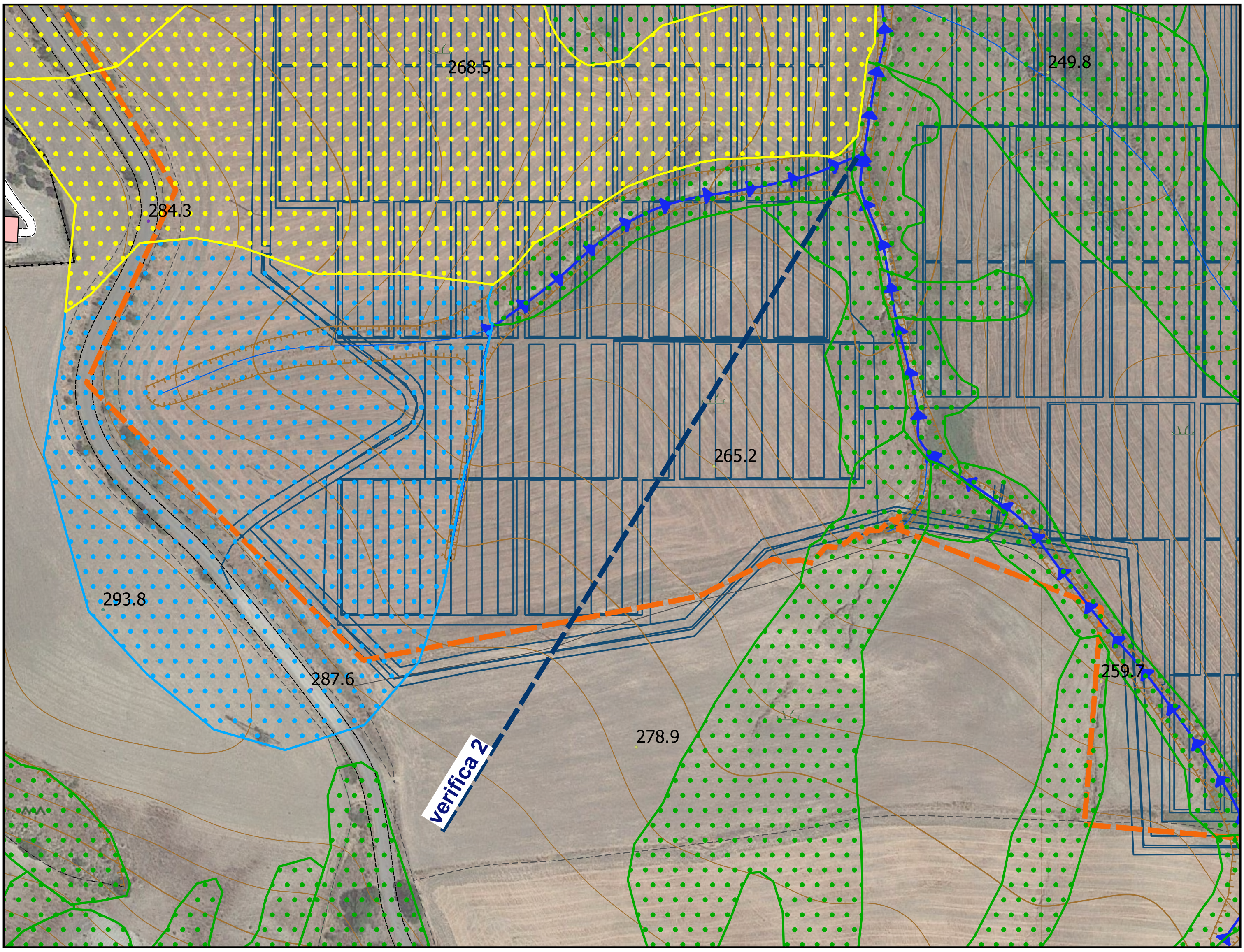


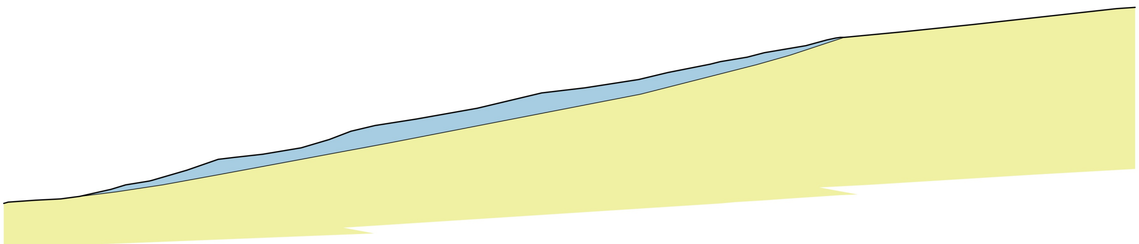

MAPPA FS LOCALE (Con algoritmo geostatistico non-parametrico- By L.B 2013-16)
FS Locale
Mappatura FS locale con Quantile 0.05
Mappa ottenuta con algoritmo con QuasiFEM algorithm (Borselli 2013,18)
Fattore di sicurezza Globale (superficie con Fs minimo): 1.7273
Metodo di calcolo: BORSELLI (2016)
Sup. FS minimo
Y - m
X - m
500
450
400
350
300
250
0
50
100
150
200
250
10
9
8
7
6
5
4
3
2
1
Credits to: GNUPLOT 5.4.1 www.gnuplot.info
SSAP2010 rel. 5.0(1991,2020) by L. Borselli, www.lorenzo-borselli.eu
https://WWW.SSAP.EU

SEZIONE DI VERIFICA N. 2

CONDIZIONI NON DRENATE

SEZIONE DI VERIFICA N. 2





220

DISTANZE PROGRESSIVE	DISTANZE PARZIALI	QUOTE
0	1	243.33
1	6.12	243.55
7.12	5.63	243.99
12.75	4.25	244.24
17	7	244.85
24	3.25	246.4
27.25	5.31	247.4
32.56	0.56	248.32
33.12	7.88	248.4
41	7	250.71
48	3.5	253.14
51.5	6.5	253.56
58	8.54	254.19
66.54	6.24	255.75
72.78	4.92	257.52
77.7	5.3	259.44
83	9.19	260.68
92.19	13.68	262.16
105.86	14.4	264.57
120.26	9.75	267.92
130.02	11.98	269.14
142	6.5	271.02
148.5	9.41	272.59
157.91	2.34	274.43
160.25	5.98	274.92
166.23	3.77	275.97
170	9.28	276.98
179.28	4.72	278.52
184	2	279.78
186	[illegible]	[illegible]
[illegible]	0.87	[illegible]
187.87	13.63	280.41
201.5	15	281.6
216.5	32.36	283.26
248.86	4.09	286.85
252.95		287.02

ARGILLE MARNOSE DEL T. SAURO (Pliocene sup.)
Argille marnose azzurre o grigio verdi a frattura concoide con fitte intercalazioni sottili di sabbie giallastre

CORPI DI FRANA (Olocene)
Coperture di natura limoso argillosa

Report elaborazioni

SSAP 5.0 - Slope Stability Analysis Program (1991,2020)
WWW.SSAP.EU
Build No. 11719
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: 12 settembre 2020

File report: C:\SSAP\CRACO\SERRACARUSOMOR\VERIFICA 2\NON DRENATA\MORG\MORG.txt
Data: 11/11/2021
Localita' :
Descrizione:
Modello pendio: VERIFICANONDRENATA2.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	243.32	12.75	244.24	-	-	-	-
1.00	243.53	19.45	245.08	-	-	-	-
7.12	243.99	25.18	245.86	-	-	-	-
12.75	244.24	35.52	247.43	-	-	-	-
17.00	244.85	48.12	249.63	-	-	-	-
24.00	246.40	86.42	256.75	-	-	-	-
27.25	247.40	142.37	267.72	-	-	-	-
32.56	248.32	168.24	274.24	-	-	-	-
33.12	248.40	175.79	276.36	-	-	-	-
41.00	250.71	187.87	280.41	-	-	-	-
48.00	253.14	187.00	280.41	-	-	-	-
51.50	253.56	186.00	280.27	-	-	-	-
58.00	254.19	184.00	279.78	-	-	-	-
66.54	255.75	179.28	278.52	-	-	-	-
72.78	257.52	170.00	276.98	-	-	-	-
77.70	259.44	166.23	275.97	-	-	-	-
83.00	260.68	160.25	274.92	-	-	-	-
92.19	262.16	157.91	274.43	-	-	-	-
105.86	264.57	148.50	272.59	-	-	-	-
120.26	267.92	142.00	271.02	-	-	-	-
130.02	269.14	130.02	269.14	-	-	-	-
142.00	271.02	120.26	267.92	-	-	-	-
148.50	272.59	105.86	264.57	-	-	-	-
157.91	274.43	92.19	262.16	-	-	-	-
160.25	274.92	83.00	260.68	-	-	-	-
166.23	275.97	77.70	259.44	-	-	-	-
170.00	276.98	72.78	257.52	-	-	-	-
179.28	278.52	66.54	255.75	-	-	-	-
184.00	279.78	58.00	254.19	-	-	-	-
186.00	280.27	51.50	253.56	-	-	-	-
187.00	280.41	48.00	253.14	-	-	-	-
187.87	280.41	41.00	250.71	-	-	-	-
201.50	281.60	33.12	248.40	-	-	-	-
216.50	283.26	32.56	248.32	-	-	-	-
248.86	286.85	27.25	247.40	-	-	-	-
252.95	287.02	24.00	246.40	-	-	-	-
-	-	17.00	244.85	-	-	-	-
-	-	12.75	244.24	-	-	-	-

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
STRATO 2	0.00	0.00	38.00	18.00	20.00	2.127	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
      METODO DI RICERCA: CONVEX RANDOM       - Chen     (1992)
      FILTRAGGIO SUPERFICI : ATTIVATO
      COORDINATE X1,X2,Y OSTACOLO :         0.00            0.00            0.00
      LUNGHEZZA MEDIA SEGMENTI (m):               10.1   (+/-) 50%
      INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax):      5.06          232.71
      LIVELLO MINIMO CONSIDERATO (Ymin):                   240.00
      INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax):       30.35          247.89

