"MIADONNA"

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

PROGETTAZIONE

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Powertis

Comune

COMUNE DI CRACO (MT)

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

Opera

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

Oggetto

PROGETTO DEFINITIVO

RELAZIONE GEOLOGICA

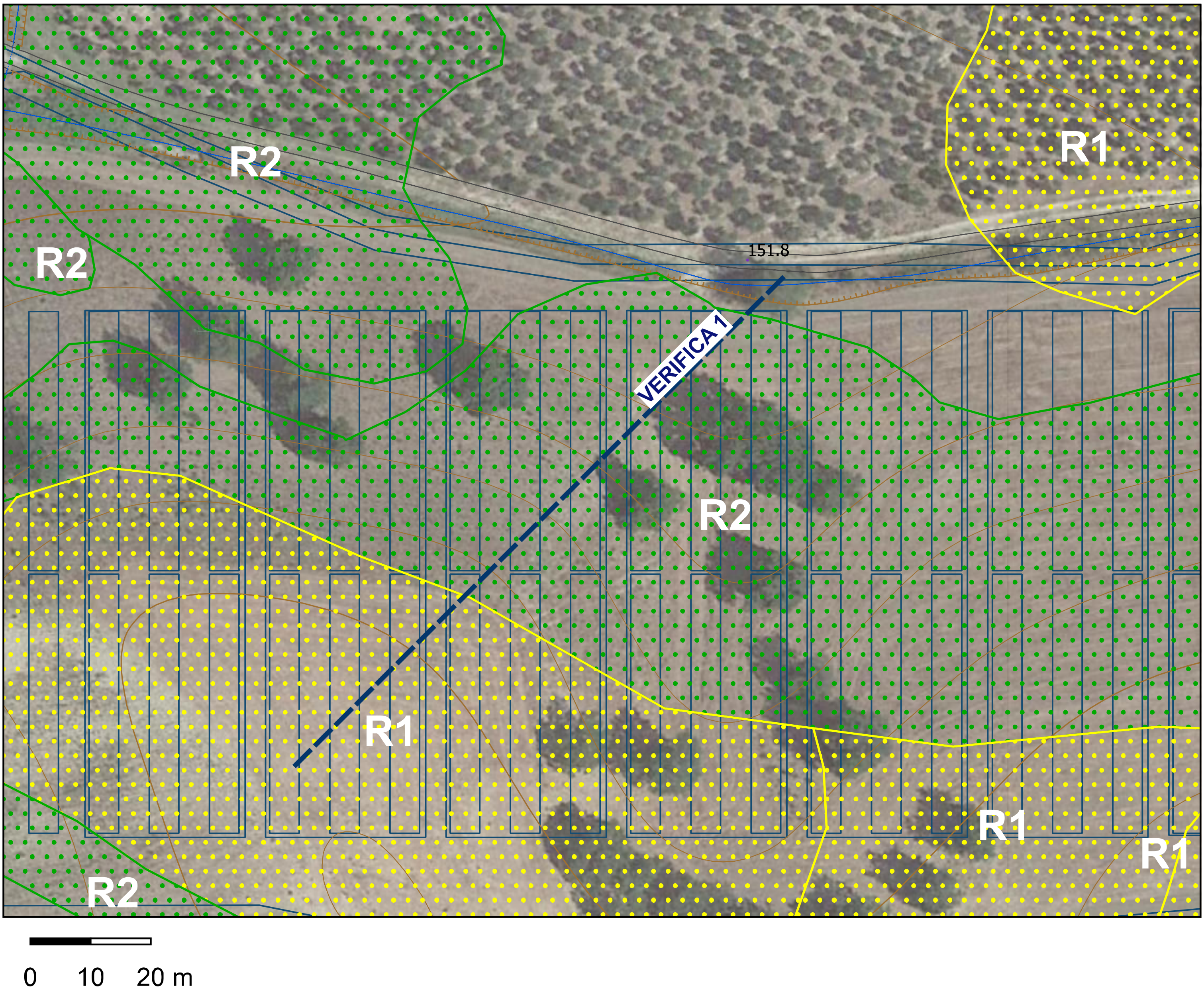
Analisi di stabilità dei pendii

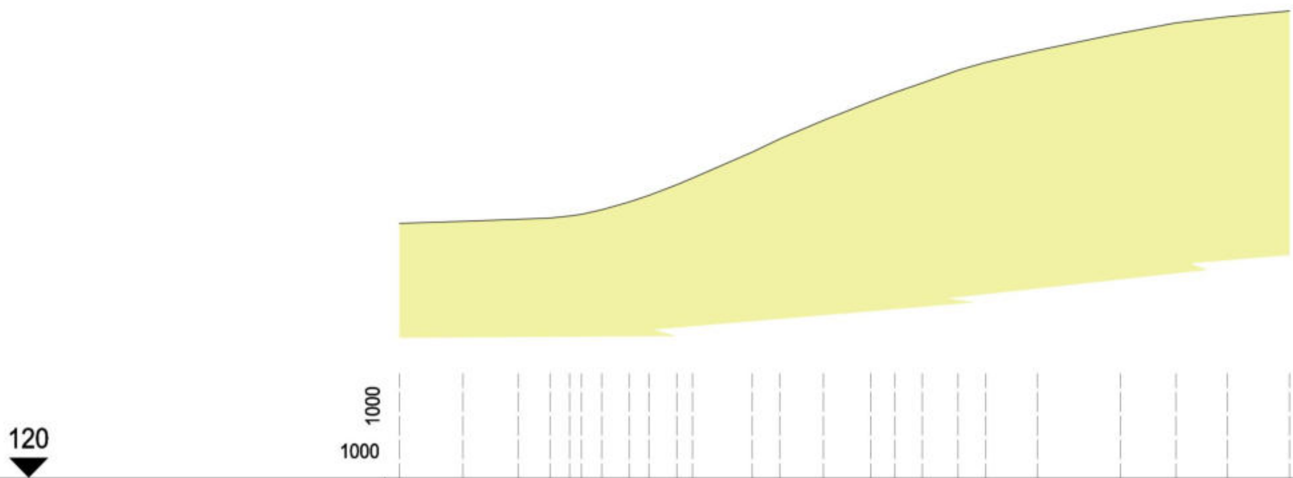
A.2.7

SEZIONE DI VERIFICA N. 1

CONDIZIONI DRENATE

SEZIONE DI VERIFICA N. 1





DISTANZE PROGRESSIVE	0	8	15	19	21.5	23	25.5	29	31.5	35	37	44.5	48	53.5	59.5	62.5	66	70.5	74	80.5	91	98	104.5	112.34
DISTANZE PARZIALI		8	7	4	2.5	1.5	2.5	3.5	2.5	3.5	2	7.5	3.5	5.5	6	3	3.5	4.5	3.5	6.5	10.5	7	6.5	7.84
QUOTE	152.03	152.31	152.55	152.74	152.98	153.18	153.75	154.74	155.56	156.92	157.75	161.03	162.7	165.03	167.4	168.57	169.73	171.36	172.36	173.86	176	177.3	178.11	178.8

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\MIADONNA\VERIFICA1\DRENATA\MORG\MORG.txt
           Data: 14/11/2021
    Localita' :
    Descrizione:
 Modello pendio: VERIFICA1DRENATA.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  152.03     -       -       -       -       -       -
         8.00  152.31     -       -       -       -       -       -
        15.00  152.55     -       -       -       -       -       -
        19.00  152.74     -       -       -       -       -       -
        21.50  152.98     -       -       -       -       -       -
        23.00  153.18     -       -       -       -       -       -
        25.50  153.74     -       -       -       -       -       -
        29.00  154.74     -       -       -       -       -       -
        31.50  155.56     -       -       -       -       -       -
        35.00  156.92     -       -       -       -       -       -
        37.00  157.75     -       -       -       -       -       -
        44.50  161.03     -       -       -       -       -       -
        48.00  162.70     -       -       -       -       -       -
        53.50  165.03     -       -       -       -       -       -
        59.50  167.40     -       -       -       -       -       -
        62.50  168.57     -       -       -       -       -       -
        66.00  169.73     -       -       -       -       -       -
        70.50  171.35     -       -       -       -       -       -
        74.00  172.36     -       -       -       -       -       -
        80.50  173.85     -       -       -       -       -       -
        91.00  176.00     -       -       -       -       -       -
        98.00  177.30     -       -       -       -       -       -
       104.50  178.11     -       -       -       -       -       -
       112.34  178.80     -       -       -       -       -       -
  ## ASSENZA DI FALDA ##