  *** TOTALE SUPERFICI GENERATE :        10000

  ------------ 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 : 0.0450
      COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0225
      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)    1.2619  - Min. -    X       Y       Lambda=  0.1869
                                              62.68  255.04
                                              70.53  249.19
                                              74.16  246.61
                                              76.52  245.12
                                              78.42  244.10
                                              80.35  243.32
                                              82.01  242.80
                                              83.86  242.42
                                              85.86  242.16
                                              88.40  241.98
                                              90.72  241.83
                                              92.90  241.70
                                              95.02  241.59
                                              97.10  241.48
                                              99.16  241.39
                                             101.24  241.31
                                             103.34  241.24
                                             105.47  241.18
                                             107.57  241.13
                                             109.64  241.10
                                             111.71  241.07
                                             113.79  241.05
                                             115.86  241.05
                                             117.95  241.05
                                             120.06  241.07
                                             122.23  241.10
                                             124.31  241.15
                                             126.37  241.22
                                             128.41  241.31
                                             130.47  241.43
                                             132.52  241.57
                                             134.60  241.73
                                             136.73  241.92
                                             138.96  242.15
                                             141.06  242.39
                                             143.11  242.67
                                             145.11  242.98
```

147.16	243.34
149.17	243.73
151.23	244.17
153.36	244.66
155.65	245.23
157.77	245.80
159.81	246.40
161.80	247.03
163.84	247.73
165.82	248.46
167.85	249.25
169.91	250.11
172.11	251.07
174.27	252.01
176.38	252.95
178.48	253.88
180.55	254.81
182.64	255.75
184.74	256.70
186.86	257.67
189.01	258.65
191.09	259.64
193.14	260.63
195.17	261.65
197.24	262.71
199.28	263.80
201.36	264.93
203.50	266.12
205.74	267.41
207.83	268.66
209.88	269.93
211.87	271.23
213.92	272.63
216.16	274.24
216.16	283.22

Fattore di sicurezza (FS) 1.3032 - N.2 -- X Y Lambda= 0.1818

71.44	257.14
82.56	249.77
87.68	246.55
91.00	244.71
93.66	243.50
96.38	242.60
98.71	242.05
101.32	241.70
104.18	241.55
107.83	241.55
111.10	241.58
114.15	241.65
117.09	241.75
120.00	241.89
122.88	242.07
125.81	242.28
128.80	242.53
131.95	242.83
134.91	243.16
137.81	243.53
140.65	243.94
143.55	244.41
146.39	244.91
149.29	245.48
152.27	246.10
155.42	246.82
158.41	247.53
161.33	248.27
164.20	249.03
167.11	249.85
169.97	250.69
172.88	251.59
175.84	252.55
178.93	253.58
181.92	254.61
184.85	255.65
187.75	256.71
190.67	257.80
193.59	258.93
196.58	260.11
199.67	261.36

202.95	262.71
205.86	264.03
208.66	265.43
211.33	266.91
214.18	268.63
217.19	270.65
220.70	273.19
223.10	275.04
223.10	283.99

Fattore di sicurezza (FS) 1.3188 - N.3 -- Lambda= 0.1802

X	Y
65.19	255.50
78.70	249.04
85.05	246.17
89.29	244.49
92.78	243.36
96.24	242.53
99.35	242.01
102.72	241.67
106.33	241.51
110.68	241.52
114.64	241.58
118.39	241.68
122.01	241.83
125.63	242.03
129.21	242.28
132.88	242.59
136.69	242.96
140.77	243.40
144.43	243.90
147.96	244.50
151.35	245.18
154.91	246.02
158.30	246.94
161.82	248.02
165.47	249.24
169.50	250.71
173.31	252.14
177.01	253.56
180.63	255.00
184.26	256.48
187.86	257.99
191.51	259.56
195.24	261.20
199.10	262.95
202.79	264.68
206.40	266.43
209.95	268.22
213.57	270.11
217.56	272.28
222.05	274.81
222.05	283.88

Fattore di sicurezza (FS) 1.3311 - N.4 -- Lambda= 0.1527

X	Y
76.45	258.95
88.37	252.52
94.06	249.57
97.91	247.78
101.15	246.46
104.29	245.41
107.17	244.61
110.24	243.94
113.48	243.40
117.28	242.92
120.78	242.51
124.11	242.17
127.35	241.88
130.59	241.64
133.81	241.44
137.12	241.28
140.56	241.16
144.26	241.07
147.53	241.09
150.66	241.23
153.64	241.48
156.81	241.87
159.81	242.37

162.97	243.02
166.31	243.83
170.14	244.87
173.54	245.89
176.78	246.95
179.88	248.06
183.08	249.32
186.19	250.63
189.42	252.11
192.83	253.77
196.63	255.71
199.96	257.55
203.13	259.46
206.14	261.44
209.33	263.69
212.71	266.32
216.63	269.60
222.35	274.64
223.50	275.68
223.50	284.04

Fattore di sicurezza (FS) 1.3316 - N.5 -- X Y Lambda= 0.1508

87.46	261.40
101.40	251.40
107.78	247.05
111.89	244.57
115.16	242.96
118.52	241.75
121.38	241.02
124.61	240.55
128.16	240.34
132.76	240.33
136.86	240.37
140.67	240.45
144.34	240.57
147.96	240.74
151.59	240.97
155.33	241.24
159.27	241.58
163.57	242.00
167.18	242.51
170.58	243.18
173.74	244.01
177.21	245.15
180.41	246.41
183.87	248.00
187.60	249.91
192.02	252.38
195.91	254.68
199.56	256.98
203.04	259.32
206.62	261.88
210.47	264.85
214.90	268.47
221.29	273.93
222.36	274.87
222.36	283.91

Fattore di sicurezza (FS) 1.3321 - N.6 -- X Y Lambda= 0.1605

70.88	256.98
85.51	250.62
92.53	247.72
97.29	245.97
101.30	244.71
105.19	243.74
108.79	243.03
112.64	242.48
116.74	242.07
121.58	241.77
125.82	241.60
129.82	241.56
133.62	241.64
137.56	241.84
141.33	242.16
145.27	242.61
149.38	243.20
153.97	243.97

158.13	244.76
162.12	245.61
165.96	246.53
169.92	247.59
173.79	248.72
177.82	250.01
182.09	251.48
186.86	253.22
190.92	254.88
194.75	256.67
198.33	258.59
202.21	260.91
206.25	263.66
211.02	267.24
218.06	272.90
220.41	274.86
220.41	283.69

Fattore di sicurezza (FS) 1.3440 - N.7 -- X Y Lambda= 0.1619

61.03	254.74
76.05	250.72
83.63	248.75
88.95	247.46
93.65	246.40
97.94	245.53
102.16	244.74
106.48	244.00
110.96	243.31
115.76	242.64
120.14	242.13
124.36	241.74
128.44	241.48
132.68	241.33
136.80	241.30
141.11	241.38
145.68	241.59
150.84	241.94
155.23	242.39
159.36	243.01
163.23	243.78
167.39	244.84
171.28	246.03
175.45	247.52
179.90	249.31
185.11	251.60
189.65	253.75
193.92	255.95
197.96	258.23
202.19	260.80
206.68	263.81
211.89	267.54
219.46	273.29
221.98	275.26
221.98	283.87

Fattore di sicurezza (FS) 1.3449 - N.8 -- X Y Lambda= 0.1813

77.48	259.35
85.89	251.80
89.71	248.52
92.14	246.66
94.04	245.46
96.02	244.54
97.65	243.99
99.53	243.61
101.64	243.39
104.48	243.29
106.96	243.23
109.24	243.21
111.42	243.22
113.58	243.26
115.70	243.34
117.86	243.45
120.07	243.60
122.39	243.78
124.61	243.98
126.79	244.20
128.93	244.43

131.10	244.70
133.23	244.98
135.39	245.29
137.57	245.63
139.82	246.00
142.05	246.37
144.25	246.74
146.44	247.12
148.62	247.50
150.80	247.88
152.99	248.27
155.18	248.67
157.38	249.07
159.57	249.48
161.76	249.89
163.95	250.30
166.13	250.72
168.33	251.14
170.53	251.57
172.76	252.00
175.02	252.45
177.19	252.90
179.34	253.38
181.47	253.88
183.63	254.42
185.78	254.98
187.97	255.59
190.24	256.25
192.65	256.97
194.84	257.70
196.95	258.46
198.99	259.27
201.12	260.19
203.18	261.15
205.33	262.23
207.59	263.44
210.11	264.86
212.34	266.20
214.47	267.58
216.50	268.99
218.63	270.58
220.91	272.42
223.54	274.69
224.69	275.73
224.69	284.17

Fattore di sicurezza (FS) 1.3501 - N.9 -- X Y Lambda= 0.1794

57.65	254.16
74.39	249.47
82.50	247.34
88.06	246.09
92.80	245.22
97.33	244.62
101.56	244.24
106.01	244.02
110.65	243.95
115.90	244.05
120.81	244.18
125.54	244.35
130.16	244.58
134.79	244.85
139.39	245.18
144.08	245.56
148.90	246.01
153.99	246.52
158.67	247.10
163.20	247.78
167.60	248.56
172.17	249.50
176.61	250.53
181.26	251.74
186.16	253.14
191.66	254.83
196.38	256.47
200.83	258.24
205.02	260.15
209.53	262.45
214.23	265.19

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                                          219.76  268.75
                                          227.89  274.37
                                          230.60  276.30
                                          230.60  284.82


 Fattore di sicurezza (FS)    1.3539  - N.10 --    X       Y       Lambda=  0.1621
                                           75.83  258.71
                                           91.05  251.45
                                           98.18  248.24
                                          102.91  246.38
                                          106.79  245.15
                                          110.67  244.26
                                          114.12  243.72
                                          117.89  243.41
                                          121.94  243.31
                                          126.85  243.42
                                          131.31  243.57
                                          135.51  243.78
                                          139.58  244.03
                                          143.63  244.34
                                          147.64  244.71
                                          151.73  245.14
                                          155.93  245.65
                                          160.40  246.24
                                          164.54  246.87
                                          168.56  247.56
                                          172.47  248.33
                                          176.50  249.22
                                          180.47  250.18
                                          184.61  251.28
                                          189.00  252.55
                                          193.92  254.06
                                          198.01  255.52
                                          201.84  257.14
                                          205.39  258.91
                                          209.30  261.16
                                          213.32  263.86
                                          218.12  267.45
                                          225.27  273.26
                                          228.86  276.29
                                          228.86  284.63


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

    Sup N.    FS        FTR(kN/m)     FTA(kN/m)  Bilancio(kN/m)   ESITO
       1     1.262       17166.4       13604.2      2201.8        Surplus
       2     1.303       16920.9       12984.2      2638.3        Surplus
       3     1.319       17228.6       13063.9      2858.3        Surplus
       4     1.331       16787.1       12611.5      2914.4        Surplus
       5     1.332       16230.6       12189.0      2822.7        Surplus
       6     1.332       16725.7       12555.8      2914.2        Surplus
       7     1.344       17804.8       13247.5      3232.5        Surplus
       8     1.345       16523.6       12285.9      3009.1        Surplus
       9     1.350       18434.8       13654.5      3414.9        Surplus
      10     1.354       16937.0       12510.2      3175.8        Surplus

    Esito analisi:  SURPLUS di RESISTENZA!

    Valore minimo di SURPLUS di RESISTENZA (kN/m):       2201.8

    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            dx        alpha         W           ru           U         phi'       (c',Cu)
       (m)           (m)         (°)      (kN/m)         (-)       (kPa)        (°)        (kPa)
      62.676       1.214      -36.68       12.58        0.00        0.00        0.00       38.00
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63.890	1.214	-36.68	37.73	0.00	0.00	0.00	38.00
65.104	0.482	-36.68	21.96	0.00	0.00	0.00	38.00
65.586	0.954	-36.68	56.03	0.00	0.00	0.00	100.00
66.540	1.214	-36.68	97.63	0.00	0.00	0.00	100.00
67.754	1.214	-36.68	128.32	0.00	0.00	0.00	100.00
68.968	0.692	-36.68	86.90	0.00	0.00	0.00	100.00
69.660	0.871	-36.68	123.54	0.00	0.00	0.00	100.00
70.531	1.214	-35.42	198.05	0.00	0.00	0.00	100.00
71.745	1.035	-35.42	192.32	0.00	0.00	0.00	100.00
72.780	1.214	-35.42	254.49	0.00	0.00	0.00	100.00
73.994	0.164	-35.42	36.93	0.00	0.00	0.00	100.00
74.158	1.082	-32.38	257.26	0.00	0.00	0.00	100.00
75.240	1.214	-32.38	317.28	0.00	0.00	0.00	100.00
76.454	0.068	-32.38	18.57	0.00	0.00	0.00	100.00
76.522	1.178	-28.07	337.13	0.00	0.00	0.00	100.00
77.700	0.722	-28.07	218.61	0.00	0.00	0.00	100.00
78.422	1.214	-22.16	383.78	0.00	0.00	0.00	100.00
79.636	0.714	-22.16	234.56	0.00	0.00	0.00	100.00
80.350	0.003	-22.16	0.97	0.00	0.00	0.00	100.00
80.353	1.214	-17.22	412.81	0.00	0.00	0.00	100.00
81.567	0.445	-17.22	155.45	0.00	0.00	0.00	100.00
82.012	0.988	-11.81	351.80	0.00	0.00	0.00	100.00
83.000	0.859	-11.81	312.42	0.00	0.00	0.00	100.00
83.859	1.214	-7.26	449.97	0.00	0.00	0.00	100.00
85.073	0.789	-7.26	297.05	0.00	0.00	0.00	100.00
85.861	0.559	-3.99	212.41	0.00	0.00	0.00	100.00
86.420	1.175	-3.99	451.72	0.00	0.00	0.00	100.00
87.595	0.800	-3.99	311.38	0.00	0.00	0.00	100.00
88.395	1.214	-3.73	478.22	0.00	0.00	0.00	100.00
89.609	1.108	-3.73	442.65	0.00	0.00	0.00	100.00
90.717	1.214	-3.43	491.39	0.00	0.00	0.00	100.00
91.931	0.259	-3.43	105.59	0.00	0.00	0.00	100.00
92.190	0.711	-3.43	291.77	0.00	0.00	0.00	100.00
92.901	1.214	-3.13	503.92	0.00	0.00	0.00	100.00
94.115	0.907	-3.13	381.17	0.00	0.00	0.00	100.00
95.022	1.214	-2.81	516.10	0.00	0.00	0.00	100.00
96.236	0.859	-2.81	369.49	0.00	0.00	0.00	100.00
97.095	1.214	-2.51	527.72	0.00	0.00	0.00	100.00
98.309	0.716	-2.51	314.31	0.00	0.00	0.00	100.00
99.025	0.139	-2.51	61.43	0.00	0.00	0.00	100.00
99.164	1.214	-2.21	539.05	0.00	0.00	0.00	100.00
100.378	0.864	-2.21	387.73	0.00	0.00	0.00	100.00
101.242	1.214	-1.91	550.15	0.00	0.00	0.00	100.00
102.456	0.883	-1.91	404.33	0.00	0.00	0.00	100.00
103.340	1.214	-1.62	561.10	0.00	0.00	0.00	100.00
104.554	0.915	-1.62	427.11	0.00	0.00	0.00	100.00
105.469	0.391	-1.33	183.64	0.00	0.00	0.00	100.00
105.860	1.214	-1.33	574.66	0.00	0.00	0.00	100.00
107.074	0.492	-1.33	235.17	0.00	0.00	0.00	100.00
107.566	1.214	-1.04	585.27	0.00	0.00	0.00	100.00
108.780	0.864	-1.04	421.21	0.00	0.00	0.00	100.00
109.644	1.214	-0.74	597.94	0.00	0.00	0.00	100.00
110.858	0.855	-0.74	425.59	0.00	0.00	0.00	100.00
111.713	1.214	-0.44	610.29	0.00	0.00	0.00	100.00
112.927	0.133	-0.44	67.10	0.00	0.00	0.00	100.00
113.060	0.727	-0.44	369.15	0.00	0.00	0.00	100.00
113.787	1.214	-0.14	622.39	0.00	0.00	0.00	100.00
115.001	0.860	-0.14	444.98	0.00	0.00	0.00	100.00
115.860	1.214	0.16	634.23	0.00	0.00	0.00	100.00
117.074	0.873	0.16	460.52	0.00	0.00	0.00	100.00
117.948	1.214	0.45	645.87	0.00	0.00	0.00	100.00
119.161	0.902	0.45	484.18	0.00	0.00	0.00	100.00
120.063	0.197	0.74	106.03	0.00	0.00	0.00	100.00
120.260	1.214	0.74	657.01	0.00	0.00	0.00	100.00
121.474	0.751	0.74	408.30	0.00	0.00	0.00	100.00
122.225	1.214	1.33	662.67	0.00	0.00	0.00	100.00
123.439	0.875	1.33	479.46	0.00	0.00	0.00	100.00
124.314	0.826	1.96	454.53	0.00	0.00	0.00	100.00
125.140	1.214	1.96	670.15	0.00	0.00	0.00	100.00
126.354	0.019	1.96	10.67	0.00	0.00	0.00	100.00
126.373	1.214	2.60	672.98	0.00	0.00	0.00	100.00
127.587	0.822	2.60	457.40	0.00	0.00	0.00	100.00
128.410	1.214	3.24	677.19	0.00	0.00	0.00	100.00
129.624	0.396	3.24	221.66	0.00	0.00	0.00	100.00
130.020	0.453	3.24	253.61	0.00	0.00	0.00	100.00
130.473	1.214	3.90	681.64	0.00	0.00	0.00	100.00
131.687	0.832	3.90	468.98	0.00	0.00	0.00	100.00
132.519	1.214	4.54	686.18	0.00	0.00	0.00	100.00
133.733	0.866	4.54	490.99	0.00	0.00	0.00	100.00

134.599	1.214	5.16	690.22	0.00	0.00	0.00	100.00
135.813	0.197	5.16	112.15	0.00	0.00	0.00	100.00
136.010	0.719	5.16	410.12	0.00	0.00	0.00	100.00
136.729	1.214	5.74	693.80	0.00	0.00	0.00	100.00
137.943	1.021	5.74	584.81	0.00	0.00	0.00	100.00
138.964	1.214	6.69	696.89	0.00	0.00	0.00	100.00
140.178	0.883	6.69	507.48	0.00	0.00	0.00	100.00
141.060	0.940	7.73	540.85	0.00	0.00	0.00	100.00
142.000	0.370	7.73	213.22	0.00	0.00	0.00	100.00
142.370	0.736	7.73	425.18	0.00	0.00	0.00	100.00
143.106	1.214	8.81	703.29	0.00	0.00	0.00	100.00
144.320	0.786	8.81	456.92	0.00	0.00	0.00	100.00
145.107	0.143	9.89	83.50	0.00	0.00	0.00	100.00
145.250	1.214	9.89	707.59	0.00	0.00	0.00	100.00
146.464	0.693	9.89	405.11	0.00	0.00	0.00	100.00
147.157	1.214	10.97	710.53	0.00	0.00	0.00	100.00
148.371	0.129	10.97	75.40	0.00	0.00	0.00	100.00
148.500	0.666	10.97	390.48	0.00	0.00	0.00	100.00
149.166	1.214	12.04	711.35	0.00	0.00	0.00	100.00
150.380	0.849	12.04	497.07	0.00	0.00	0.00	100.00
151.229	1.214	13.05	710.45	0.00	0.00	0.00	100.00
152.443	0.762	13.05	445.61	0.00	0.00	0.00	100.00
153.205	0.155	13.05	90.62	0.00	0.00	0.00	100.00
153.360	1.214	13.94	708.59	0.00	0.00	0.00	100.00
154.574	1.080	13.94	629.09	0.00	0.00	0.00	100.00
155.654	1.214	15.06	705.59	0.00	0.00	0.00	100.00
156.868	0.900	15.06	521.51	0.00	0.00	0.00	100.00
157.767	0.143	16.31	82.64	0.00	0.00	0.00	100.00
157.910	1.170	16.31	676.19	0.00	0.00	0.00	100.00
159.080	0.733	16.31	422.65	0.00	0.00	0.00	100.00
159.813	0.437	17.61	251.29	0.00	0.00	0.00	100.00
160.250	1.214	17.61	695.86	0.00	0.00	0.00	100.00
161.464	0.336	17.61	191.60	0.00	0.00	0.00	100.00
161.799	1.214	18.90	690.32	0.00	0.00	0.00	100.00
163.013	0.227	18.90	128.33	0.00	0.00	0.00	100.00
163.240	0.604	18.90	341.35	0.00	0.00	0.00	100.00
163.844	1.214	20.15	681.86	0.00	0.00	0.00	100.00
165.058	0.764	20.15	426.08	0.00	0.00	0.00	100.00
165.822	0.408	21.40	226.84	0.00	0.00	0.00	100.00
166.230	1.214	21.40	671.60	0.00	0.00	0.00	100.00
167.444	0.401	21.40	221.17	0.00	0.00	0.00	100.00
167.845	0.270	22.55	148.44	0.00	0.00	0.00	100.00
168.115	0.125	22.55	68.71	0.00	0.00	0.00	100.00
168.240	1.214	22.55	664.80	0.00	0.00	0.00	100.00
169.454	0.458	22.55	249.81	0.00	0.00	0.00	100.00
169.912	0.088	23.59	47.79	0.00	0.00	0.00	100.00
170.000	1.214	23.59	656.67	0.00	0.00	0.00	100.00
171.214	0.899	23.59	481.31	0.00	0.00	0.00	100.00
172.113	1.214	23.72	643.03	0.00	0.00	0.00	100.00
173.327	0.939	23.72	491.82	0.00	0.00	0.00	100.00
174.266	0.374	23.85	194.81	0.00	0.00	0.00	100.00
174.640	1.150	23.85	593.73	0.00	0.00	0.00	100.00
175.790	0.588	23.85	301.04	0.00	0.00	0.00	100.00
176.378	1.214	23.98	615.24	0.00	0.00	0.00	100.00
177.592	0.884	23.98	443.06	0.00	0.00	0.00	100.00
178.476	0.804	24.11	399.13	0.00	0.00	0.00	100.00
179.280	1.214	24.11	597.65	0.00	0.00	0.00	100.00
180.494	0.060	24.11	29.53	0.00	0.00	0.00	100.00
180.554	1.086	24.24	529.86	0.00	0.00	0.00	100.00
181.640	1.004	24.24	486.35	0.00	0.00	0.00	100.00
182.644	1.214	24.37	582.91	0.00	0.00	0.00	100.00
183.858	0.142	24.37	67.66	0.00	0.00	0.00	100.00
184.000	0.742	24.37	352.91	0.00	0.00	0.00	100.00
184.742	0.258	24.50	122.49	0.00	0.00	0.00	100.00
185.000	1.000	24.50	471.29	0.00	0.00	0.00	100.00
186.000	0.863	24.50	402.76	0.00	0.00	0.00	100.00
186.863	0.137	24.63	63.43	0.00	0.00	0.00	100.00
187.000	0.870	24.63	399.66	0.00	0.00	0.00	100.00
187.870	1.141	24.63	514.87	0.00	0.00	0.00	100.00
189.011	1.214	25.26	536.77	0.00	0.00	0.00	100.00
190.225	0.864	25.26	375.03	0.00	0.00	0.00	100.00
191.089	1.214	25.93	516.71	0.00	0.00	0.00	100.00
192.303	0.840	25.93	350.39	0.00	0.00	0.00	100.00
193.143	1.214	26.60	496.15	0.00	0.00	0.00	100.00
194.357	0.818	26.60	327.21	0.00	0.00	0.00	100.00
195.174	1.214	27.26	475.08	0.00	0.00	0.00	100.00
196.388	0.849	27.26	324.54	0.00	0.00	0.00	100.00
197.237	1.214	27.93	452.94	0.00	0.00	0.00	100.00
198.451	0.832	27.93	302.61	0.00	0.00	0.00	100.00

199.283	1.214	28.58	430.23	0.00	0.00	0.00	100.00
200.497	0.867	28.58	298.70	0.00	0.00	0.00	100.00
201.363	0.137	29.20	46.45	0.00	0.00	0.00	100.00
201.500	1.214	29.20	405.14	0.00	0.00	0.00	100.00
202.714	0.783	29.20	254.14	0.00	0.00	0.00	100.00
203.497	1.214	29.78	382.72	0.00	0.00	0.00	100.00
204.711	1.029	29.78	313.47	0.00	0.00	0.00	100.00
205.740	1.214	30.84	356.65	0.00	0.00	0.00	100.00
206.954	0.880	30.84	249.37	0.00	0.00	0.00	100.00
207.834	1.214	31.98	330.96	0.00	0.00	0.00	100.00
209.048	0.829	31.98	217.00	0.00	0.00	0.00	100.00
209.876	1.214	33.15	304.48	0.00	0.00	0.00	100.00
211.090	0.780	33.15	187.02	0.00	0.00	0.00	100.00
211.870	1.214	34.28	277.20	0.00	0.00	0.00	100.00
213.084	0.838	34.28	181.27	0.00	0.00	0.00	100.00
213.922	1.214	35.73	247.55	0.00	0.00	0.00	100.00
215.136	1.022	35.73	194.21	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 (--)
62.676	0.000	255.044	-0.537	0.0000000000E+000	0.0000000000E+000	1.6634857566E+000	0.042	1.345	1.562
63.890	0.283	254.423	-0.537	4.1280608238E+001	5.4583609698E-002	6.6347145260E+001	0.042	1.345	1.562
65.104	0.505	253.741	-0.509	1.6108367002E+002	1.2397918212E+000	1.0768721822E+002	0.042	1.074	0.717
65.586	0.683	253.560	-0.416	2.1470399883E+002	2.4629504697E+000	1.2880851982E+002	0.042	1.139	1.734
66.540	0.977	253.143	-0.442	3.7076181085E+002	8.2421572432E+000	1.7929238508E+002	0.054	1.134	1.521
67.754	1.340	252.602	-0.438	6.1272152841E+002	2.1703255743E+001	2.1587910410E+002	0.089	1.113	1.374
68.968	1.722	252.080	-0.421	8.9489285272E+002	4.3576344063E+001	2.4394734921E+002	0.129	1.128	1.322
69.660	1.956	251.799	-0.405	1.0682710264E+003	5.9160520371E+001	2.6245438791E+002	0.151	1.153	1.318
70.531	2.254	251.447	-0.375	1.3099504427E+003	8.2825790418E+001	2.7555379838E+002	0.181	1.209	1.333
71.745	2.686	251.016	-0.349	1.6411838263E+003	1.1776392805E+002	2.6250381284E+002	0.215	1.324	1.375
72.780	3.069	250.663	-0.328	1.9037644498E+003	1.4504352632E+002	2.5669772093E+002	0.232	1.426	1.398
73.994	3.548	250.279	-0.316	2.2196834794E+003	1.7977807654E+002	2.6986637346E+002	0.250	1.596	1.450
74.158	3.614	250.227	-0.263	2.2642122863E+003	1.8482561097E+002	2.6733825846E+002	0.253	1.624	1.459
75.240	4.024	249.951	-0.234	2.5261321683E+003	2.1588829770E+002	2.3357811310E+002	0.267	1.830	1.528
76.454	4.533	249.691	-0.214	2.7980679191E+003	2.4965511406E+002	2.2228286037E+002	0.279	2.132	1.618
76.522	4.562	249.677	-0.187	2.8131014616E+003	2.5156826770E+002	2.2210181224E+002	0.280	2.152	1.624
77.700	4.970	249.457	-0.179	3.0730843684E+003	2.8597248190E+002	2.1588649697E+002	0.294	2.553	1.727
78.422	5.235	249.337	-0.147	3.2269429527E+003	3.0707823186E+002	2.0683543004E+002	0.302	2.858	1.795
79.636	5.564	249.172	-0.125	3.4654921608E+003	3.4150407216E+002	1.8317097169E+002	0.318	3.419	1.910
80.350	5.779	249.096	-0.107	3.5906171852E+003	3.6041165506E+002	1.7143615837E+002	0.325	3.761	1.975
80.353	5.780	249.095	-0.090	3.5911182019E+003	3.6048807588E+002	1.7141449129E+002	0.325		

3.763 1.975
81.567 6.047 248.986 -0.086 3.7963238089E+003 3.9302003736E+002 1.6563469280E+002 0.339
4.280 2.084
82.012 6.152 248.953 -0.067 3.8695021287E+003 4.0514619236E+002 1.6266495911E+002 0.344
4.419 2.123
83.000 6.295 248.890 -0.052 4.0264368009E+003 4.3198199772E+002 1.5269300186E+002 0.357
4.642 2.209
83.859 6.441 248.856 -0.030 4.1529766933E+003 4.5536637588E+002 1.4568349341E+002 0.369
4.586 2.269
85.073 6.567 248.827 -0.018 4.3269778771E+003 4.8916247972E+002 1.3763949343E+002 0.387
4.361 2.347
85.861 6.661 248.821 -0.003 4.4326179614E+003 5.1062642499E+002 1.2650377218E+002 0.398
4.140 2.387
86.420 6.702 248.823 0.011 4.5003338619E+003 5.2500605409E+002 1.1954166505E+002 0.406
3.965 2.409
87.595 6.800 248.839 0.018 4.6366008152E+003 5.5472106309E+002 1.1315771036E+002 0.421
3.613 2.445
88.395 6.876 248.859 0.029 4.7256059446E+003 5.7474567049E+002 1.1001447400E+002 0.431
3.392 2.463
89.609 6.994 248.898 0.037 4.8568977096E+003 6.0478101965E+002 1.0463050149E+002 0.445
3.111 2.485
90.717 7.113 248.946 0.045 4.9692953251E+003 6.3107771022E+002 9.6974504394E+001 0.458
2.915 2.498
91.931 7.242 249.002 0.046 5.0811132162E+003 6.5734920914E+002 8.6553123095E+001 0.469
2.768 2.509
92.190 7.270 249.013 0.049 5.1031983486E+003 6.6253289296E+002 8.6317815014E+001 0.471
2.743 2.511
92.901 7.348 249.049 0.051 5.1664057173E+003 6.7735846526E+002 8.7429015770E+001 0.476
2.678 2.519
94.115 7.476 249.111 0.052 5.2694369317E+003 7.0144792812E+002 8.4850639626E+001 0.485
2.584 2.531
95.022 7.575 249.161 0.053 5.3463981115E+003 7.1943268629E+002 8.1798455478E+001 0.492
2.522 2.542
96.236 7.698 249.224 0.055 5.4407661326E+003 7.4147031730E+002 7.9528893779E+001 0.499
2.452 2.555
97.095 7.790 249.274 0.058 5.5102000338E+003 7.5784740251E+002 7.9452248598E+001 0.505
2.405 2.563
98.309 7.914 249.345 0.060 5.6043435769E+003 7.8029542385E+002 7.8967941698E+001 0.512
2.345 2.572
99.025 7.991 249.390 0.064 5.6614682074E+003 7.9415491393E+002 7.7313641604E+001 0.517
2.312 2.575
99.164 8.006 249.399 0.066 5.6721689940E+003 7.9677085901E+002 7.6932811856E+001 0.517
2.305 2.575
100.378 8.133 249.479 0.069 5.7666568281E+003 8.2011613931E+002 7.9896860583E+001 0.525
2.253 2.574
101.242 8.229 249.542 0.070 5.8369722470E+003 8.3779865759E+002 7.6921086497E+001 0.531
2.216 2.567
102.456 8.352 249.625 0.071 5.9227732752E+003 8.5989830594E+002 7.1868758497E+001 0.538
2.174 2.551
103.340 8.448 249.691 0.078 5.9870222770E+003 8.7678389341E+002 7.2318406147E+001 0.543
2.145 2.532
104.554 8.579 249.788 0.084 6.0741192942E+003 9.0024869257E+002 7.4121636211E+001 0.551
2.107 2.496
105.469 8.688 249.871 0.090 6.1435910763E+003 9.1941749428E+002 7.1856747724E+001 0.557
2.079 2.458
105.860 8.731 249.905 0.093 6.1710216284E+003 9.2707232709E+002 7.0574108379E+001 0.559
2.069 2.441
107.074 8.874 250.020 0.096 6.2583924262E+003 9.5189964380E+002 7.2329498534E+001 0.567
2.037 2.382
107.566 8.935 250.069 0.097 6.2940652980E+003 9.6217153368E+002 7.0424476336E+001 0.570
2.024 2.355
108.780 9.073 250.185 0.097 6.3734199676E+003 9.8544942925E+002 6.4486455730E+001 0.576
1.999 2.288
109.644 9.175 250.272 0.099 6.4286085085E+003 1.0019848123E+003 6.2115149622E+001 0.580
1.982 2.237
110.858 9.310 250.391 0.104 6.5010410862E+003 1.0240811224E+003 6.2136136151E+001 0.586
1.961 2.165
111.713 9.417 250.486 0.111 6.5556641285E+003 1.0410889699E+003 6.2407624371E+001 0.591
1.945 2.108
112.927 9.559 250.620 0.110 6.6288941292E+003 1.0642563255E+003 5.8783434198E+001 0.597
1.924 2.030
113.060 9.575 250.634 0.116 6.6366673549E+003 1.0667372400E+003 5.9097489632E+001 0.597
1.922 2.022
113.787 9.666 250.719 0.115 6.6815261164E+003 1.0811507838E+003 6.0604345983E+001 0.601
1.910 1.974
115.001 9.807 250.858 0.113 6.7527927654E+003 1.1042806236E+003 5.6886032562E+001 0.607
1.889 1.898
115.860 9.905 250.954 0.111 6.8005878388E+003 1.1199515199E+003 5.5008039723E+001 0.611
1.874 1.847

117.074	10.036	251.088	0.112	6.8663554258E+003	1.1416382223E+003	5.4784076240E+001	0.616	1.851	1.780
117.948	10.133	251.188	0.111	6.9145850609E+003	1.1575656197E+003	5.3706627517E+001	0.620	1.833	1.732
119.161	10.255	251.319	0.108	6.9772267171E+003	1.1782549852E+003	5.1172642554E+001	0.624	1.808	1.673
120.063	10.345	251.416	0.106	7.0230930121E+003	1.1933515245E+003	4.7225844067E+001	0.628	1.788	1.632
120.260	10.362	251.435	0.102	7.0322221472E+003	1.1963471151E+003	4.6639754135E+001	0.628	1.783	1.624
121.474	10.470	251.559	0.104	7.0903749823E+003	1.2153516261E+003	4.8511336407E+001	0.633	1.755	1.576
122.225	10.541	251.640	0.096	7.1270938459E+003	1.2272881989E+003	4.5398423353E+001	0.636	1.735	1.547
123.439	10.622	251.749	0.090	7.1753601708E+003	1.2428478101E+003	3.8776571143E+001	0.640	1.707	1.510
124.314	10.681	251.828	0.088	7.2086546090E+003	1.2535648949E+003	3.6006903169E+001	0.642	1.686	1.486
125.140	10.723	251.898	0.086	7.2368015882E+003	1.2626295323E+003	3.3100512095E+001	0.644	1.667	1.465
126.354	10.786	252.003	0.086	7.2752742162E+003	1.2751053162E+003	2.8296475314E+001	0.646	1.640	1.438
126.373	10.787	252.005	0.090	7.2758189317E+003	1.2752830558E+003	2.8244121836E+001	0.646	1.640	1.437
127.587	10.841	252.115	0.095	7.3102278408E+003	1.2867454092E+003	2.7950546928E+001	0.648	1.612	1.412
128.410	10.888	252.198	0.099	7.3329947439E+003	1.2945654500E+003	2.5864302439E+001	0.649	1.592	1.394
129.624	10.937	252.317	0.097	7.3611327034E+003	1.3045581995E+003	1.9930402718E+001	0.650	1.564	1.371
130.020	10.952	252.354	0.099	7.3686139976E+003	1.3073316172E+003	1.8982610598E+001	0.651	1.556	1.364
130.473	10.973	252.400	0.101	7.3772710966E+003	1.3106309088E+003	1.8151194763E+001	0.651	1.546	1.355
131.687	11.012	252.522	0.105	7.3961800918E+003	1.3183157103E+003	1.4555270006E+001	0.651	1.521	1.335
132.519	11.048	252.614	0.116	7.4077121896E+003	1.3234453520E+003	1.2557254570E+001	0.651	1.503	1.319
133.733	11.097	252.760	0.124	7.4206581875E+003	1.3302680719E+003	8.7097718814E+000	0.651	1.475	1.297
134.599	11.141	252.873	0.131	7.4269931429E+003	1.3346616052E+003	6.0122739924E+000	0.651	1.454	1.279
135.813	11.190	253.032	0.130	7.4320740631E+003	1.3398790619E+003	1.5703655421E+000	0.651	1.426	1.256
136.010	11.197	253.056	0.143	7.4322997404E+003	1.3405398467E+003	5.1368065807E-001	0.651	1.421	1.253
136.729	11.239	253.163	0.148	7.4310074171E+003	1.3428568333E+003	-2.9831614541E+000	0.650	1.403	1.238
137.943	11.296	253.343	0.154	7.4249553278E+003	1.3457844522E+003	-7.2727955253E+000	0.649	1.372	1.214
138.964	11.358	253.507	0.146	7.4155679743E+003	1.3475108769E+003	-1.1626769196E+001	0.648	1.344	1.194
140.178	11.377	253.668	0.133	7.3979447735E+003	1.3479060882E+003	-1.7307634706E+001	0.647	1.314	1.172
141.060	11.391	253.786	0.139	7.3808793836E+003	1.3473765899E+003	-2.0355934721E+001	0.645	1.291	1.156
142.000	11.399	253.921	0.154	7.3607336226E+003	1.3461811098E+003	-2.3478354780E+001	0.643	1.269	1.140
142.370	11.415	253.987	0.178	7.3517498477E+003	1.3454857193E+003	-2.4990245533E+001	0.642	1.260	1.135
143.106	11.446	254.118	0.185	7.3323092658E+003	1.3437757878E+003	-2.7719288087E+001	0.639	1.242	1.123
144.320	11.488	254.349	0.190	7.2960245360E+003	1.3399414274E+003	-3.5304497417E+001	0.635	1.215	1.105
145.107	11.515	254.498	0.191	7.2655090248E+003	1.3360890463E+003	-3.6540150361E+001	0.631	1.196	1.092
145.250	11.519	254.527	0.201	7.2603252292E+003	1.3353948168E+003	-3.6511933566E+001	0.631	1.193	1.091
146.464	11.552	254.771	0.199	7.2120344674E+003	1.3285374249E+003	-4.2706958424E+001	0.625	1.169	1.074
147.157	11.566	254.907	0.186	7.1812608726E+003	1.3238570776E+003	-4.5147371253E+001	0.622	1.155	1.065
148.371	11.550	255.126	0.181	7.1248212527E+003	1.3147903491E+003	-4.8038542069E+001	0.616	1.132	1.050
148.500	11.549	255.149	0.200	7.1186185741E+003	1.3137499162E+003	-4.9629526614E+001	0.616	1.130	1.049
149.166	11.555	255.285	0.210	7.0806299846E+003	1.3070903968E+003	-5.9244562695E+001	0.612	1.116	1.040
150.380	11.555	255.544	0.219	7.0037866575E+003	1.2929190446E+003	-6.7820514302E+001	0.605		

1.092 1.024
151.229 11.566 255.736 0.225 6.9435497613E+003 1.2813028233E+003 -7.2563044348E+001 0.599
1.075 1.012
152.443 11.557 256.008 0.225 6.8527138662E+003 1.2629117367E+003 -8.0076725847E+001 0.591
1.052 0.997
153.205 11.553 256.181 0.224 6.7891655388E+003 1.2495877516E+003 -8.6427740141E+001 0.584
1.037 0.988
153.360 11.551 256.214 0.226 6.7756658790E+003 1.2467336868E+003 -8.7093228436E+001 0.583
1.034 0.986
154.574 11.525 256.490 0.227 6.6695216654E+003 1.2237388517E+003 -9.1823862713E+001 0.573
1.012 0.972
155.654 11.502 256.735 0.234 6.5661575335E+003 1.2008054325E+003 -9.5054053419E+001 0.562
0.993 0.961
156.868 11.467 257.026 0.240 6.4516836024E+003 1.1751664630E+003 -9.8836869004E+001 0.551
0.974 0.950
157.767 11.440 257.242 0.242 6.3597550332E+003 1.1545705774E+003 -9.5104415363E+001 0.542
0.959 0.942
157.910 11.435 257.278 0.259 6.3463415718E+003 1.1515585761E+003 -9.4274459165E+001 0.541
0.957 0.941
159.080 11.396 257.581 0.259 6.2332032458E+003 1.1262584555E+003 -1.0975010548E+002 0.531
0.942 0.934
159.813 11.371 257.772 0.265 6.1467320543E+003 1.1072237185E+003 -1.1497631136E+002 0.522
0.932 0.930
160.250 11.352 257.891 0.264 6.0972840158E+003 1.0963641927E+003 -1.1537954472E+002 0.518
0.927 0.928
161.464 11.284 258.208 0.261 5.9499245692E+003 1.0645033992E+003 -1.2176380127E+002 0.505
0.912 0.924
161.799 11.265 258.295 0.272 5.9090377744E+003 1.0557857059E+003 -1.2071889689E+002 0.502
0.908 0.923
163.013 11.183 258.630 0.276 5.7675364365E+003 1.0260203317E+003 -1.1667778023E+002 0.490
0.897 0.920
163.240 11.168 258.692 0.262 5.7410916696E+003 1.0205358257E+003 -1.1649474750E+002 0.488
0.895 0.920
163.844 11.117 258.848 0.250 5.6710341486E+003 1.0061080010E+003 -1.1542061059E+002 0.482
0.889 0.919
165.058 10.971 259.147 0.253 5.5322101633E+003 9.7784099825E+002 -1.1925690447E+002 0.472
0.880 0.918
165.822 10.891 259.348 0.264 5.4387897761E+003 9.5896818983E+002 -1.2373393767E+002 0.465
0.875 0.918
166.230 10.840 259.457 0.262 5.3879737277E+003 9.4876852663E+002 -1.2375414435E+002 0.461
0.873 0.918
167.444 10.681 259.773 0.262 5.2403624879E+003 9.1929598095E+002 -1.2367227577E+002 0.450
0.867 0.918
167.845 10.630 259.880 0.266 5.1904598056E+003 9.0933075540E+002 -1.2431695942E+002 0.446
0.865 0.918
168.115 10.590 259.951 0.260 5.1569299223E+003 9.0264150968E+002 -1.1853807905E+002 0.443
0.864 0.918
168.240 10.569 259.982 0.258 5.1424457506E+003 8.9976477322E+002 -1.1643267133E+002 0.442
0.863 0.919
169.454 10.380 260.297 0.261 4.9945090718E+003 8.7025083587E+002 -1.2449134843E+002 0.430
0.860 0.919
169.912 10.311 260.420 0.267 4.9370057201E+003 8.5865312926E+002 -1.2591029794E+002 0.426
0.858 0.919
170.000 10.297 260.443 0.280 4.9259438287E+003 8.5641472123E+002 -1.2644878914E+002 0.425
0.858 0.919
171.214 10.107 260.784 0.296 4.7647774716E+003 8.2342875793E+002 -1.4197331742E+002 0.412
0.856 0.918
172.113 9.999 261.068 0.314 4.6309971326E+003 7.9557493956E+002 -1.4775400270E+002 0.401
0.855 0.918
173.327 9.844 261.447 0.320 4.4533384375E+003 7.5794458425E+002 -1.5057213482E+002 0.386
0.854 0.915
174.266 9.742 261.757 0.329 4.3089319306E+003 7.2706962177E+002 -1.5128369866E+002 0.373
0.853 0.913
174.640 9.698 261.879 0.347 4.2526834768E+003 7.1495613935E+002 -1.5299266129E+002 0.368
0.853 0.912
175.790 9.597 262.286 0.372 4.0671049478E+003 6.7491528640E+002 -1.7478493846E+002 0.351
0.853 0.908
176.378 9.576 262.525 0.388 3.9602235712E+003 6.5202396913E+002 -1.7687726527E+002 0.340
0.853 0.906
177.592 9.497 262.985 0.378 3.7574510387E+003 6.0874154490E+002 -1.6363077966E+002 0.321
0.852 0.900
178.476 9.435 263.317 0.366 3.6149903042E+003 5.7894606506E+002 -1.5496884182E+002 0.307
0.852 0.897
179.280 9.361 263.602 0.335 3.4949685294E+003 5.5446243488E+002 -1.4274339709E+002 0.296
0.852 0.894
180.494 9.209 263.993 0.321 3.3337983554E+003 5.2248592794E+002 -1.2507500911E+002 0.281
0.853 0.890
180.554 9.200 264.012 0.306 3.3262844148E+003 5.2102845077E+002 -1.2465152858E+002 0.280
0.853 0.890

181.640	9.044	264.344	0.308	3.1917548106E+003	4.9538875901E+002	-1.2431147689E+002	0.268
0.853	0.888						
182.644	8.903	264.656	0.301	3.0665124889E+003	4.7212373267E+002	-1.2104343806E+002	0.257
0.854	0.886						
183.858	8.708	265.011	0.289	2.9249261066E+003	4.4655955318E+002	-1.0461570187E+002	0.245
0.856	0.885						
184.000	8.681	265.048	0.279	2.9103065046E+003	4.4399371883E+002	-1.0466575681E+002	0.244
0.856	0.885						
184.742	8.554	265.257	0.278	2.8270565828E+003	4.2938492471E+002	-1.0793369481E+002	0.237
0.857	0.886						
185.000	8.506	265.326	0.265	2.7995489633E+003	4.2460564768E+002	-1.0617061318E+002	0.235
0.857	0.886						
186.000	8.314	265.590	0.272	2.6943535660E+003	4.0648315910E+002	-1.0902817097E+002	0.226
0.859	0.887						
186.863	8.163	265.833	0.279	2.5973888520E+003	3.8969700956E+002	-1.0717141390E+002	0.218
0.861	0.889						
187.000	8.137	265.870	0.277	2.5828359012E+003	3.8717419499E+002	-1.0709287025E+002	0.217
0.862	0.890						
187.870	7.981	266.112	0.288	2.4855703611E+003	3.7017108099E+002	-1.1455945083E+002	0.210
0.864	0.892						
189.011	7.794	266.449	0.300	2.3507355236E+003	3.4630053006E+002	-1.1958300601E+002	0.200
0.867	0.896						
190.225	7.591	266.818	0.311	2.2037547283E+003	3.1993596943E+002	-1.2374767529E+002	0.189
0.871	0.902						
191.089	7.460	267.095	0.327	2.0951777047E+003	3.0025303231E+002	-1.2673166515E+002	0.180
0.874	0.907						
192.303	7.273	267.498	0.358	1.9394856956E+003	2.7187632043E+002	-1.3991870401E+002	0.167
0.879	0.915						
193.143	7.197	267.830	0.374	1.8152184070E+003	2.4942243146E+002	-1.4093473486E+002	0.156
0.883	0.922						
194.357	7.025	268.267	0.361	1.6565098915E+003	2.2087090438E+002	-1.2839560420E+002	0.141
0.890	0.932						
195.174	6.912	268.563	0.349	1.5528005640E+003	2.0257484578E+002	-1.2211658109E+002	0.132
0.894	0.939						
196.388	6.700	268.977	0.331	1.4130294036E+003	1.7851025730E+002	-1.0751546069E+002	0.119
0.901	0.951						
197.237	6.532	269.246	0.314	1.3262887299E+003	1.6413340382E+002	-9.9893691687E+001	0.112
0.907	0.959						
198.451	6.267	269.624	0.317	1.2090018346E+003	1.4530803290E+002	-9.6785787752E+001	0.102
0.915	0.972						
199.283	6.096	269.894	0.315	1.1284100907E+003	1.3274300244E+002	-9.3357937638E+001	0.095
0.922	0.982						
200.497	5.809	270.269	0.314	1.0213582444E+003	1.1665041689E+002	-8.8216745048E+001	0.086
0.934	0.998						
201.363	5.616	270.548	0.319	9.4488940365E+002	1.0543216991E+002	-8.0872849565E+001	0.080