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

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

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

  ------------ INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
  *** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
      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): 4.5 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 2.25 103.35
LIVELLO MINIMO CONSIDERATO (Ymin): 127.94
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 13.48 110.09

*** 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 : 0.0250
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0125
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) 1.7630 - Min. - X Y Lambda= 0.4155

X	Y
25.89	153.85
29.91	151.78
31.71	150.91
32.85	150.45
33.73	150.20
34.67	150.06
35.45	150.03
36.35	150.11
37.37	150.28
38.71	150.59
39.88	150.87
40.96	151.15
41.99	151.44
43.01	151.75
44.01	152.07
45.03	152.41
46.07	152.79
47.17	153.20
48.23	153.61
49.27	154.02
50.29	154.43
51.32	154.86
52.34	155.30
53.37	155.75
54.41	156.21
55.48	156.70
56.53	157.19
57.56	157.68
58.60	158.17
59.63	158.67
60.66	159.17
61.70	159.69
62.74	160.22
63.81	160.76
64.85	161.30
65.88	161.84
66.90	162.39
67.93	162.96
68.96	163.54
70.00	164.14
71.07	164.76
72.18	165.42
73.22	166.07
74.23	166.73
75.21	167.41
76.23	168.14
77.34	168.99
78.60	170.00
80.02	171.18
80.02	173.74

Fattore di sicurezza (FS) 1.7639 - N.2 -- X Y Lambda= 0.4158

X	Y
26.39	153.99
29.47	152.30
30.88	151.57
31.80	151.16
32.54	150.89
33.30	150.71
33.96	150.61
34.69	150.57
35.51	150.58
36.54	150.65
37.43	150.72
38.26	150.81
39.05	150.92
39.85	151.05
40.62	151.19
41.42	151.37
42.24	151.56
43.14	151.80
43.98	152.03
44.79	152.27
45.58	152.51
46.38	152.78
47.17	153.05
47.97	153.35
48.79	153.66
49.65	154.01
50.48	154.35
51.30	154.69
52.11	155.04
52.91	155.39
53.72	155.75
54.53	156.12
55.34	156.50
56.18	156.90
57.00	157.30
57.82	157.69
58.63	158.09
59.45	158.49
60.26	158.89
61.07	159.30
61.89	159.71
62.72	160.13
63.54	160.54
64.35	160.96
65.17	161.38
65.98	161.80
66.79	162.23
67.61	162.66
68.43	163.10
69.26	163.54
70.08	163.98
70.89	164.43
71.70	164.88
72.51	165.33
73.32	165.80
74.15	166.27
74.99	166.77
75.87	167.29
76.68	167.79
77.47	168.32
78.23	168.85
79.03	169.45
79.89	170.14
80.88	170.97
81.35	171.39
81.35	174.02