0.943	1.011						
201.500	5.581	270.589	0.311	9.3399934292E+002	1.0386988237E+002	-7.9810559375E+001	0.079
0.945	1.013						
202.714	5.282	270.969	0.325	8.3604549357E+002	8.9972582707E+001	-8.2990588405E+001	0.071
0.960	1.035						
203.497	5.114	271.238	0.338	7.6990392365E+002	8.0763023132E+001	-8.1988465676E+001	0.065
0.973	1.052						
204.711	4.825	271.644	0.348	6.7505271442E+002	6.7830133031E+001	-7.8772640098E+001	0.057
0.995	1.081						
205.740	4.610	272.018	0.363	5.9345274595E+002	5.6997627982E+001	-7.6812463347E+001	0.049
1.017	1.112						
206.954	4.327	272.459	0.372	5.0378878119E+002	4.5455952916E+001	-7.7247966850E+001	0.042
1.046	1.151						
207.834	4.139	272.796	0.397	4.3365230629E+002	3.6250218480E+001	-7.9979798229E+001	0.042
1.071	1.186						
209.048	3.875	273.291	0.392	3.3609714629E+002	2.3636183750E+001	-7.2052410396E+001	0.042
1.110	1.240						
209.876	3.665	273.598	0.364	2.8109623593E+002	1.6928619766E+001	-6.2706922606E+001	0.042
1.138	1.278						
211.090	3.309	274.035	0.370	2.1150759036E+002	9.4074756134E+000	-5.5473943368E+001	0.042
1.186	1.344						
211.870	3.101	274.336	0.412	1.6916314320E+002	5.5758452025E+000	-5.2613706685E+001	0.042
1.219	1.388						
213.084	2.793	274.856	0.445	1.0845027245E+002	1.7846015631E+000	-4.5826788503E+001	0.042
1.290	1.479						
213.922	2.615	275.249	0.524	7.2477976837E+001	6.1952507613E-001	-4.1217822603E+001	0.042
1.329	1.535						
215.136	2.424	275.931	0.524	2.5467409754E+001	7.6307779826E-002	-3.1228372057E+001	0.042
1.450	1.679						

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)
62.676	1.214	1.514	-36.679	-4.664	-7.059	38.027	57.560
63.890	1.214	1.514	-36.679	-13.991	-21.178	38.590	58.412
65.104	0.482	0.601	-36.679	-20.506	-12.323	39.534	23.757
65.586	0.954	1.190	-36.679	-26.432	-31.447	103.661	123.331
66.540	1.214	1.514	-36.679	-36.198	-54.791	106.703	161.512
67.754	1.214	1.514	-36.679	-47.581	-72.021	110.892	167.853
68.968	0.692	0.863	-36.679	-56.517	-48.773	113.612	98.045
69.660	0.871	1.086	-36.679	-63.845	-69.335	116.426	126.436
70.531	1.214	1.490	-35.422	-72.180	-107.525	117.153	174.522
71.745	1.035	1.270	-35.422	-82.203	-104.416	115.707	146.974
72.780	1.214	1.490	-35.422	-92.753	-138.173	117.054	174.373
73.994	0.164	0.202	-35.422	-99.493	-20.049	118.320	23.843
74.158	1.082	1.281	-32.381	-99.918	-127.999	116.387	149.096
75.240	1.214	1.437	-32.381	-109.821	-157.864	115.875	166.567
76.454	0.068	0.080	-32.381	-115.349	-9.242	116.137	9.305
76.522	1.178	1.335	-28.067	-108.755	-145.237	115.296	153.971
77.700	0.722	0.819	-28.067	-115.032	-94.175	115.306	94.399
78.422	1.214	1.311	-22.158	-98.227	-128.751	112.500	147.459
79.636	0.714	0.771	-22.158	-102.124	-78.693	111.678	86.055
80.350	0.003	0.003	-22.158	-103.573	-0.327	111.525	0.352
80.353	1.214	1.271	-17.222	-82.206	-104.478	109.563	139.247
81.567	0.445	0.466	-17.222	-84.417	-39.343	109.721	51.136
82.012	0.988	1.009	-11.808	-55.972	-56.494	106.866	107.862
83.000	0.859	0.877	-11.808	-57.182	-50.169	106.882	93.775
83.859	1.214	1.224	-7.259	-30.044	-36.767	104.403	127.764
85.073	0.789	0.795	-7.259	-30.527	-24.272	104.304	82.931
85.861	0.559	0.560	-3.985	-9.336	-5.227	102.252	57.250
86.420	1.175	1.178	-3.985	-9.438	-11.117	102.213	120.391
87.595	0.800	0.802	-3.985	-9.554	-7.663	102.190	81.961
88.395	1.214	1.217	-3.726	-7.892	-9.601	102.025	124.115
89.609	1.108	1.111	-3.726	-8.001	-8.887	101.941	113.221
90.717	1.214	1.216	-3.431	-6.035	-7.339	101.632	123.597
91.931	0.259	0.259	-3.431	-6.085	-1.577	101.511	26.308
92.190	0.711	0.712	-3.431	-6.120	-4.358	101.573	72.326
92.901	1.214	1.216	-3.126	-3.982	-4.841	101.364	123.233
94.115	0.907	0.909	-3.126	-4.031	-3.662	101.362	92.093
95.022	1.214	1.215	-2.805	-1.695	-2.060	101.120	122.901
96.236	0.859	0.860	-2.805	-1.714	-1.475	101.175	87.050
97.095	1.214	1.215	-2.505	0.541	0.658	101.019	122.749
98.309	0.716	0.717	-2.505	0.547	0.392	101.067	72.415
99.025	0.139	0.139	-2.505	0.549	0.077	101.035	14.086
99.164	1.214	1.215	-2.206	2.873	3.490	100.933	122.619
100.378	0.864	0.865	-2.206	2.902	2.510	100.993	87.343
101.242	1.214	1.215	-1.911	5.269	6.400	100.766	122.392
102.456	0.883	0.884	-1.911	5.322	4.704	100.804	89.094
103.340	1.214	1.214	-1.622	7.702	9.354	100.690	122.282
104.554	0.915	0.916	-1.622	7.777	7.120	100.748	92.238
105.469	0.391	0.391	-1.335	10.180	3.983	100.575	39.353
105.860	1.214	1.214	-1.335	10.265	12.465	100.601	122.157
107.074	0.492	0.492	-1.335	10.361	5.101	100.613	49.537
107.566	1.214	1.214	-1.040	12.936	15.706	100.439	121.948
108.780	0.864	0.864	-1.040	13.077	11.304	100.438	86.817
109.644	1.214	1.214	-0.742	15.786	19.165	100.297	121.766
110.858	0.855	0.855	-0.742	15.950	13.641	100.325	85.800
111.713	1.214	1.214	-0.442	18.741	22.751	100.186	121.624
112.927	0.133	0.133	-0.442	18.862	2.501	100.182	13.286
113.060	0.727	0.727	-0.442	18.940	13.762	100.193	72.800
113.787	1.214	1.214	-0.141	21.810	26.477	100.059	121.467
115.001	0.860	0.860	-0.141	22.019	18.929	100.057	86.016
115.860	1.214	1.214	0.158	24.954	30.293	99.938	121.319
117.074	0.873	0.873	0.158	25.185	21.996	99.936	87.284
117.948	1.214	1.214	0.453	28.147	34.170	99.830	121.192
119.161	0.902	0.902	0.453	28.400	25.615	99.833	90.045

120.063	0.197	0.197	0.738	31.211	6.137	99.752	19.613
120.260	1.214	1.214	0.738	31.322	38.026	99.746	121.096
121.474	0.751	0.751	0.738	31.461	23.632	99.742	74.922
122.225	1.214	1.214	1.333	37.249	45.230	99.624	120.971
123.439	0.875	0.875	1.333	37.407	32.725	99.640	87.169
124.314	0.826	0.827	1.959	43.511	35.979	99.527	82.299
125.140	1.214	1.215	1.959	43.673	53.048	99.557	120.927
126.354	0.019	0.019	1.959	43.771	0.845	99.603	1.922
126.373	1.214	1.215	2.603	50.044	60.814	99.459	120.863
127.587	0.822	0.823	2.603	50.207	41.333	99.456	81.877
128.410	1.214	1.216	3.245	56.548	68.757	99.413	120.876
129.624	0.396	0.397	3.245	56.674	22.506	99.501	39.513
130.020	0.453	0.454	3.245	56.754	25.749	99.481	45.134
130.473	1.214	1.217	3.895	63.208	76.909	99.459	121.017
131.687	0.832	0.834	3.895	63.427	52.915	99.473	82.987
132.519	1.214	1.218	4.539	69.872	85.088	99.440	121.095
133.733	0.866	0.869	4.539	70.087	60.884	99.495	86.431
134.599	1.214	1.219	5.161	76.315	93.020	99.514	121.296
135.813	0.197	0.198	5.161	76.452	15.114	99.621	19.694
136.010	0.719	0.722	5.161	76.541	55.271	99.636	71.949
136.729	1.214	1.220	5.739	82.329	100.446	99.697	121.637
137.943	1.021	1.026	5.739	82.527	84.667	99.788	102.375
138.964	1.214	1.222	6.690	91.905	112.333	99.952	122.169
140.178	0.883	0.889	6.690	92.055	81.801	100.088	88.939
141.060	0.940	0.948	7.728	102.134	96.842	100.214	95.021
142.000	0.370	0.373	7.728	102.245	38.177	100.316	37.457
142.370	0.736	0.743	7.728	102.456	76.131	100.390	74.596
143.106	1.214	1.228	8.814	113.179	139.035	100.603	123.587
144.320	0.786	0.796	8.814	113.528	90.328	100.936	80.309
145.107	0.143	0.146	9.892	123.896	18.047	101.033	14.716
145.250	1.214	1.232	9.892	124.097	152.921	101.206	124.713
146.464	0.693	0.704	9.892	124.381	87.551	101.441	71.404
147.157	1.214	1.237	10.974	134.771	166.652	101.761	125.834
148.371	0.129	0.131	10.974	134.925	17.686	101.907	13.358
148.500	0.666	0.679	10.974	134.951	91.586	102.357	69.466
149.166	1.214	1.241	12.042	144.788	179.719	103.006	127.857
150.380	0.849	0.868	12.042	144.724	125.583	103.524	89.832
151.229	1.214	1.246	13.046	153.690	191.514	104.204	129.849
152.443	0.762	0.782	13.046	153.528	120.122	104.851	82.036
153.205	0.155	0.159	13.046	153.453	24.428	105.107	16.732
153.360	1.214	1.251	13.942	161.233	201.669	105.589	132.070
154.574	1.080	1.113	13.942	160.928	179.044	106.267	118.229
155.654	1.214	1.257	15.061	170.240	214.014	106.688	134.120
156.868	0.900	0.932	15.061	169.810	158.178	107.250	99.904
157.767	0.143	0.149	16.306	180.031	26.772	107.176	15.938
157.910	1.170	1.219	16.306	179.696	219.055	107.353	130.867
159.080	0.733	0.764	16.306	179.219	136.919	108.827	83.142
159.813	0.437	0.458	17.614	189.457	86.816	109.049	49.970
160.250	1.214	1.274	17.614	188.755	240.409	109.552	139.531
161.464	0.336	0.352	17.614	188.055	66.196	109.457	38.529
161.799	1.214	1.283	18.904	197.201	253.039	109.484	140.484
163.013	0.227	0.240	18.904	196.387	47.040	109.361	26.195
163.240	0.604	0.639	18.904	195.918	125.124	109.236	69.764
163.844	1.214	1.293	20.155	203.959	263.745	109.504	141.603
165.058	0.764	0.813	20.155	202.609	164.809	110.088	89.549
165.822	0.408	0.438	21.397	210.428	92.262	110.710	48.540
166.230	1.214	1.304	21.397	209.508	273.159	110.407	143.949
167.444	0.401	0.431	21.397	208.723	89.957	110.645	47.686
167.845	0.270	0.292	22.552	216.010	63.099	111.082	32.448
168.115	0.125	0.135	22.552	215.774	29.205	110.286	14.927
168.240	1.214	1.314	22.552	214.987	282.592	110.866	145.729
169.454	0.458	0.496	22.552	214.007	106.190	111.312	55.233
169.912	0.088	0.096	23.589	220.187	21.095	111.798	10.711
170.000	1.214	1.325	23.589	218.824	289.862	112.575	149.120
171.214	0.899	0.981	23.589	216.558	212.459	114.337	112.172
172.113	1.214	1.326	23.715	215.032	285.113	114.404	151.689
173.327	0.939	1.025	23.715	212.692	218.066	115.283	118.196
174.266	0.374	0.409	23.845	212.020	86.772	115.099	47.106
174.640	1.150	1.257	23.845	210.340	264.465	116.246	146.159
175.790	0.588	0.643	23.845	208.437	134.090	118.153	76.009
176.378	1.214	1.329	23.977	207.220	275.311	116.705	155.054
177.592	0.884	0.968	23.977	204.923	198.265	115.792	112.029
178.476	0.804	0.880	24.110	203.800	179.435	114.334	100.665
179.280	1.214	1.330	24.110	202.023	268.685	112.394	149.480
180.494	0.060	0.066	24.110	201.094	13.276	111.380	7.353
180.554	1.086	1.191	24.242	200.954	239.296	111.156	132.365
181.640	1.004	1.102	24.242	199.400	219.649	110.943	122.209
182.644	1.214	1.333	24.372	198.422	264.440	109.989	146.584
183.858	0.142	0.156	24.372	197.396	30.695	108.592	16.886

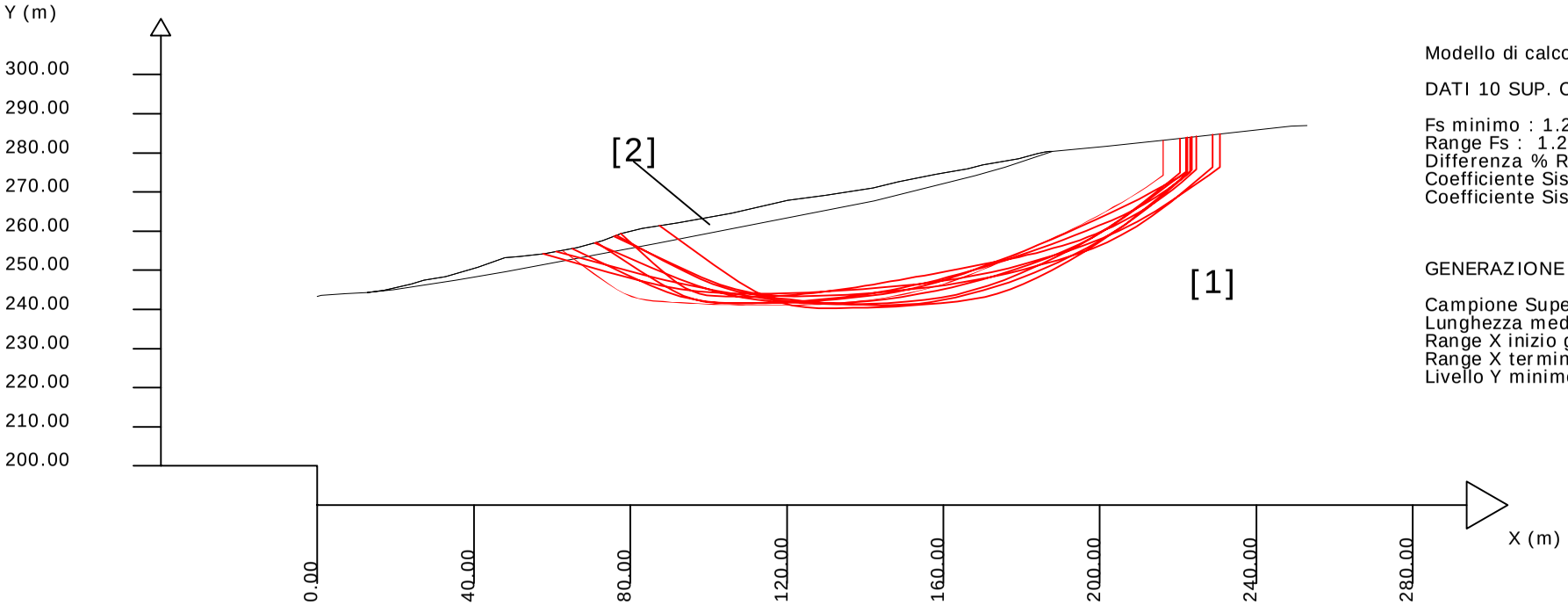
184.000	0.742	0.814	24.372	196.665	160.100	109.345	89.015
184.742	0.258	0.284	24.501	196.487	55.813	108.805	30.906
185.000	1.000	1.099	24.501	195.410	214.748	108.630	119.380
186.000	0.863	0.949	24.501	193.471	183.523	109.261	103.643
186.863	0.137	0.151	24.628	192.847	29.029	108.813	16.380
187.000	0.870	0.957	24.628	191.100	182.894	109.342	104.647
187.870	1.141	1.255	24.628	187.727	235.617	110.001	138.063
189.011	1.214	1.342	25.265	186.938	250.935	110.578	148.434
190.225	0.864	0.956	25.265	183.483	175.323	111.094	106.154
191.089	1.214	1.350	25.926	182.860	246.824	111.599	150.635
192.303	0.840	0.934	25.926	179.263	167.374	113.268	105.756
193.143	1.214	1.358	26.600	178.337	242.118	111.882	151.896
194.357	0.818	0.915	26.600	174.589	159.677	111.303	101.796
195.174	1.214	1.366	27.262	173.267	236.621	110.186	150.474
196.388	0.849	0.955	27.262	169.271	161.641	108.702	103.803
197.237	1.214	1.374	27.929	167.511	230.156	108.098	148.524
198.451	0.832	0.941	27.929	163.353	153.767	107.889	101.558
199.283	1.214	1.382	28.582	161.190	222.831	107.028	147.957
200.497	0.867	0.987	28.582	156.763	154.705	106.863	105.460
201.363	0.137	0.157	29.205	156.449	24.486	106.146	16.613
201.500	1.214	1.391	29.205	153.585	213.595	106.153	147.630
202.714	0.783	0.897	29.205	149.372	133.988	106.322	95.371
203.497	1.214	1.399	29.778	146.586	205.018	105.795	147.967
204.711	1.029	1.185	29.778	141.665	167.922	105.727	125.323
205.740	1.214	1.414	30.835	139.051	196.589	105.280	148.845
206.954	0.880	1.025	30.835	134.123	137.455	105.810	108.439
207.834	1.214	1.431	31.975	131.295	187.892	105.890	151.536
209.048	0.829	0.977	31.975	126.129	123.198	104.589	102.158
209.876	1.214	1.450	33.147	122.740	177.959	103.579	150.178
211.090	0.780	0.932	33.147	117.329	109.309	102.838	95.808
211.870	1.214	1.469	34.285	113.294	166.455	101.834	149.618
213.084	0.838	1.014	34.285	107.350	108.848	100.817	102.223
213.922	1.214	1.495	35.727	102.712	153.590	100.268	149.936
215.136	1.022	1.259	35.727	95.703	120.497	100.045	125.964

LEGENDA SIMBOLI

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

SSAP 5.0 (2020) - Slope Stability Analysis Program
Software by Dr.Geol. L.Borselli - www.lorenzo-borselli.eu
SSAP/DXF generator rel. 2.0 (2020)

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



Modello di calcolo : Morgenstern - Price (1965)

DATI 10 SUP. CON MINOR Fs

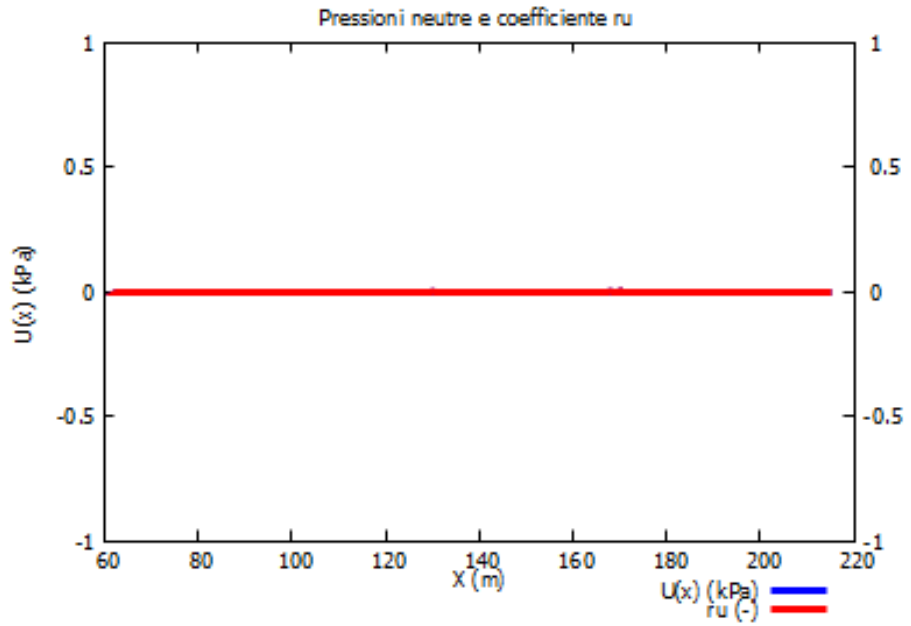
Fs minimo : 1.2619
Range Fs : 1.2619 1.3539
Differenza % Range Fs : 6.80
Coefficiente Sismico orizzontale - Kh: 0.0450
Coefficiente Sismico verticale - Kv: 0.0225

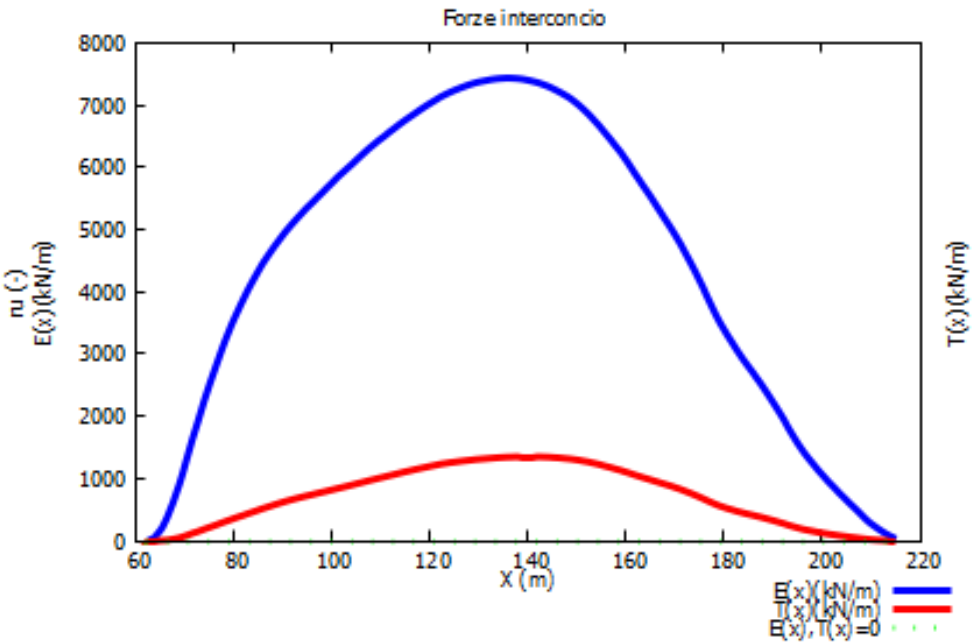
GENERAZIONE SUPERFICI RANDOM

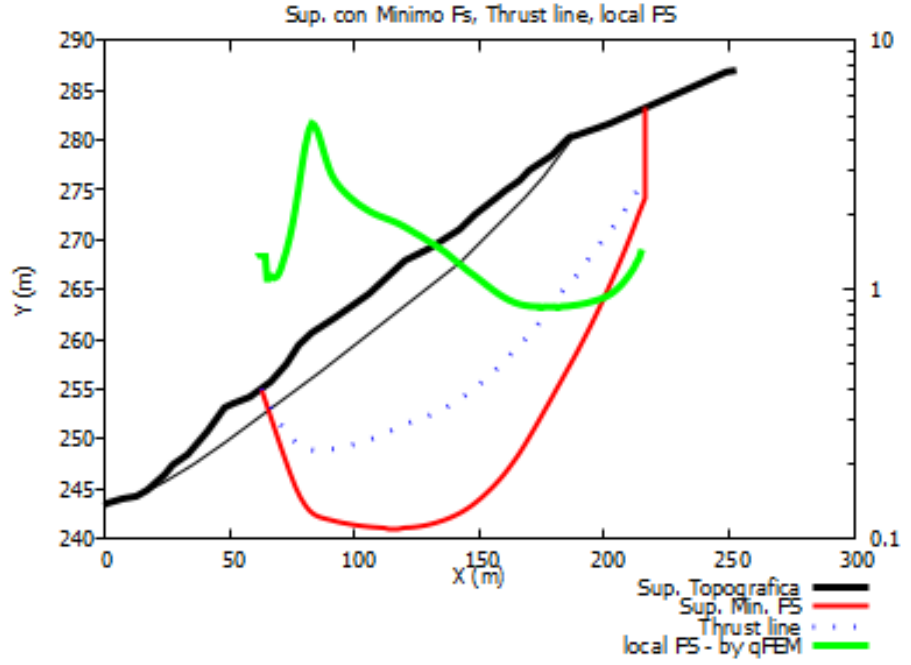
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 10.1
Range X inizio generazione : 5.1 - 232.7
Range X termine generazione : 30.4 - 247.9
Livello Y minimo considerato : 240.0

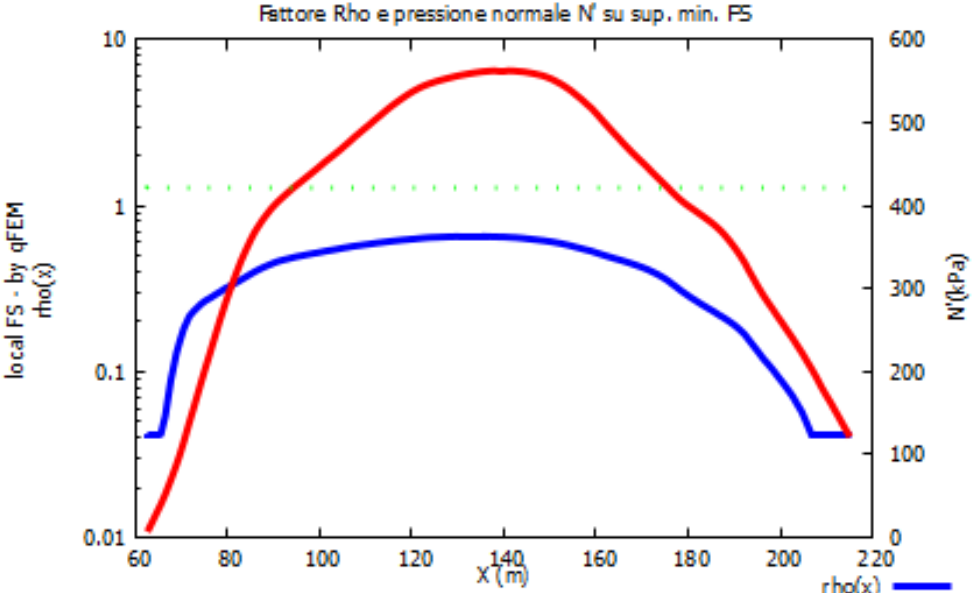
Parametri Geotecnici degli strati # ----------

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
2	0	0	38.00	18.00	20.00	0	0	0	0





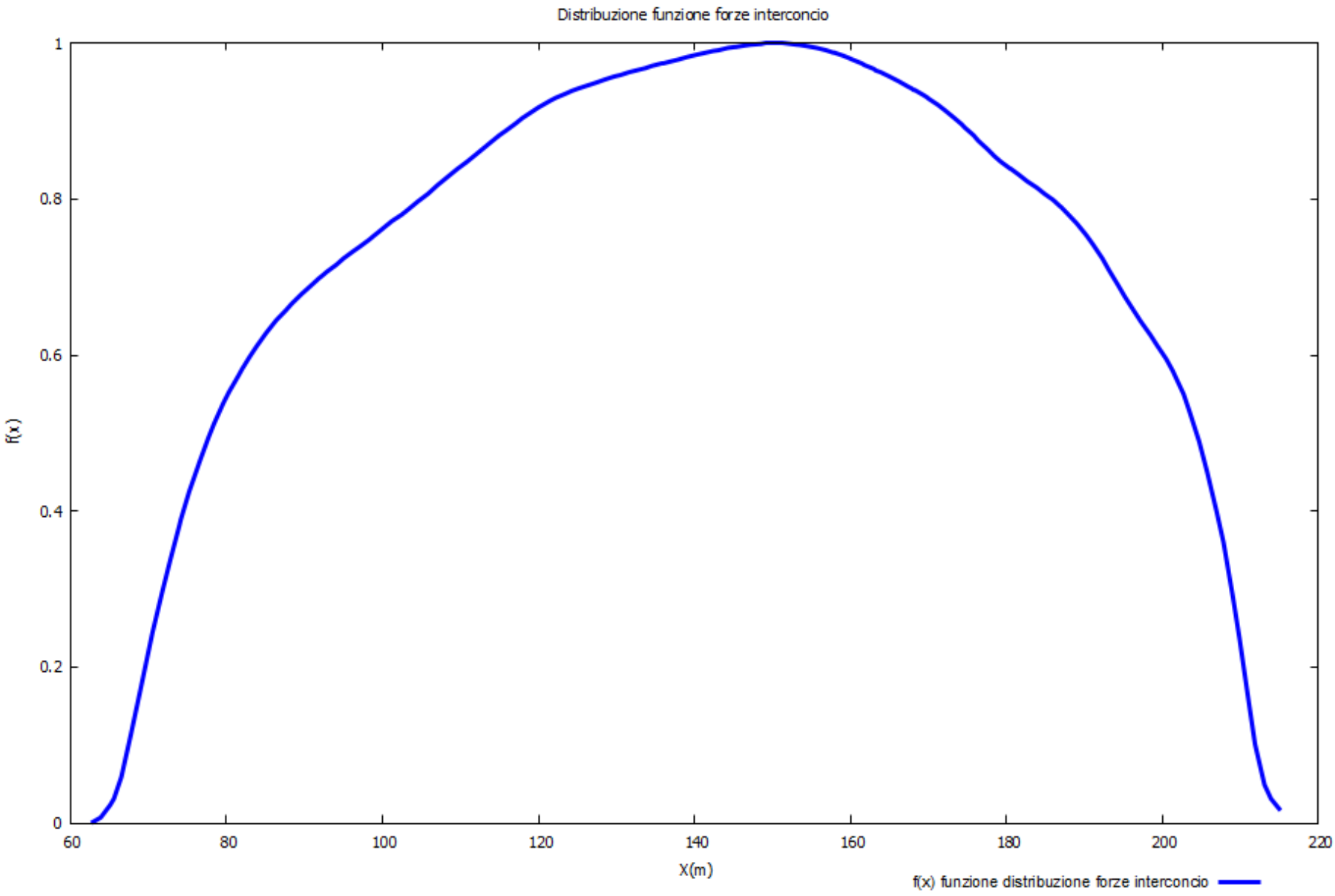


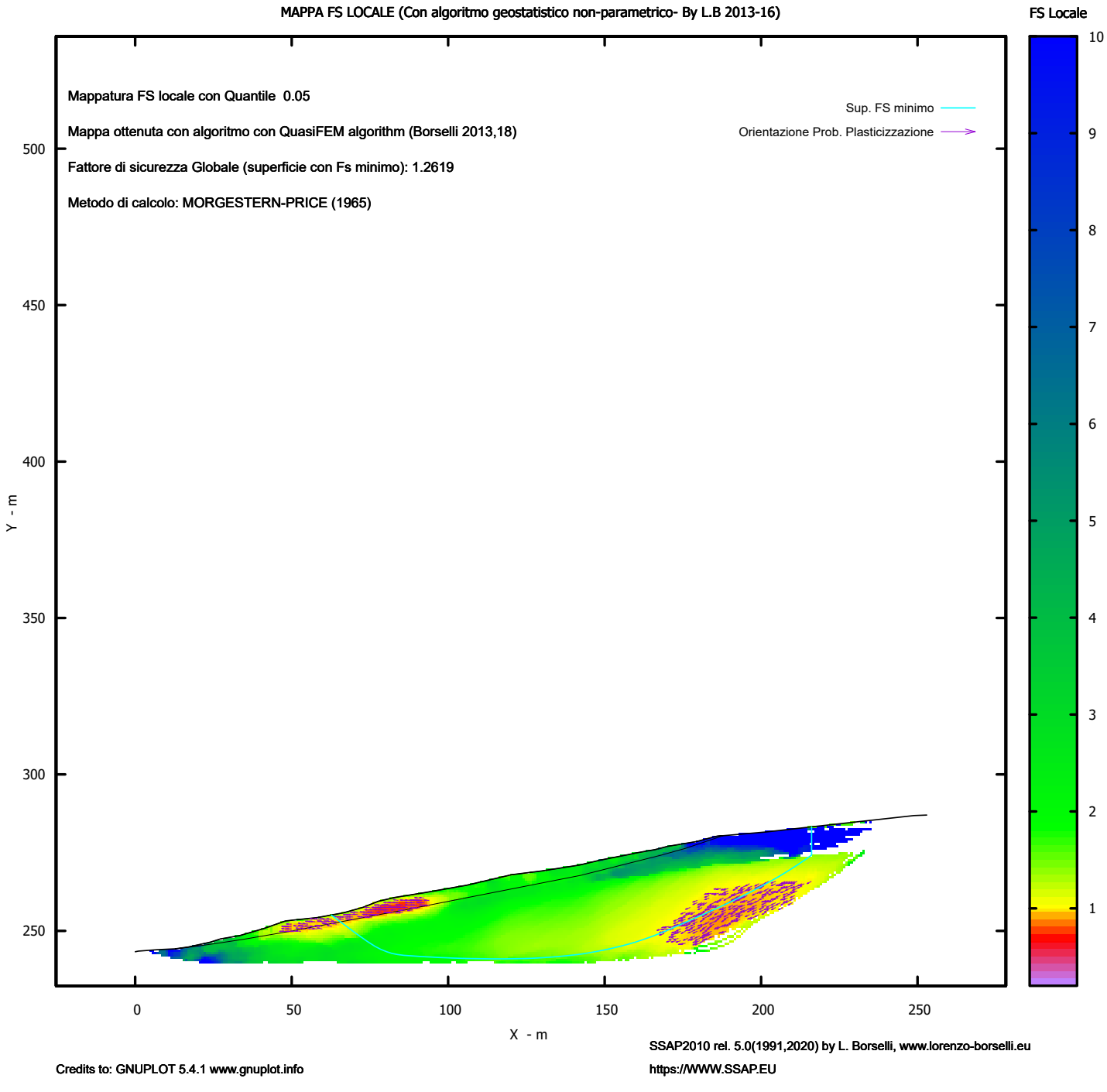


Metodo di calcolo: MORGESTERN-PRICE (1965)

SSAP2010 (versione 5.0 - 2020) - DISTRIBUZIONE FORZE e PRESSIONI

11/11/21 09:20


Distribuzione funzione forze interconcio
1
0.8
0.6
0.4
0.2
0
f(x)
60
80
100
120
140
160
180
200
220
X(m)
f(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): 1.2619
Metodo di calcolo: MORGESTERN-PRICE (1965)
Sup. FS minimo
Orientazione Prob. Plasticizzazione
Y - m
X - m
500
450
400
350
300
250
0
50
100
150
200
250
10
9
8
7
6
5
4
3
2
1
Credits to: GNUPLOT 5.4.1 www.gnuplot.info
SSAP2010 rel. 5.0(1991,2020) by L. Borselli, www.lorenzo-borselli.eu
https://WWW.SSAP.EU

Report elaborazioni

SSAP 5.0 - Slope Stability Analysis Program (1991,2020)
WWW.SSAP.EU
Build No. 11719
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: 12 settembre 2020

File report: C:\SSAP\CRACO\SERRACARUSOMOR\VERIFICA 2\NON DRENATA\BERSELLI\BERSELLI.txt
Data: 11/11/2021
Localita' :
Descrizione:
Modello pendio: VERIFICANONDRENATA2.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	243.32	12.75	244.24	-	-	-	-
1.00	243.53	19.45	245.08	-	-	-	-
7.12	243.99	25.18	245.86	-	-	-	-
12.75	244.24	35.52	247.43	-	-	-	-
17.00	244.85	48.12	249.63	-	-	-	-
24.00	246.40	86.42	256.75	-	-	-	-
27.25	247.40	142.37	267.72	-	-	-	-
32.56	248.32	168.24	274.24	-	-	-	-
33.12	248.40	175.79	276.36	-	-	-	-
41.00	250.71	187.87	280.41	-	-	-	-
48.00	253.14	187.00	280.41	-	-	-	-
51.50	253.56	186.00	280.27	-	-	-	-
58.00	254.19	184.00	279.78	-	-	-	-
66.54	255.75	179.28	278.52	-	-	-	-
72.78	257.52	170.00	276.98	-	-	-	-
77.70	259.44	166.23	275.97	-	-	-	-
83.00	260.68	160.25	274.92	-	-	-	-
92.19	262.16	157.91	274.43	-	-	-	-
105.86	264.57	148.50	272.59	-	-	-	-
120.26	267.92	142.00	271.02	-	-	-	-
130.02	269.14	130.02	269.14	-	-	-	-
142.00	271.02	120.26	267.92	-	-	-	-
148.50	272.59	105.86	264.57	-	-	-	-
157.91	274.43	92.19	262.16	-	-	-	-
160.25	274.92	83.00	260.68	-	-	-	-
166.23	275.97	77.70	259.44	-	-	-	-
170.00	276.98	72.78	257.52	-	-	-	-
179.28	278.52	66.54	255.75	-	-	-	-
184.00	279.78	58.00	254.19	-	-	-	-
186.00	280.27	51.50	253.56	-	-	-	-
187.00	280.41	48.00	253.14	-	-	-	-
187.87	280.41	41.00	250.71	-	-	-	-
201.50	281.60	33.12	248.40	-	-	-	-
216.50	283.26	32.56	248.32	-	-	-	-
248.86	286.85	27.25	247.40	-	-	-	-
252.95	287.02	24.00	246.40	-	-	-	-
-	-	17.00	244.85	-	-	-	-
-	-	12.75	244.24	-	-	-	-

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
STRATO	2	0.00	0.00	38.00	18.00	20.00	2.127	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
      METODO DI RICERCA: CONVEX RANDOM       - Chen     (1992)
      FILTRAGGIO SUPERFICI : ATTIVATO
      COORDINATE X1,X2,Y OSTACOLO :         0.00            0.00            0.00
      LUNGHEZZA MEDIA SEGMENTI (m):               10.1   (+/-) 50%
      INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax):      5.06          232.71
      LIVELLO MINIMO CONSIDERATO (Ymin):                   240.00
      INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax):       30.35          247.89

  *** TOTALE SUPERFICI GENERATE :        10000

  ------------ INFORMAZIONI PARAMETRI DI CALCOLO ------------
      METODO DI CALCOLO : BORSELLI (Borselli, 2016)
      METODO DI ESPLORAZIONE CAMPO VALORI (lambda0,Fs0) ADOTTATO : A (rapido)
      COEFFICIENTE SISMICO UTILIZZATO Kh : 0.0450
      COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0225
      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)    1.3010  - Min. -    X       Y       Lambda=  0.1464
                                              75.43  258.56
                                              83.48  251.26
                                              87.15  248.07
                                              89.51  246.24
                                              91.37  245.03
                                              93.28  244.09
                                              94.88  243.50
                                              96.69  243.05
                                              98.69  242.77
                                             101.32  242.56
                                             103.71  242.38
                                             105.94  242.22
                                             108.10  242.07
                                             110.20  241.94
                                             112.30  241.81
                                             114.39  241.68
                                             116.50  241.57
                                             118.61  241.46
                                             120.73  241.35
                                             122.84  241.24
                                             124.96  241.12
                                             127.06  241.02
                                             129.19  240.90
                                             131.33  240.79
                                             133.52  240.68
                                             135.73  240.56
                                             137.81  240.50
                                             139.85  240.48
                                             141.83  240.50
                                             143.90  240.58
                                             145.91  240.70
                                             148.00  240.87
                                             150.19  241.10
                                             152.60  241.40
                                             154.73  241.73
                                             156.76  242.11
                                             158.70  242.55
```

160.74	243.09
162.68	243.68
164.71	244.38
166.83	245.18
169.21	246.14
171.40	247.08
173.50	248.02
175.54	248.98
177.62	250.00
179.64	251.04
181.71	252.15
183.83	253.33
186.07	254.63
188.22	255.89
190.32	257.16
192.40	258.44
194.48	259.76
196.55	261.09
198.65	262.47
200.79	263.90
203.00	265.41
205.12	266.90
207.20	268.39
209.26	269.91
211.34	271.49
213.64	273.29
214.75	274.18
214.75	283.07

Fattore di sicurezza (FS) 1.3013 - N.2 -- X Y Lambda= 0.1372

71.12	257.05
86.32	249.65
93.45	246.37
98.19	244.47
102.09	243.18
105.97	242.25
109.45	241.66
113.24	241.29
117.32	241.14
122.28	241.17
126.72	241.28
130.90	241.45
134.90	241.69
138.94	242.02
142.89	242.43
146.94	242.92
151.11	243.50
155.58	244.20
159.77	244.92
163.83	245.69
167.80	246.51
171.85	247.43
175.87	248.42
180.05	249.52
184.49	250.77
189.42	252.24
193.47	253.66
197.26	255.26
200.75	257.04
204.64	259.34
208.61	262.12
213.38	265.87
220.54	271.99
224.13	275.18
224.13	284.11

Fattore di sicurezza (FS) 1.3345 - N.3 -- X Y Lambda= 0.1417

52.46	253.65
67.22	248.53
74.41	246.17
79.33	244.72
83.56	243.65
87.57	242.84
91.35	242.23
95.31	241.74
99.46	241.38
104.17	241.11

108.48	240.92
112.62	240.82
116.63	240.79
120.70	240.84
124.70	240.96
128.83	241.16
133.12	241.45
137.79	241.82
141.95	242.28
145.93	242.84
149.75	243.52
153.76	244.37
157.63	245.34
161.72	246.51
166.10	247.91
171.16	249.65
175.34	251.31
179.25	253.10
182.86	255.04
186.81	257.45
190.87	260.33
195.72	264.13
202.92	270.22
206.53	273.39
206.53	282.16

Fattore di sicurezza (FS) 1.3425 - N.4 -- X Y Lambda= 0.1331

76.77	259.08
91.64	251.30
98.61	247.84
103.25	245.82
107.07	244.43
110.86	243.40
114.25	242.71
117.94	242.24
121.88	241.98
126.67	241.87
131.03	241.83
135.15	241.83
139.14	241.89
143.12	242.00
147.10	242.17
151.21	242.39
155.55	242.67
160.30	243.03
164.25	243.52
167.96	244.18
171.39	245.04
175.19	246.24
178.66	247.57
182.41	249.27
186.42	251.32
191.17	253.96
195.48	256.44
199.57	258.88
203.51	261.33
207.47	263.89
211.82	266.83
216.74	270.28
223.76	275.37
223.76	284.07

Fattore di sicurezza (FS) 1.3432 - N.5 -- X Y Lambda= 0.1468

53.34	253.74
61.83	248.79
65.82	246.59
68.46	245.28
70.64	244.38
72.80	243.68
74.73	243.21
76.82	242.85
79.06	242.61
81.78	242.45
84.28	242.32
86.65	242.22
88.94	242.15
91.21	242.10

93.46	242.08
95.72	242.07
98.00	242.09
100.34	242.13
102.68	242.17
104.99	242.21
107.30	242.25
109.59	242.29
111.90	242.33
114.19	242.37
116.49	242.41
118.77	242.45
121.07	242.49
123.37	242.53
125.67	242.57
127.96	242.61
130.27	242.65
132.58	242.69
134.90	242.73
137.21	242.77
139.50	242.83
141.78	242.89
144.05	242.98
146.33	243.07
148.62	243.18
150.97	243.31
153.39	243.46
155.94	243.62
158.20	243.85
160.38	244.15
162.44	244.52
164.66	245.02
166.76	245.59
169.00	246.29
171.39	247.13
174.18	248.20
176.54	249.21
178.75	250.27
180.81	251.39
183.01	252.74
185.07	254.12
187.24	255.71
189.51	257.50
192.08	259.65
194.51	261.70
196.85	263.71
199.15	265.71
201.43	267.72
203.98	270.00
206.83	272.58
208.03	273.69
208.03	282.32

Fattore di sicurezza (FS) 1.3489 - N.6 -- X Y Lambda= 0.1501

46.92	252.76
63.77	248.59
72.03	246.67
77.71	245.53
82.61	244.73
87.23	244.17
91.59	243.79
96.13	243.56
100.81	243.46
105.99	243.50
110.96	243.55
115.80	243.63
120.56	243.73
125.28	243.84
130.05	243.99
134.88	244.15
139.84	244.34
145.02	244.57
149.70	244.90
154.24	245.36
158.62	245.95
163.23	246.73
167.68	247.64
172.37	248.76

177.38	250.11
183.12	251.81
187.94	253.44
192.44	255.24
196.63	257.18
201.18	259.59
205.88	262.47
211.46	266.28
219.72	272.37
223.85	275.52
223.85	284.08

Fattore di sicurezza (FS) 1.3636 - N.7 -- X Y Lambda= 0.1749

42.57	251.25
51.15	246.29
55.13	244.10
57.76	242.83
59.89	241.98
62.03	241.35
63.91	240.95
65.98	240.69
68.19	240.57
70.93	240.55
73.46	240.54
75.85	240.55
78.19	240.56
80.47	240.59
82.76	240.63
85.06	240.68
87.40	240.74
89.80	240.81
92.09	240.90
94.35	241.03
96.58	241.19
98.84	241.38
101.07	241.59
103.34	241.85
105.64	242.13
108.06	242.46
110.39	242.80
112.68	243.15
114.95	243.52
117.23	243.91
119.49	244.31
121.77	244.74
124.08	245.19
126.44	245.67
128.76	246.15
131.05	246.64
133.33	247.15
135.61	247.66
137.88	248.19
140.16	248.73
142.45	249.29
144.77	249.87
147.09	250.45
149.39	251.02
151.70	251.60
154.00	252.17
156.30	252.75
158.60	253.32
160.91	253.90
163.20	254.47
165.50	255.05
167.79	255.63
170.09	256.21
172.38	256.79
174.69	257.39
177.02	257.99
179.38	258.60
181.78	259.23
184.06	259.87
186.29	260.54
188.48	261.25
190.74	262.02
192.96	262.84
195.26	263.73
197.66	264.71

200.29	265.84
202.59	266.91
204.79	268.05
206.87	269.24
209.09	270.64
211.44	272.27
214.10	274.29
214.10	282.99

Fattore di sicurezza (FS) 1.3751 - N.8 -- X Y Lambda= 0.1394

81.38	260.30
95.91	251.68
102.60	247.92
106.96	245.77
110.47	244.38
114.04	243.37
117.14	242.78
120.60	242.45
124.38	242.36
129.17	242.50
133.43	242.69
137.39	242.93
141.19	243.23
144.99	243.60
148.74	244.03
152.62	244.54
156.69	245.15
161.15	245.88
165.00	246.66
168.64	247.56
172.08	248.60
175.78	249.90
179.23	251.30
182.88	252.97
186.72	254.90
191.10	257.28
195.18	259.54
199.08	261.78
202.89	264.02
206.71	266.33
210.92	268.98
215.67	272.05
219.88	274.83
219.88	283.63

Fattore di sicurezza (FS) 1.3781 - N.9 -- X Y Lambda= 0.1324

81.72	260.38
95.13	251.93
101.39	248.18
105.52	245.97
108.90	244.45
112.28	243.28
115.28	242.49
118.59	241.89
122.20	241.48
126.72	241.20
130.62	241.04
134.23	241.00
137.65	241.06
141.16	241.24
144.56	241.52
148.12	241.92
151.90	242.45
156.20	243.15
159.85	243.89
163.29	244.74
166.51	245.71
169.97	246.94
173.20	248.26
176.64	249.85
180.29	251.71
184.51	254.02
188.29	256.19
191.88	258.37
195.32	260.58
198.86	262.98
202.68	265.75

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                                          207.05  269.08
                                          213.33  274.08
                                          213.33  282.91


 Fattore di sicurezza (FS)    1.3817  - N.10 --    X       Y       Lambda=  0.1571
                                           49.49  253.32
                                           65.28  247.77
                                           72.82  245.29
                                           77.92  243.84
                                           82.21  242.85
                                           86.38  242.17
                                           90.22  241.74
                                           94.33  241.50
                                           98.71  241.45
                                          103.85  241.58
                                          108.44  241.78
                                          112.79  242.07
                                          116.95  242.45
                                          121.21  242.94
                                          125.34  243.52
                                          129.59  244.22
                                          134.00  245.05
                                          138.78  246.04
                                          143.23  247.04
                                          147.54  248.08
                                          151.74  249.18
                                          156.02  250.39
                                          160.23  251.65
                                          164.56  253.04
                                          169.06  254.57
                                          173.94  256.30
                                          178.31  257.99
                                          182.52  259.76
                                          186.55  261.63
                                          190.79  263.75
                                          195.31  266.24
                                          200.54  269.34
                                          206.55  273.12
                                          206.55  282.16


------------ 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     1.301       16376.6       12588.0      2529.8        Surplus
       2     1.301       17184.8       13206.0      2658.3        Surplus
       3     1.334       17028.8       12760.6      2992.1        Surplus
       4     1.343       16729.1       12460.8      3022.2        Surplus
       5     1.343       17494.6       13024.9      3167.2        Surplus
       6     1.349       18834.3       13962.3      3475.7        Surplus
       7     1.364       18299.8       13420.6      3537.1        Surplus
       8     1.375       15776.2       11473.1      3155.7        Surplus
       9     1.378       15425.0       11193.1      3112.6        Surplus
      10     1.382       16790.6       12151.9      3423.5        Surplus

    Esito analisi:  SURPLUS di RESISTENZA!

    Valore minimo di SURPLUS di RESISTENZA (kN/m):       2529.8

    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)
      75.435       1.108      -42.21       14.64        0.00        0.00       0.00       38.00
      76.542       1.108      -42.21       43.93        0.00        0.00       0.00       38.00
      77.650       0.050      -42.21        2.68        0.00        0.00       0.00       38.00
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77.700	1.108	-42.21	72.78	0.00	0.00	0.00	38.00
78.808	0.148	-42.21	11.69	0.00	0.00	0.00	38.00
78.956	1.108	-42.21	103.36	0.00	0.00	0.00	100.00
80.063	0.287	-42.21	31.41	0.00	0.00	0.00	100.00
80.350	1.108	-42.21	139.24	0.00	0.00	0.00	100.00
81.458	1.108	-42.21	167.74	0.00	0.00	0.00	100.00
82.565	0.435	-42.21	73.67	0.00	0.00	0.00	100.00
83.000	0.479	-42.21	86.00	0.00	0.00	0.00	100.00
83.479	1.108	-40.97	217.74	0.00	0.00	0.00	100.00
84.586	1.108	-40.97	243.62	0.00	0.00	0.00	100.00
85.694	0.726	-40.97	173.81	0.00	0.00	0.00	100.00
86.420	0.735	-40.97	187.18	0.00	0.00	0.00	100.00
87.155	0.440	-37.82	117.41	0.00	0.00	0.00	100.00
87.595	1.108	-37.82	311.90	0.00	0.00	0.00	100.00
88.703	0.808	-37.82	242.36	0.00	0.00	0.00	100.00
89.510	1.108	-33.05	351.13	0.00	0.00	0.00	100.00
90.618	0.751	-33.05	249.57	0.00	0.00	0.00	100.00
91.368	0.822	-26.22	282.89	0.00	0.00	0.00	100.00
92.190	1.094	-26.22	390.82	0.00	0.00	0.00	100.00
93.284	1.108	-20.35	410.95	0.00	0.00	0.00	100.00
94.391	0.488	-20.35	185.34	0.00	0.00	0.00	100.00
94.879	1.108	-13.69	429.19	0.00	0.00	0.00	100.00
95.987	0.708	-13.69	280.02	0.00	0.00	0.00	100.00
96.695	1.108	-8.20	445.29	0.00	0.00	0.00	100.00
97.802	0.891	-8.20	363.92	0.00	0.00	0.00	100.00
98.693	0.332	-4.46	136.98	0.00	0.00	0.00	100.00
99.025	1.108	-4.46	460.98	0.00	0.00	0.00	100.00
100.133	1.108	-4.46	467.41	0.00	0.00	0.00	100.00
101.240	0.079	-4.46	33.79	0.00	0.00	0.00	100.00
101.320	1.108	-4.30	474.27	0.00	0.00	0.00	100.00
102.427	1.108	-4.30	480.63	0.00	0.00	0.00	100.00
103.535	0.175	-4.30	76.71	0.00	0.00	0.00	100.00
103.710	1.108	-4.12	487.95	0.00	0.00	0.00	100.00
104.818	1.042	-4.12	465.00	0.00	0.00	0.00	100.00
105.860	0.079	-4.12	35.67	0.00	0.00	0.00	100.00
105.939	1.108	-3.93	501.27	0.00	0.00	0.00	100.00
107.047	1.055	-3.93	484.46	0.00	0.00	0.00	100.00
108.102	1.108	-3.72	515.80	0.00	0.00	0.00	100.00
109.210	0.990	-3.72	467.12	0.00	0.00	0.00	100.00
110.199	1.108	-3.54	529.73	0.00	0.00	0.00	100.00
111.307	0.989	-3.54	479.25	0.00	0.00	0.00	100.00
112.296	0.764	-3.35	374.25	0.00	0.00	0.00	100.00
113.060	1.108	-3.35	548.48	0.00	0.00	0.00	100.00
114.168	0.225	-3.35	112.39	0.00	0.00	0.00	100.00
114.393	1.108	-3.17	557.12	0.00	0.00	0.00	100.00
115.500	0.997	-3.17	507.68	0.00	0.00	0.00	100.00
116.497	1.108	-2.99	570.63	0.00	0.00	0.00	100.00
117.605	1.003	-2.99	522.74	0.00	0.00	0.00	100.00
118.608	1.108	-2.99	584.07	0.00	0.00	0.00	100.00
119.715	0.545	-2.99	289.90	0.00	0.00	0.00	100.00
120.260	0.468	-2.99	250.07	0.00	0.00	0.00	100.00
120.728	1.108	-2.99	595.33	0.00	0.00	0.00	100.00
121.835	1.005	-2.99	544.12	0.00	0.00	0.00	100.00
122.840	1.108	-2.98	604.15	0.00	0.00	0.00	100.00
123.948	1.010	-2.98	554.86	0.00	0.00	0.00	100.00
124.957	0.183	-2.98	100.70	0.00	0.00	0.00	100.00
125.140	1.108	-2.98	613.74	0.00	0.00	0.00	100.00
126.248	0.812	-2.98	452.96	0.00	0.00	0.00	100.00
127.060	1.108	-2.98	621.75	0.00	0.00	0.00	100.00
128.167	1.025	-2.98	579.51	0.00	0.00	0.00	100.00
129.192	0.828	-2.98	470.98	0.00	0.00	0.00	100.00
130.020	1.108	-2.98	634.46	0.00	0.00	0.00	100.00
131.128	0.207	-2.98	119.24	0.00	0.00	0.00	100.00
131.335	1.108	-2.98	640.80	0.00	0.00	0.00	100.00
132.442	1.074	-2.98	626.30	0.00	0.00	0.00	100.00
133.516	1.108	-2.98	651.32	0.00	0.00	0.00	100.00
134.623	1.108	-2.98	656.66	0.00	0.00	0.00	100.00
135.731	0.002	-2.98	0.98	0.00	0.00	0.00	100.00
135.733	0.277	-1.84	165.33	0.00	0.00	0.00	100.00
136.010	1.108	-1.84	662.97	0.00	0.00	0.00	100.00
137.118	0.692	-1.84	416.74	0.00	0.00	0.00	100.00
137.810	1.108	-0.58	670.56	0.00	0.00	0.00	100.00
138.917	0.929	-0.58	565.51	0.00	0.00	0.00	100.00
139.846	1.108	0.75	678.16	0.00	0.00	0.00	100.00
140.953	0.881	0.75	542.30	0.00	0.00	0.00	100.00
141.835	0.165	2.06	102.03	0.00	0.00	0.00	100.00
142.000	0.370	2.06	228.60	0.00	0.00	0.00	100.00
142.370	1.108	2.06	687.70	0.00	0.00	0.00	100.00
143.478	0.421	2.06	262.58	0.00	0.00	0.00	100.00

143.898	1.108	3.42	694.56	0.00	0.00	0.00	100.00
145.006	0.244	3.42	153.79	0.00	0.00	0.00	100.00
145.250	0.662	3.42	417.90	0.00	0.00	0.00	100.00
145.912	1.108	4.76	702.60	0.00	0.00	0.00	100.00
147.019	0.981	4.76	625.62	0.00	0.00	0.00	100.00
148.000	0.500	6.00	319.80	0.00	0.00	0.00	100.00
148.500	1.108	6.00	710.91	0.00	0.00	0.00	100.00
149.608	0.579	6.00	372.58	0.00	0.00	0.00	100.00
150.186	1.108	7.07	714.34	0.00	0.00	0.00	100.00
151.294	1.108	7.07	716.28	0.00	0.00	0.00	100.00
152.402	0.197	7.07	127.70	0.00	0.00	0.00	100.00
152.599	0.606	8.72	393.02	0.00	0.00	0.00	100.00
153.205	1.108	8.72	718.85	0.00	0.00	0.00	100.00
154.313	0.417	8.72	271.22	0.00	0.00	0.00	100.00
154.730	1.108	10.67	720.06	0.00	0.00	0.00	100.00
155.837	0.925	10.67	601.69	0.00	0.00	0.00	100.00
156.763	1.108	12.79	720.17	0.00	0.00	0.00	100.00
157.870	0.040	12.79	25.95	0.00	0.00	0.00	100.00
157.910	0.790	12.79	513.28	0.00	0.00	0.00	100.00
158.700	0.380	14.87	246.90	0.00	0.00	0.00	100.00
159.080	1.108	14.87	718.48	0.00	0.00	0.00	100.00
160.188	0.062	14.87	40.48	0.00	0.00	0.00	100.00
160.250	0.491	14.87	318.03	0.00	0.00	0.00	100.00
160.741	1.108	16.91	715.33	0.00	0.00	0.00	100.00
161.849	0.832	16.91	535.41	0.00	0.00	0.00	100.00
162.681	0.559	18.91	358.87	0.00	0.00	0.00	100.00
163.240	1.108	18.91	707.53	0.00	0.00	0.00	100.00
164.348	0.362	18.91	230.53	0.00	0.00	0.00	100.00
164.710	1.108	20.68	701.79	0.00	0.00	0.00	100.00
165.817	0.413	20.68	260.26	0.00	0.00	0.00	100.00
166.230	0.603	20.68	379.29	0.00	0.00	0.00	100.00
166.833	1.108	22.15	694.25	0.00	0.00	0.00	100.00
167.940	0.175	22.15	109.11	0.00	0.00	0.00	100.00
168.115	0.125	22.15	78.07	0.00	0.00	0.00	100.00
168.240	0.972	22.15	605.52	0.00	0.00	0.00	100.00
169.212	0.788	23.07	488.91	0.00	0.00	0.00	100.00
170.000	1.108	23.07	682.58	0.00	0.00	0.00	100.00
171.108	0.293	23.07	179.50	0.00	0.00	0.00	100.00
171.400	1.108	24.09	674.44	0.00	0.00	0.00	100.00
172.508	0.996	24.09	600.45	0.00	0.00	0.00	100.00
173.504	1.108	25.16	661.31	0.00	0.00	0.00	100.00
174.611	0.029	25.16	17.18	0.00	0.00	0.00	100.00
174.640	0.904	25.16	534.01	0.00	0.00	0.00	100.00
175.544	0.246	26.22	144.68	0.00	0.00	0.00	100.00
175.790	1.108	26.22	645.83	0.00	0.00	0.00	100.00
176.898	0.719	26.22	415.08	0.00	0.00	0.00	100.00
177.616	1.108	27.23	632.75	0.00	0.00	0.00	100.00
178.724	0.556	27.23	314.50	0.00	0.00	0.00	100.00
179.280	0.362	27.23	203.59	0.00	0.00	0.00	100.00
179.642	1.108	28.24	619.13	0.00	0.00	0.00	100.00
180.749	0.891	28.24	493.17	0.00	0.00	0.00	100.00
181.640	0.069	28.24	38.18	0.00	0.00	0.00	100.00
181.709	1.108	29.17	606.54	0.00	0.00	0.00	100.00
182.817	1.009	29.17	546.17	0.00	0.00	0.00	100.00
183.825	0.175	30.02	93.91	0.00	0.00	0.00	100.00
184.000	1.000	30.02	534.16	0.00	0.00	0.00	100.00
185.000	1.000	30.02	527.54	0.00	0.00	0.00	100.00
186.000	0.068	30.02	35.56	0.00	0.00	0.00	100.00
186.068	0.932	30.54	484.28	0.00	0.00	0.00	100.00
187.000	0.870	30.54	444.13	0.00	0.00	0.00	100.00
187.870	0.348	30.54	175.10	0.00	0.00	0.00	100.00
188.218	1.108	31.10	549.48	0.00	0.00	0.00	100.00
189.325	0.997	31.10	483.34	0.00	0.00	0.00	100.00
190.322	1.108	31.66	524.72	0.00	0.00	0.00	100.00
191.429	0.967	31.66	447.19	0.00	0.00	0.00	100.00
192.396	1.108	32.22	499.68	0.00	0.00	0.00	100.00
193.504	0.979	32.22	430.41	0.00	0.00	0.00	100.00
194.483	1.108	32.77	473.85	0.00	0.00	0.00	100.00
195.590	0.964	32.77	401.01	0.00	0.00	0.00	100.00
196.554	1.108	33.31	447.58	0.00	0.00	0.00	100.00
197.662	0.989	33.31	387.56	0.00	0.00	0.00	100.00
198.650	1.108	33.83	420.35	0.00	0.00	0.00	100.00
199.758	1.027	33.83	376.87	0.00	0.00	0.00	100.00
200.785	0.715	34.32	254.63	0.00	0.00	0.00	100.00
201.500	1.108	34.32	382.66	0.00	0.00	0.00	100.00
202.608	0.392	34.32	132.00	0.00	0.00	0.00	100.00
203.000	1.108	35.01	363.01	0.00	0.00	0.00	100.00
204.107	1.013	35.01	318.94	0.00	0.00	0.00	100.00
205.120	1.108	35.72	334.46	0.00	0.00	0.00	100.00

206.227	0.975	35.72	281.90	0.00	0.00	0.00	100.00
207.203	1.108	36.45	305.51	0.00	0.00	0.00	100.00
208.310	0.945	36.45	248.32	0.00	0.00	0.00	100.00
209.255	1.108	37.16	276.07	0.00	0.00	0.00	100.00
210.363	0.976	37.16	229.88	0.00	0.00	0.00	100.00
211.339	1.108	38.08	245.20	0.00	0.00	0.00	100.00
212.447	1.108	38.08	228.32	0.00	0.00	0.00	100.00
213.554	0.087	38.08	17.21	0.00	0.00	0.00	100.00
213.641	1.108	38.80	209.86	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 (--)
75.435	0.000	258.556	-0.624	0.0000000000E+000	0.0000000000E+000	0.0000000000E+000	0.043	2.150	2.511
76.542	0.361	257.913	-0.624	3.9340220461E+001	5.1508954917E-002	8.2849033235E+001	0.043	2.150	2.511
77.650	0.627	257.174	-0.651	1.8351636305E+002	1.6543420027E+000	7.6163527444E+001	0.043	0.959	0.932
77.700	0.658	257.159	-0.501	1.8720681788E+002	1.7112044165E+000	7.7283871687E+001	0.043	0.963	0.925
78.808	1.097	256.594	-0.492	3.6007644034E+002	6.1552156509E+000	1.2423351809E+002	0.050	1.183	0.779
78.956	1.180	256.542	-0.523	3.7784871272E+002	6.7026306578E+000	1.3241512507E+002	0.052	1.207	2.026
80.063	1.579	255.937	-0.540	6.2752751487E+002	1.6858585930E+001	2.3265466833E+002	0.076	1.296	1.842
80.350	1.691	255.789	-0.509	6.9478784164E+002	1.9969651136E+001	2.3811614581E+002	0.081	1.306	1.811
81.458	2.134	255.227	-0.523	9.7387434174E+002	3.4719227239E+001	2.7642829187E+002	0.102	1.327	1.724
82.565	2.542	254.631	-0.521	1.3070957080E+003	5.5485307463E+001	2.8876941251E+002	0.127	1.349	1.670
83.000	2.729	254.423	-0.477	1.4306239929E+003	6.3799929545E+001	2.9045616720E+002	0.135	1.360	1.658
83.479	2.936	254.195	-0.487	1.5730388540E+003	7.3986434913E+001	2.9852531433E+002	0.144	1.376	1.649
84.586	3.352	253.650	-0.498	1.9061888425E+003	9.7658542775E+001	3.1041123170E+002	0.162	1.420	1.616
85.694	3.756	253.093	-0.488	2.2606212923E+003	1.2392664471E+002	3.1773898586E+002	0.179	1.481	1.596
86.420	4.050	252.756	-0.468	2.4903061751E+003	1.4215183320E+002	3.2907700711E+002	0.190	1.526	1.594
87.155	4.341	252.409	-0.443	2.7416515466E+003	1.6368294045E+002	3.1772855402E+002	0.202	1.591	1.599
87.595	4.509	252.236	-0.401	2.8750996362E+003	1.7578209074E+002	3.1007678116E+002	0.209	1.634	1.606
88.703	4.921	251.788	-0.382	3.2378174159E+003	2.1085796033E+002	3.1564754635E+002	0.229	1.786	1.629
89.510	5.264	251.504	-0.344	3.4858049558E+003	2.3680570071E+002	3.1042240871E+002	0.241	1.938	1.650
90.618	5.610	251.129	-0.330	3.8348011117E+003	2.7608694391E+002	3.1861213198E+002	0.262	2.218	1.683
91.368	5.860	250.891	-0.280	4.0757095844E+003	3.0577836734E+002	2.9812498735E+002	0.278	2.475	1.708
92.190	6.063	250.689	-0.229	4.3000969034E+003	3.3586072935E+002	2.6878001796E+002	0.294	2.792	1.734
93.284	6.365	250.452	-0.199	4.5877778710E+003	3.7755126658E+002	2.5839499176E+002	0.314	3.333	1.768
94.391	6.574	250.250	-0.171	4.8687608187E+003	4.2241504611E+002	2.3497689834E+002	0.338	4.003	1.802
94.879	6.684	250.179	-0.118	4.9793440458E+003	4.4124319595E+002	2.1882523945E+002	0.348		

4.305 1.816
95.987 6.836 250.061 -0.091 5.2018171658E+003 4.8231443165E+002 1.8032792406E+002 0.369
4.809 1.844
96.695 6.961 250.015 -0.053 5.3202319389E+003 5.0618441375E+002 1.6208477930E+002 0.381
4.936 1.859
97.802 7.072 249.965 -0.033 5.4909051450E+003 5.4261755508E+002 1.4413960644E+002 0.399
4.917 1.882
98.693 7.184 249.949 -0.015 5.6121362154E+003 5.7046783788E+002 1.3151041492E+002 0.413
4.718 1.902
99.025 7.207 249.947 0.002 5.6552418272E+003 5.8062057538E+002 1.2604072817E+002 0.418
4.631 1.909
100.133 7.299 249.952 0.011 5.7809965977E+003 6.1143753668E+002 1.0614814560E+002 0.433
4.310 1.935
101.240 7.406 249.972 0.018 5.8903673424E+003 6.3927630350E+002 9.8685750540E+001 0.446
3.985 1.963
101.320 7.414 249.974 0.028 5.8982109105E+003 6.4129102088E+002 9.8290514318E+001 0.447
3.962 1.965
102.427 7.528 250.005 0.032 6.0010444565E+003 6.6790569995E+002 8.9814389444E+001 0.458
3.677 1.999
103.535 7.650 250.044 0.035 6.0971560213E+003 6.9310942138E+002 8.2257885034E+001 0.468
3.442 2.038
103.710 7.670 250.050 0.042 6.1114605826E+003 6.9689087870E+002 8.2013279373E+001 0.470
3.410 2.044
104.818 7.797 250.098 0.046 6.2055908835E+003 7.2187909738E+002 8.5234015419E+001 0.479
3.234 2.091
105.860 7.924 250.150 0.050 6.2946787653E+003 7.4567144777E+002 8.8349754088E+001 0.488
3.099 2.143
105.939 7.934 250.154 0.063 6.3017156651E+003 7.4755617022E+002 8.9026146250E+001 0.489
3.089 2.147
107.047 8.080 250.224 0.065 6.4073610010E+003 7.7589404532E+002 9.3627585624E+001 0.500
2.955 2.214
108.102 8.223 250.294 0.070 6.5043729018E+003 8.0181944328E+002 9.3920020227E+001 0.509
2.842 2.281
109.210 8.376 250.375 0.074 6.6106821151E+003 8.3002753580E+002 9.4228118319E+001 0.519
2.729 2.357
110.199 8.515 250.450 0.077 6.7023745274E+003 8.5404182220E+002 9.2041559285E+001 0.528
2.641 2.420
111.307 8.670 250.536 0.080 6.8035517497E+003 8.7999628369E+002 9.1652464588E+001 0.536
2.554 2.486
112.296 8.812 250.617 0.084 6.8944698176E+003 9.0246468632E+002 9.3035730100E+001 0.543
2.484 2.535
113.060 8.923 250.684 0.085 6.9662268737E+003 9.1930220075E+002 9.2121745186E+001 0.548
2.435 2.564
114.168 9.081 250.777 0.082 7.0654034686E+003 9.4161488245E+002 7.7279144612E+001 0.553
2.374 2.593
114.393 9.110 250.793 0.075 7.0822424779E+003 9.4517468138E+002 7.5567837137E+001 0.554
2.365 2.595
115.500 9.255 250.876 0.075 7.1702010599E+003 9.6303667675E+002 7.9250109340E+001 0.557
2.320 2.598
116.497 9.384 250.950 0.075 7.2490722640E+003 9.7814749310E+002 8.1581893793E+001 0.559
2.284 2.589
117.605 9.526 251.034 0.074 7.3424818703E+003 9.9497009947E+002 8.3776605064E+001 0.562
2.246 2.564
118.608 9.651 251.107 0.070 7.4259785825E+003 1.0093365451E+003 8.3090146621E+001 0.563
2.216 2.532
119.715 9.785 251.183 0.067 7.5177882021E+003 1.0246452860E+003 8.1417963282E+001 0.565
2.185 2.488
120.260 9.847 251.217 0.062 7.5617491444E+003 1.0318920119E+003 8.0596820587E+001 0.566
2.171 2.465
120.728 9.900 251.245 0.057 7.5994142009E+003 1.0381014490E+003 8.0372679564E+001 0.566
2.159 2.444
121.835 10.020 251.307 0.054 7.6880544161E+003 1.0529116140E+003 8.0486253130E+001 0.569
2.133 2.391
122.840 10.125 251.360 0.050 7.7693411106E+003 1.0670046550E+003 8.1362867242E+001 0.571
2.109 2.339
123.948 10.236 251.414 0.047 7.8600223319E+003 1.0839574628E+003 8.0669971892E+001 0.574
2.083 2.277
124.957 10.334 251.459 0.044 7.9403716062E+003 1.0998124255E+003 7.4272507957E+001 0.577
2.060 2.222
125.140 10.351 251.466 0.043 7.9537528454E+003 1.1025455634E+003 7.4162731068E+001 0.578
2.056 2.212
126.248 10.457 251.514 0.044 8.0415876603E+003 1.1212610215E+003 8.0571310938E+001 0.582
2.031 2.151
127.060 10.535 251.550 0.048 8.1077717777E+003 1.1361523162E+003 8.5429355132E+001 0.586
2.012 2.104
128.167 10.648 251.606 0.051 8.2083249621E+003 1.1602309009E+003 9.0026420053E+001 0.592
1.983 2.034
129.192 10.754 251.658 0.051 8.2998735625E+003 1.1834749261E+003 8.7784710467E+001 0.599
1.957 1.970

130.020	10.840	251.701	0.051	8.3715229854E+003	1.2024322000E+003	8.4812503952E+001	0.604
1.938	1.919						
131.128	10.954	251.757	0.051	8.4628890426E+003	1.2273029670E+003	7.7113119740E+001	0.610
1.916	1.857						
131.335	10.975	251.767	0.053	8.4786511570E+003	1.2316992794E+003	7.6793723432E+001	0.612
1.912	1.846						
132.442	11.092	251.827	0.054	8.5677717677E+003	1.2569494237E+003	7.8982283141E+001	0.618
1.893	1.785						
133.516	11.207	251.886	0.059	8.6510258277E+003	1.2813301450E+003	7.6779981805E+001	0.624
1.878	1.730						
134.623	11.334	251.955	0.063	8.7351912270E+003	1.3078627370E+003	7.2096019081E+001	0.631
1.863	1.671						
135.731	11.461	252.025	0.063	8.8107235175E+003	1.3328716663E+003	6.7025179342E+001	0.637
1.849	1.618						
135.733	11.462	252.025	0.071	8.8108333098E+003	1.3329100133E+003	6.7019930565E+001	0.637
1.849	1.618						
136.010	11.490	252.045	0.072	8.8292635286E+003	1.3394150223E+003	6.5817242673E+001	0.639
1.846	1.605						
137.118	11.606	252.125	0.077	8.8994721371E+003	1.3650428836E+003	6.2927986702E+001	0.645
1.830	1.553						
137.810	11.687	252.184	0.087	8.9428234712E+003	1.3820361201E+003	6.0371707064E+001	0.650
1.818	1.519						
138.917	11.796	252.282	0.090	9.0056702709E+003	1.4082192678E+003	5.2966788824E+001	0.657
1.795	1.469						
139.846	11.891	252.367	0.095	9.0519119308E+003	1.4289135265E+003	4.5862869840E+001	0.662
1.772	1.431						
140.953	11.985	252.476	0.100	9.0975065753E+003	1.4517700537E+003	3.7815185810E+001	0.669
1.739	1.388						
141.835	12.063	252.565	0.102	9.1284834385E+003	1.4686229935E+003	3.0366402409E+001	0.673
1.710	1.357						
142.000	12.075	252.583	0.112	9.1333576953E+003	1.4715456524E+003	2.9291458916E+001	0.674
1.704	1.351						
142.370	12.104	252.625	0.118	9.1440484584E+003	1.4782205072E+003	2.8197506642E+001	0.675
1.690	1.338						
143.478	12.196	252.757	0.121	9.1729692959E+003	1.4975409933E+003	2.4235834025E+001	0.678
1.648	1.300						
143.898	12.234	252.811	0.128	9.1828651147E+003	1.5047016911E+003	2.0434332621E+001	0.679
1.630	1.285						
145.006	12.310	252.953	0.131	9.1964913484E+003	1.5191040869E+003	8.6631524724E+000	0.681
1.585	1.252						
145.250	12.331	252.988	0.141	9.1984111891E+003	1.5221093153E+003	6.9918817508E+000	0.681
1.574	1.244						
145.912	12.383	253.080	0.147	9.2014812269E+003	1.5291342507E+003	2.2703211283E+000	0.682
1.544	1.224						
147.019	12.460	253.249	0.156	9.1996080579E+003	1.5389752424E+003	-4.5546620255E+000	0.682
1.495	1.191						
148.000	12.535	253.406	0.159	9.1926526303E+003	1.5459734341E+003	-9.6886184431E+000	0.681
1.451	1.163						
148.500	12.562	253.485	0.168	9.1871509811E+003	1.5486918504E+003	-1.2656272127E+001	0.681
1.430	1.149						
149.608	12.636	253.675	0.181	9.1690963126E+003	1.5533153111E+003	-2.3230877565E+001	0.679
1.381	1.118						
150.186	12.690	253.790	0.190	9.1535496440E+003	1.5544222456E+003	-2.9323978916E+001	0.678
1.353	1.101						
151.294	12.759	253.996	0.170	9.1158371528E+003	1.5527836573E+003	-3.8156429697E+001	0.675
1.304	1.074						
152.402	12.791	254.166	0.153	9.0690305020E+003	1.5483717177E+003	-5.0485079042E+001	0.670
1.257	1.049						
152.599	12.797	254.196	0.166	9.0587896160E+003	1.5470753807E+003	-5.2764714937E+001	0.669
1.248	1.045						
153.205	12.807	254.299	0.170	9.0252763409E+003	1.5426681948E+003	-5.5634534466E+001	0.666
1.221	1.032						
154.313	12.826	254.488	0.170	8.9629304649E+003	1.5333316842E+003	-5.9978453918E+001	0.660
1.179	1.014						
154.730	12.833	254.559	0.185	8.9373162738E+003	1.5291662376E+003	-6.3410039883E+001	0.658
1.163	1.008						
155.837	12.836	254.771	0.191	8.8610849847E+003	1.5163646212E+003	-7.2997408536E+001	0.651
1.123	0.992						
156.763	12.839	254.948	0.204	8.7903359900E+003	1.5040133203E+003	-7.8097294248E+001	0.645
1.092	0.981						
157.870	12.825	255.185	0.214	8.7016941000E+003	1.4880716286E+003	-8.1411108062E+001	0.638
1.059	0.969						
157.910	12.824	255.194	0.220	8.6984419373E+003	1.4874774596E+003	-8.1973951553E+001	0.638
1.057	0.969						
158.700	12.819	255.367	0.227	8.6256721937E+003	1.4740442387E+003	-9.6209510290E+001	0.632
1.035	0.962						
159.080	12.810	255.460	0.243	8.5883536961E+003	1.4670875840E+003	-1.0051006225E+002	0.629
1.025	0.959						
160.188	12.785	255.729	0.243	8.4694954469E+003	1.4447553488E+003	-1.2761418546E+002	0.620

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0.997       0.950
   160.250      12.784     255.744       0.231   8.4614524870E+003   1.4432316558E+003  -1.2881416978E+002       0.620
0.995       0.950
   160.741      12.766     255.857       0.246   8.3979862924E+003   1.4311756270E+003  -1.2879275624E+002       0.615
0.982       0.946
   161.849      12.709     256.137       0.253   8.2564825834E+003   1.4041011816E+003  -1.3192345672E+002       0.605
0.958       0.939
   162.681      12.667     256.347       0.255   8.1441167966E+003   1.3825378076E+003  -1.3593044538E+002       0.597
0.942       0.935
   163.240      12.620     256.491       0.259   8.0677479226E+003   1.3678478706E+003  -1.3972239219E+002       0.592
0.932       0.932
   164.348      12.528     256.779       0.262   7.9059865555E+003   1.3366681558E+003  -1.4994989448E+002       0.581
0.915       0.927
   164.710      12.501     256.876       0.269   7.8512096189E+003   1.3260881229E+003  -1.5192219262E+002       0.578
0.910       0.926
   165.817      12.382     257.175       0.271   7.6805848979E+003   1.2930826085E+003  -1.5547343209E+002       0.566
0.895       0.922
   166.230      12.339     257.288       0.279   7.6162024499E+003   1.2806057423E+003  -1.5887853850E+002       0.562
0.890       0.920
   166.833      12.282     257.458       0.288   7.5178819811E+003   1.2614235353E+003  -1.6509241684E+002       0.555
0.884       0.918
   167.940      12.153     257.780       0.292   7.3309467386E+003   1.2247565430E+003  -1.7468661503E+002       0.542
0.873       0.916
   168.115      12.134     257.833       0.301   7.3002881041E+003   1.2187188421E+003  -1.7595064308E+002       0.540
0.872       0.915
   168.240      12.121     257.870       0.288   7.2782644000E+003   1.2143786362E+003  -1.7522663219E+002       0.538
0.871       0.915
   169.212      12.003     258.148       0.290   7.1152355717E+003   1.1821354925E+003  -1.7113645271E+002       0.526
0.864       0.913
   170.000      11.900     258.380       0.297   6.9781952895E+003   1.1548778872E+003  -1.7563567277E+002       0.516
0.860       0.911
   171.108      11.760     258.712       0.303   6.7809576068E+003   1.1154636796E+003  -1.8753522837E+002       0.502
0.854       0.909
   171.400      11.728     258.805       0.325   6.7252896465E+003   1.1042872029E+003  -1.9121867716E+002       0.498
0.852       0.909
   172.508      11.594     259.166       0.327   6.5085484598E+003   1.0606300149E+003  -1.9593166694E+002       0.482
0.846       0.907
   173.504      11.474     259.492       0.340   6.3132856961E+003   1.0212386485E+003  -2.0265642650E+002       0.468
0.842       0.905
   174.611      11.344     259.881       0.351   6.0808106219E+003   9.7451668763E+002  -2.0152966190E+002       0.450
0.837       0.903
   174.640      11.340     259.891       0.328   6.0749836570E+003   9.7335114750E+002  -2.0110567191E+002       0.450
0.836       0.903
   175.544      11.211     260.187       0.333   5.8990322328E+003   9.3821447486E+002  -2.0509514094E+002       0.437
0.833       0.902
   175.790      11.177     260.274       0.352   5.8478200393E+003   9.2806878753E+002  -2.0743655573E+002       0.433
0.832       0.902
   176.898      11.021     260.663       0.343   5.6205248331E+003   8.8346151698E+002  -1.9616866114E+002       0.416
0.828       0.900
   177.616      10.904     260.900       0.343   5.4837166660E+003   8.5696559511E+002  -1.9369303514E+002       0.406
0.825       0.900
   178.724      10.724     261.290       0.359   5.2633870822E+003   8.1519114531E+002  -2.0435743347E+002       0.390
0.822       0.900
   179.280      10.644     261.497       0.365   5.1482553593E+003   7.9368196738E+002  -2.0016745469E+002       0.382
0.821       0.900
   179.642      10.586     261.625       0.368   5.0774824749E+003   7.8057268279E+002  -1.9744854074E+002       0.376
0.820       0.900
   180.749      10.404     262.037       0.371   4.8527746942E+003   7.3990724954E+002  -2.0109893880E+002       0.360
0.819       0.901
   181.640      10.255     262.367       0.370   4.6749244282E+003   7.0824095120E+002  -2.0399519453E+002       0.347
0.819       0.902
   181.709      10.244     262.393       0.381   4.6607681020E+003   7.0573422188E+002  -2.0431786952E+002       0.346
0.818       0.902
   182.817      10.048     262.815       0.371   4.4347379237E+003   6.6625009389E+002  -1.9743959483E+002       0.330
0.819       0.905
   183.825       9.849     263.179       0.357   4.2416951577E+003   6.3318089733E+002  -1.7986311751E+002       0.317
0.820       0.908
   184.000       9.806     263.237       0.338   4.2106498654E+003   6.2792725642E+002  -1.7801373930E+002       0.315
0.820       0.908
   185.000       9.568     263.576       0.341   4.0318052996E+003   5.9796793000E+002  -1.7990583142E+002       0.303
0.822       0.912
   186.000       9.333     263.920       0.342   3.8508382025E+003   5.6778863523E+002  -1.6780274296E+002       0.291
0.825       0.917
   186.068       9.315     263.941       0.351   3.8395092710E+003   5.6590681166E+002  -1.6824485932E+002       0.290
0.825       0.917
   187.000       9.095     264.271       0.354   3.6655865751E+003   5.3687699357E+002  -1.8635975045E+002       0.279
0.829       0.922
   187.870       8.889     264.579       0.344   3.5036383431E+003   5.0978513952E+002  -1.7376402000E+002       0.268
0.833       0.928
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188.218	8.796	264.690	0.353	3.4449610243E+003	4.9994216759E+002	-1.7355357871E+002	0.265
0.834	0.930						
189.325	8.530	265.092	0.371	3.2360274648E+003	4.6460157109E+002	-1.9142698514E+002	0.252
0.841	0.938						
190.322	8.307	265.470	0.384	3.0427722294E+003	4.3160911574E+002	-1.9428978742E+002	0.239
0.847	0.946						
191.429	8.055	265.901	0.402	2.8271441846E+003	3.9449472927E+002	-1.9884413450E+002	0.224
0.855	0.956						
192.396	7.861	266.303	0.419	2.6313962544E+003	3.6067778734E+002	-2.0021577012E+002	0.210
0.863	0.965						
193.504	7.631	266.771	0.431	2.4125088148E+003	3.2291571092E+002	-1.9830763036E+002	0.193
0.873	0.977						
194.483	7.446	267.203	0.444	2.2177556462E+003	2.8963742423E+002	-1.9439646370E+002	0.177
0.882	0.987						
195.590	7.228	267.699	0.444	2.0080997396E+003	2.5474092564E+002	-1.8335971310E+002	0.161
0.892	1.000						
196.554	7.032	268.123	0.425	1.8363552833E+003	2.2690393593E+002	-1.6865651916E+002	0.147
0.902	1.011						
197.662	6.760	268.579	0.409	1.6616960242E+003	1.9969481736E+002	-1.5274793866E+002	0.134
0.913	1.024						
198.650	6.512	268.981	0.405	1.5150133764E+003	1.7767755948E+002	-1.4460378150E+002	0.122
0.924	1.036						
199.758	6.218	269.429	0.400	1.3594758265E+003	1.5521135551E+002	-1.3511535714E+002	0.111
0.936	1.051						
200.785	5.935	269.835	0.396	1.2257264750E+003	1.3659693163E+002	-1.2642171111E+002	0.101
0.949	1.067						
201.500	5.730	270.118	0.396	1.1372575300E+003	1.2464895986E+002	-1.2168007763E+002	0.094
0.959	1.079						
202.608	5.413	270.557	0.391	1.0061454633E+003	1.0733276009E+002	-1.1081653363E+002	0.084
0.977	1.100						
203.000	5.293	270.705	0.397	9.6375619658E+002	1.0184848595E+002	-1.0861077275E+002	0.081
0.983	1.107						
204.107	4.966	271.153	0.409	8.4198947342E+002	8.6362681633E+001	-1.0727840143E+002	0.072
1.005	1.134						
205.120	4.676	271.573	0.443	7.3582932854E+002	7.3176688504E+001	-1.0569225832E+002	0.063
1.028	1.162						
206.227	4.400	272.093	0.464	6.1774076092E+002	5.9004259379E+001	-1.0608939350E+002	0.053
1.056	1.196						
207.203	4.145	272.539	0.473	5.1472436971E+002	4.6526593882E+001	-1.0575246533E+002	0.044
1.086	1.232						
208.310	3.865	273.078	0.484	3.9743269255E+002	3.2434327054E+001	-9.9612416042E+001	0.043
1.129	1.284						
209.255	3.623	273.533	0.473	3.0833647180E+002	2.2096870677E+001	-8.6939163487E+001	0.043
1.167	1.331						
210.363	3.299	274.049	0.475	2.2152420046E+002	1.2921509302E+001	-7.3119073573E+001	0.043
1.225	1.400						
211.339	3.033	274.524	0.515	1.5467096107E+002	7.1025115844E+000	-6.4639553167E+001	0.043
1.287	1.474						
212.447	2.763	275.121	0.522	8.7904218711E+001	3.0238063139E+000	-5.1436438372E+001	0.043
1.382	1.583						
213.554	2.454	275.680	0.490	4.0735677466E+001	1.2406102483E+000	-2.4728740926E+001	0.043
1.466	1.677						
213.641	2.413	275.707	0.490	3.8707983356E+001	1.1790475253E+000	-2.4172818997E+001	0.043
1.464	1.683						

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)
75.435	1.108	1.495	-42.211	-6.254	-9.351	38.030	56.866
76.542	1.108	1.495	-42.211	-18.761	-28.053	38.937	58.222
77.650	0.050	0.068	-42.211	-25.297	-1.710	38.735	2.618
77.700	1.108	1.495	-42.211	-31.080	-46.473	40.598	60.706

78.808	0.148	0.200	-42.211	-37.315	-7.463	40.392	8.078
78.956	1.108	1.495	-42.211	-44.137	-65.998	105.937	158.407
80.063	0.287	0.387	-42.211	-51.798	-20.057	107.023	41.440
80.350	1.108	1.495	-42.211	-59.460	-88.910	108.622	162.422
81.458	1.108	1.495	-42.211	-71.631	-107.109	112.139	167.681
82.565	0.435	0.587	-42.211	-80.106	-47.039	112.377	65.988
83.000	0.479	0.646	-42.211	-84.974	-54.912	113.778	73.526
83.479	1.108	1.467	-40.966	-92.280	-135.351	113.766	166.865
84.586	1.108	1.467	-40.966	-103.249	-151.440	115.276	169.080
85.694	0.726	0.962	-40.966	-112.331	-108.045	116.162	111.730
86.420	0.735	0.973	-40.966	-119.570	-116.355	118.872	115.676
87.155	0.440	0.557	-37.817	-121.702	-67.817	117.320	65.375
87.595	1.108	1.402	-37.817	-128.495	-180.148	119.957	168.178
88.703	0.808	1.023	-37.817	-136.901	-139.984	120.242	122.951
89.510	1.108	1.321	-33.054	-134.913	-178.274	121.094	160.013
90.618	0.751	0.895	-33.054	-141.505	-126.711	123.529	110.614
91.368	0.822	0.916	-26.223	-124.008	-113.578	118.881	108.882
92.190	1.094	1.219	-26.223	-128.699	-156.908	119.657	145.885
93.284	1.108	1.181	-20.350	-106.303	-125.572	117.183	138.424
94.391	0.488	0.520	-20.350	-108.870	-56.634	116.375	60.538
94.879	1.108	1.140	-13.687	-72.630	-82.792	111.092	126.634
95.987	0.708	0.729	-13.687	-74.098	-54.015	110.080	80.245
96.695	1.108	1.119	-8.201	-39.042	-43.687	106.042	118.659
97.802	0.891	0.900	-8.201	-39.682	-35.704	105.744	95.145
98.693	0.332	0.333	-4.461	-13.533	-4.508	103.084	34.341
99.025	1.108	1.111	-4.461	-13.657	-15.171	102.807	114.208
100.133	1.108	1.111	-4.461	-13.847	-15.383	102.536	113.907
101.240	0.079	0.080	-4.461	-13.949	-1.112	102.557	8.176
101.320	1.108	1.111	-4.300	-12.856	-14.279	102.338	113.662
102.427	1.108	1.111	-4.300	-13.029	-14.471	102.214	113.525
103.535	0.175	0.176	-4.300	-13.129	-2.310	102.097	17.961
103.710	1.108	1.110	-4.116	-11.820	-13.125	102.102	113.374
104.818	1.042	1.045	-4.116	-11.968	-12.507	102.126	106.733
105.860	0.079	0.080	-4.116	-12.046	-0.960	102.210	8.142
105.939	1.108	1.110	-3.926	-10.648	-11.821	102.274	113.539
107.047	1.055	1.058	-3.926	-10.803	-11.424	102.184	108.062
108.102	1.108	1.110	-3.724	-9.320	-10.344	102.148	113.372
109.210	0.990	0.992	-3.724	-9.446	-9.367	102.046	101.199
110.199	1.108	1.110	-3.539	-8.029	-8.909	101.879	113.050
111.307	0.989	0.991	-3.539	-8.134	-8.061	101.821	100.904
112.296	0.764	0.766	-3.354	-6.640	-5.083	101.674	77.833
113.060	1.108	1.109	-3.354	-6.715	-7.450	101.531	112.642
114.168	0.225	0.226	-3.354	-6.768	-1.527	101.201	22.826
114.393	1.108	1.109	-3.170	-5.206	-5.775	101.158	112.208
115.500	0.997	0.999	-3.170	-5.269	-5.262	101.089	100.952
116.497	1.108	1.109	-2.987	-3.690	-4.092	101.028	112.045
117.605	1.003	1.004	-2.987	-3.733	-3.749	100.970	101.387
118.608	1.108	1.109	-2.986	-3.768	-4.178	100.935	111.942
119.715	0.545	0.546	-2.986	-3.801	-2.074	100.900	55.046
120.260	0.468	0.468	-2.986	-3.819	-1.789	100.898	47.264
120.728	1.108	1.109	-2.985	-3.831	-4.249	100.905	111.907
121.835	1.005	1.006	-2.985	-3.859	-3.883	100.949	101.573
122.840	1.108	1.109	-2.984	-3.878	-4.301	101.035	112.052
123.948	1.010	1.011	-2.984	-3.907	-3.950	101.062	102.191
124.957	0.183	0.183	-2.983	-3.913	-0.715	101.012	18.462
125.140	1.108	1.109	-2.983	-3.930	-4.359	101.143	112.171
126.248	0.812	0.813	-2.983	-3.956	-3.217	101.240	82.327
127.060	1.108	1.109	-2.982	-3.972	-4.405	101.469	112.533
128.167	1.025	1.026	-2.982	-4.000	-4.106	101.533	104.208
129.192	0.828	0.829	-2.981	-4.015	-3.329	101.547	84.184
130.020	1.108	1.109	-2.981	-4.043	-4.484	101.517	112.586
131.128	0.207	0.207	-2.981	-4.063	-0.843	101.434	21.036
131.335	1.108	1.109	-2.980	-4.074	-4.518	101.540	112.611
132.442	1.074	1.075	-2.980	-4.107	-4.415	101.534	109.160
133.516	1.108	1.109	-2.979	-4.131	-4.581	101.618	112.697
134.623	1.108	1.109	-2.979	-4.164	-4.619	101.525	112.594
135.731	0.002	0.002	-2.979	-4.181	-0.007	101.581	0.167
135.733	0.277	0.278	-1.838	7.684	2.133	100.978	28.032
136.010	1.108	1.108	-1.838	7.720	8.554	100.965	111.880
137.118	0.692	0.692	-1.838	7.765	5.377	101.024	69.954
137.810	1.108	1.108	-0.583	21.081	23.349	100.313	111.106
138.917	0.929	0.929	-0.583	21.205	19.691	100.295	93.135
139.846	1.108	1.108	0.747	35.535	39.360	99.650	110.375
140.953	0.881	0.881	0.747	35.709	31.475	99.676	87.856
141.835	0.165	0.166	2.061	49.888	8.257	99.174	16.414
142.000	0.370	0.370	2.061	49.967	18.500	99.157	36.712
142.370	1.108	1.108	2.061	50.218	55.654	99.184	109.921
143.478	0.421	0.421	2.061	50.479	21.250	99.204	41.761
143.898	1.108	1.110	3.418	65.447	72.615	98.993	109.834

145.006	0.244	0.245	3.418	65.711	16.078	99.047	24.235
145.250	0.662	0.663	3.418	65.888	43.691	99.178	65.766
145.912	1.108	1.111	4.755	80.758	89.751	99.045	110.075
147.019	0.981	0.984	4.755	81.191	79.917	99.233	97.676
148.000	0.500	0.502	5.996	94.984	47.716	99.265	49.867
148.500	1.108	1.114	5.996	95.250	106.073	99.436	110.734
149.608	0.579	0.582	5.996	95.496	55.592	99.742	58.063
150.186	1.108	1.116	7.069	107.352	119.807	100.235	111.864
151.294	1.108	1.116	7.069	107.643	120.132	100.633	112.308
152.402	0.197	0.199	7.069	107.814	21.417	101.045	20.072
152.599	0.606	0.613	8.717	125.606	77.046	101.417	62.208
153.205	1.108	1.120	8.717	125.768	140.921	101.643	113.889
154.313	0.417	0.422	8.717	125.913	53.169	101.945	43.048
154.730	1.108	1.127	10.667	146.513	165.121	102.735	115.784
155.837	0.925	0.941	10.667	146.573	137.976	103.160	97.109
156.763	1.108	1.136	12.789	168.195	191.021	104.042	118.162
157.870	0.040	0.041	12.789	168.117	6.882	104.180	4.265
157.910	0.790	0.810	12.789	168.086	136.144	104.776	84.865
158.700	0.380	0.393	14.871	188.410	74.102	105.906	41.653
159.080	1.108	1.146	14.871	188.181	215.639	106.507	122.048
160.188	0.062	0.065	14.871	188.001	12.150	107.872	6.972
160.250	0.491	0.508	14.871	187.871	95.449	107.923	54.831
160.741	1.108	1.158	16.907	206.318	238.827	108.849	126.000
161.849	0.832	0.870	16.907	205.553	178.755	109.381	95.121
162.681	0.559	0.591	18.905	222.488	131.552	110.473	65.320
163.240	1.108	1.171	18.905	221.547	259.362	111.227	130.212
164.348	0.362	0.383	18.905	220.717	84.508	111.648	42.748
164.710	1.108	1.184	20.679	234.301	277.365	112.809	133.543
165.817	0.413	0.441	20.679	233.184	102.863	112.994	49.845
166.230	0.603	0.644	20.679	232.628	149.906	113.676	73.253
166.833	1.108	1.196	22.149	243.092	290.684	115.041	137.563
167.940	0.175	0.188	22.149	242.377	45.685	115.712	21.810
168.115	0.125	0.135	22.149	242.210	32.688	115.774	15.625
168.240	0.972	1.049	22.149	241.608	253.534	115.071	120.751
169.212	0.788	0.857	23.069	247.283	211.817	116.222	99.553
170.000	1.108	1.204	23.069	245.658	295.722	116.691	140.472
171.108	0.293	0.318	23.069	244.240	77.765	117.894	37.537
171.400	1.108	1.213	24.090	249.749	302.996	119.109	144.504
172.508	0.996	1.090	24.090	247.371	269.756	119.182	129.967
173.504	1.108	1.224	25.155	251.753	308.039	121.117	148.196
174.611	0.029	0.032	25.155	250.321	8.005	120.156	3.842
174.640	0.904	0.998	25.155	249.146	248.745	119.462	119.270
175.544	0.246	0.275	26.217	254.087	69.757	121.240	33.285
175.790	1.108	1.235	26.217	252.227	311.383	120.767	149.091
176.898	0.719	0.801	26.217	249.727	200.128	119.002	95.367
177.616	1.108	1.246	27.235	252.795	314.889	119.967	149.435
178.724	0.556	0.625	27.235	250.298	156.512	120.480	75.337
179.280	0.362	0.407	27.235	249.069	101.319	119.187	48.484
179.642	1.108	1.257	28.236	252.530	317.462	119.910	150.743
180.749	0.891	1.011	28.236	250.100	252.873	119.277	120.600
181.640	0.069	0.079	28.236	248.933	19.576	119.620	9.407
181.709	1.108	1.268	29.173	251.876	319.488	119.740	151.882
182.817	1.009	1.155	29.173	249.045	287.691	118.154	136.489
183.825	0.175	0.202	30.019	251.208	50.639	116.963	23.577
184.000	1.000	1.155	30.019	249.409	288.048	116.884	134.992
185.000	1.000	1.155	30.019	246.318	284.478	117.008	135.135
186.000	0.068	0.078	30.019	244.637	19.177	115.625	9.064
186.068	0.932	1.082	30.545	244.741	264.887	117.734	127.425
187.000	0.870	1.010	30.545	240.476	242.924	117.732	118.931
187.870	0.348	0.404	30.545	237.302	95.771	116.125	46.866
188.218	1.108	1.293	31.098	235.792	304.976	118.360	153.089
189.325	0.997	1.164	31.098	230.517	268.271	119.050	138.547
190.322	1.108	1.301	31.661	227.114	295.518	119.478	155.463
191.429	0.967	1.136	31.661	221.732	251.855	120.331	136.678
192.396	1.108	1.309	32.221	218.042	285.450	120.009	157.110
193.504	0.979	1.157	32.221	212.443	245.878	119.945	138.823
194.483	1.108	1.317	32.772	208.342	274.428	118.657	156.295
195.590	0.964	1.146	32.772	202.603	232.240	117.102	134.232
196.554	1.108	1.325	33.314	198.181	262.653	114.670	151.974
197.662	0.989	1.183	33.314	192.190	227.435	113.294	134.071
198.650	1.108	1.333	33.835	187.322	249.763	112.206	149.608
199.758	1.027	1.237	33.835	181.040	223.927	110.902	137.173
200.785	0.715	0.865	34.322	176.872	153.032	110.130	95.286
201.500	1.108	1.341	34.322	171.497	229.983	109.472	146.806
202.608	0.392	0.475	34.322	167.143	79.331	108.476	51.486
203.000	1.108	1.352	35.006	163.907	221.627	108.548	146.772
204.107	1.013	1.236	35.006	157.514	194.722	107.961	133.463
205.120	1.108	1.364	35.722	152.100	207.493	107.891	147.184
206.227	0.975	1.201	35.722	145.573	174.888	107.889	129.615

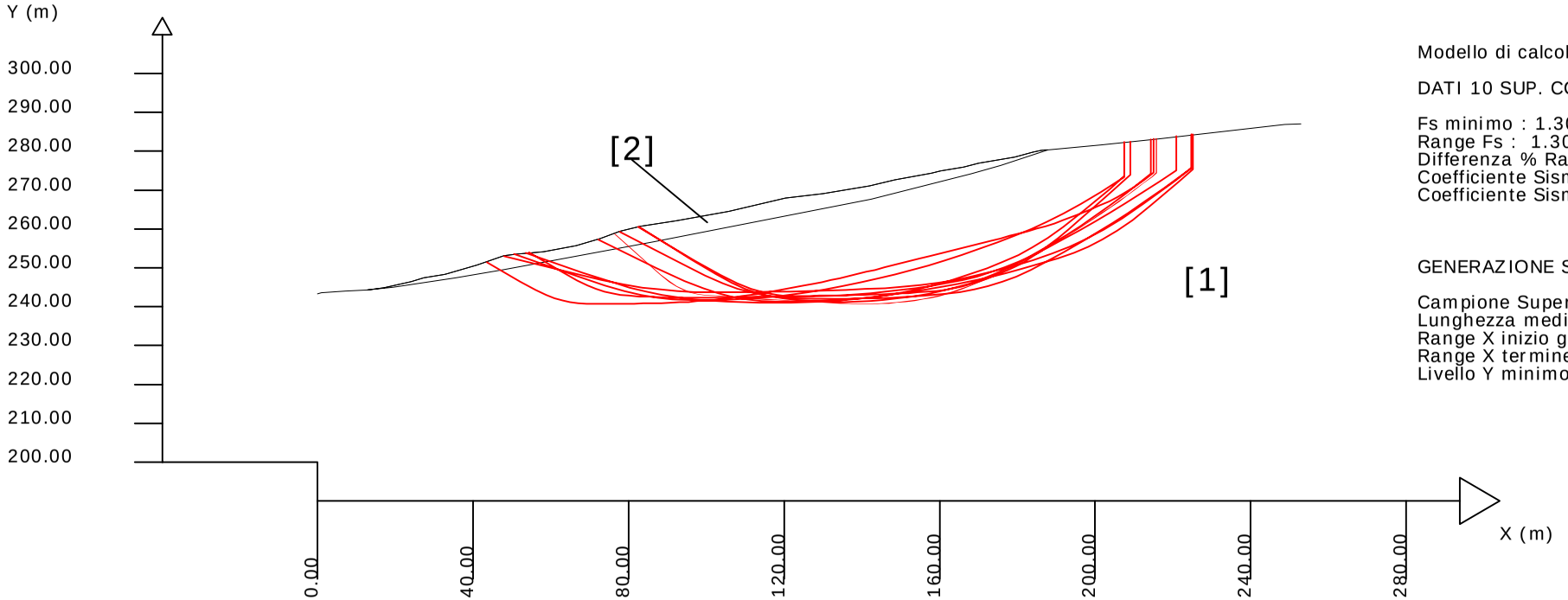
207.203	1.108	1.377	36.449	139.857	192.564	107.911	148.578
208.310	0.945	1.175	36.449	133.174	156.519	106.798	125.519
209.255	1.108	1.390	37.162	127.122	176.669	105.189	146.187
210.363	0.976	1.225	37.162	120.088	147.112	103.733	127.077
211.339	1.108	1.407	38.080	113.655	159.914	102.326	143.974
212.447	1.108	1.407	38.080	105.832	148.907	101.017	142.132
213.554	0.087	0.110	38.080	101.613	11.221	100.447	11.092
213.641	1.108	1.421	38.800	97.711	138.859	100.676	143.073

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

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



Modello di calcolo : Borselli (2016)

DATI 10 SUP. CON MINOR Fs

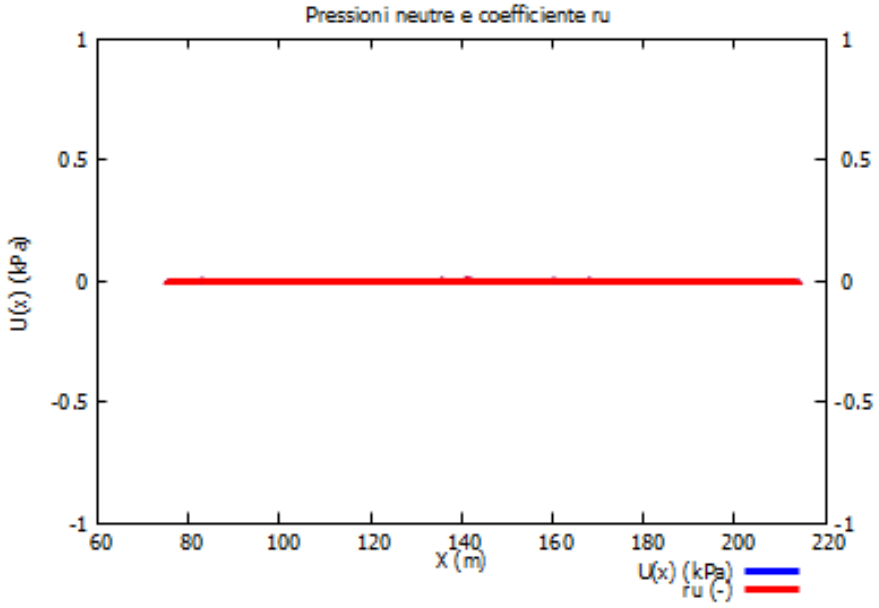
Fs minimo : 1.3010
Range Fs : 1.3010 1.3817
Differenza % Range Fs : 5.84
Coefficiente Sismico orizzontale - Kh: 0.0450
Coefficiente Sismico verticale - Kv: 0.0225

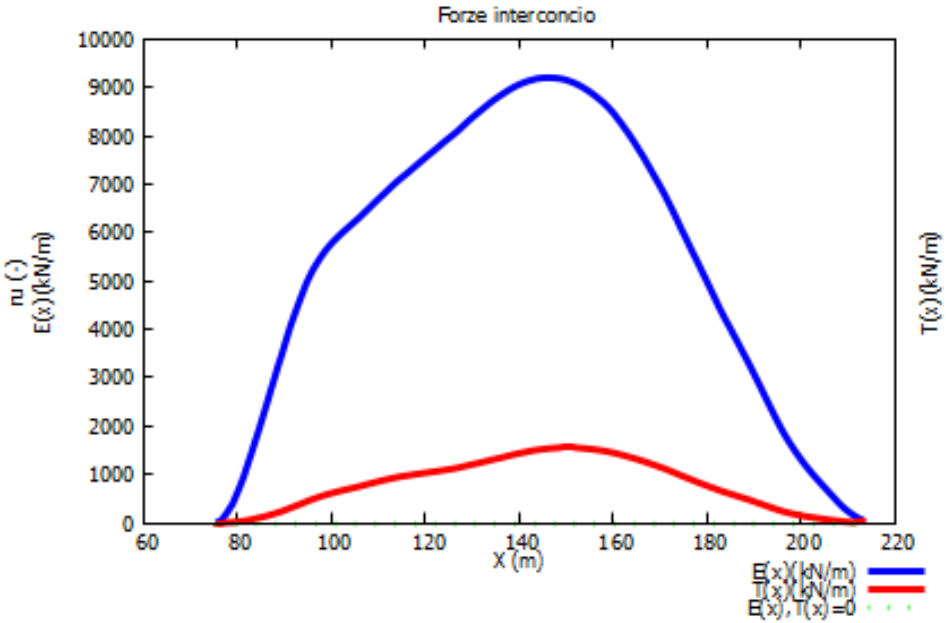
GENERAZIONE SUPERFICI RANDOM

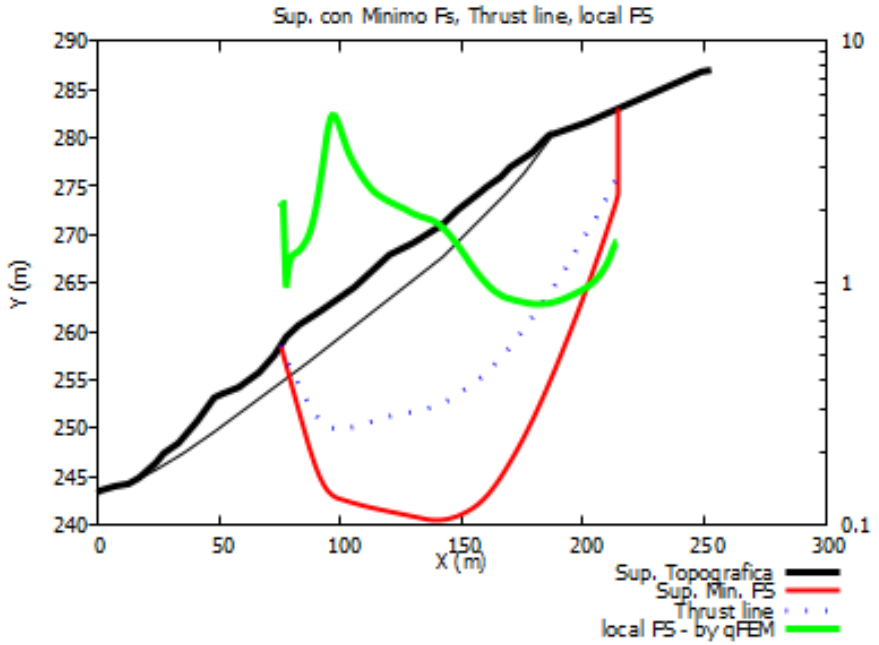
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 10.1
Range X inizio generazione : 5.1 - 232.7
Range X termine generazione : 30.4 - 247.9
Livello Y minimo considerato : 240.0

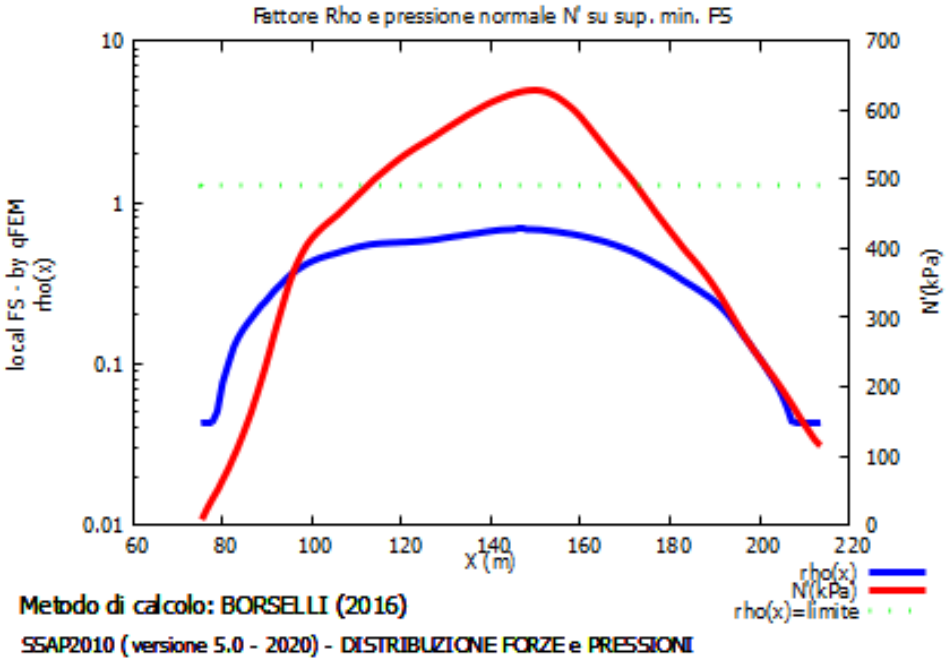
Parametri Geotecnici degli strati # ----------

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
2	0	0	38.00	18.00	20.00	0	0	0	0





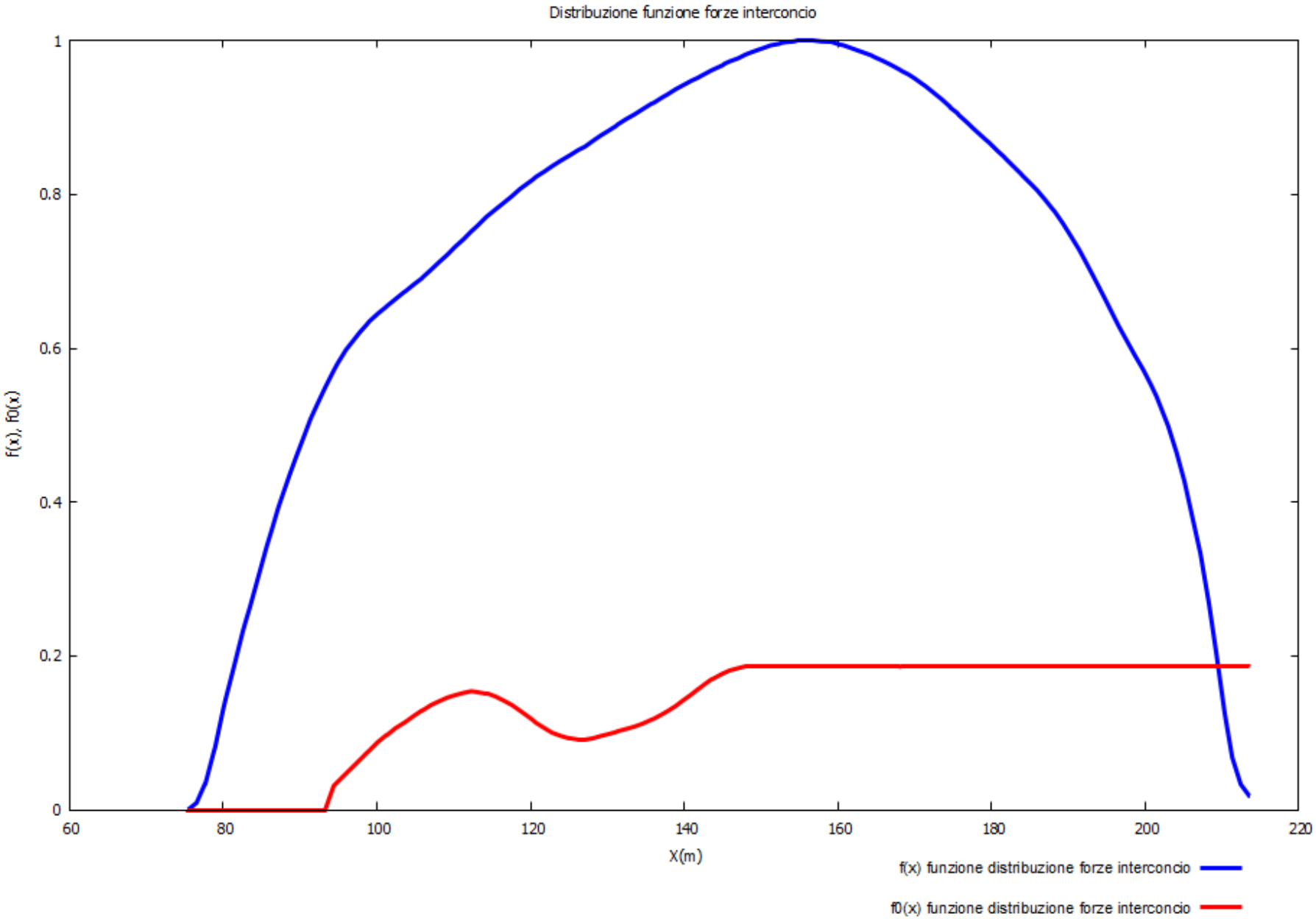


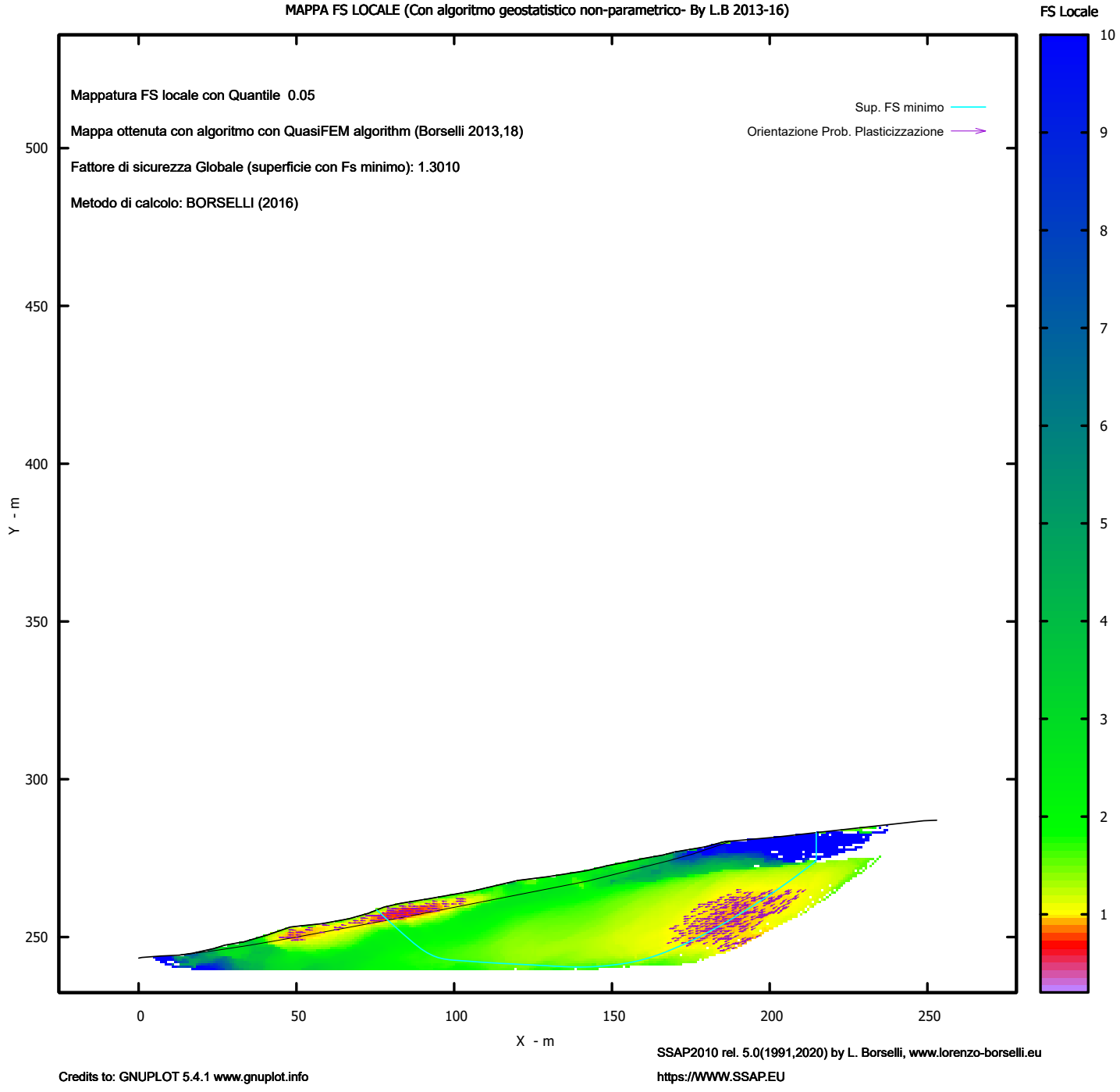


Metodo di calcolo: BORSELLI (2016)

SSAP2010 (versione 5.0 - 2020) - DISTRIBUZIONE FORZE e PRESSIONI

11/11/21 09:26




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): 1.3010
Metodo di calcolo: BORSELLI (2016)
Sup. FS minimo
Orientazione Prob. Plasticizzazione
Y - m
X - m
500
450
400
350
300
250
0
50
100
150
200
250
10
9
8
7
6
5
4
3
2
1
Credits to: GNUPLOT 5.4.1 www.gnuplot.info
SSAP2010 rel. 5.0(1991,2020) by L. Borselli, www.lorenzo-borselli.eu
https://WWW.SSAP.EU