Fattore di sicurezza (FS) 1.7660 - N.3 -- X Y Lambda= 0.4044

X	Y
22.91	153.17
26.02	151.58
27.49	150.87
28.48	150.46
29.29	150.16
30.10	149.94
30.82	149.79
31.62	149.68
32.47	149.61

33.51	149.57
34.42	149.56
35.26	149.57
36.06	149.60
36.89	149.67
37.68	149.75
38.50	149.86
39.35	150.01
40.29	150.19
41.16	150.37
42.01	150.56
42.84	150.75
43.68	150.96
44.50	151.18
45.34	151.42
46.19	151.67
47.08	151.94
47.95	152.22
48.79	152.49
49.62	152.78
50.46	153.07
51.30	153.37
52.14	153.68
53.00	154.01
53.88	154.36
54.74	154.70
55.58	155.05
56.41	155.41
57.25	155.78
58.08	156.15
58.91	156.54
59.76	156.95
60.63	157.37
61.49	157.80
62.34	158.22
63.19	158.65
64.03	159.07
64.88	159.50
65.73	159.94
66.58	160.38
67.45	160.83
68.30	161.29
69.14	161.74
69.98	162.20
70.82	162.67
71.65	163.15
72.49	163.63
73.34	164.13
74.20	164.65
75.06	165.16
75.91	165.67
76.76	166.19
77.60	166.70
78.45	167.22
79.31	167.75
80.17	168.28
81.05	168.83
81.89	169.37
82.72	169.92
83.54	170.48
84.38	171.07
85.31	171.74
85.84	172.14
85.84	174.94

Fattore di sicurezza (FS) 1.7684 - N.4 -- X Y Lambda= 0.4133

23.52	153.30
26.26	151.62
27.54	150.89
28.37	150.46
29.05	150.17
29.73	149.96
30.33	149.82
30.99	149.73
31.71	149.69
32.61	149.67
33.41	149.67
34.17	149.68

34.90	149.69
35.62	149.72
36.34	149.76
37.07	149.81
37.84	149.87
38.65	149.94
39.39	150.03
40.09	150.13
40.77	150.26
41.49	150.41
42.17	150.58
42.87	150.78
43.61	151.02
44.42	151.29
45.18	151.56
45.92	151.83
46.64	152.11
47.36	152.40
48.08	152.69
48.80	153.00
49.54	153.32
50.30	153.67
51.05	154.01
51.78	154.35
52.51	154.70
53.24	155.05
53.96	155.40
54.69	155.77
55.42	156.14
56.16	156.52
56.90	156.90
57.64	157.27
58.38	157.65
59.11	158.03
59.85	158.41
60.58	158.78
61.32	159.16
62.05	159.54
62.78	159.91
63.52	160.29
64.25	160.67
64.98	161.05
65.72	161.43
66.47	161.82
67.23	162.22
68.02	162.63
68.74	163.03
69.44	163.45
70.13	163.88
70.84	164.36
71.53	164.85
72.24	165.38
72.98	165.96
73.77	166.61
74.53	167.24
75.27	167.86
75.99	168.48
76.72	169.12
77.53	169.85
78.44	170.67
78.44	173.38

Fattore di sicurezza (FS) 1.7688 - N.5 -- X Y Lambda= 0.4097

24.13	153.43
29.04	150.75
31.22	149.64
32.57	149.07
33.60	148.77
34.72	148.62
35.62	148.62
36.68	148.75
37.88	149.01
39.48	149.45
40.92	149.86
42.27	150.25
43.56	150.62
44.81	150.98
46.06	151.35

47.33	151.73
48.61	152.12
49.92	152.52
51.16	152.92
52.39	153.33
53.60	153.76
54.83	154.22
56.05	154.70
57.29	155.22
58.57	155.77
59.94	156.38
61.21	156.97
62.43	157.58
63.63	158.21
64.86	158.89
66.06	159.59
67.29	160.34
68.58	161.16
69.97	162.09
71.24	162.97
72.47	163.87
73.66	164.79
74.88	165.79
76.21	166.94
77.73	168.32
79.92	170.39
80.99	171.42
80.99	173.95

Fattore di sicurezza (FS) 1.7693 - N.6 -- X Y Lambda= 0.4020

25.59	153.77
28.96	151.77
30.51	150.90
31.52	150.40
32.33	150.08
33.16	149.85
33.88	149.72
34.70	149.64
35.61	149.63
36.78	149.67
37.75	149.74
38.64	149.83
39.46	149.95
40.32	150.13
41.12	150.32
41.97	150.57
42.85	150.86
43.85	151.22
44.79	151.57
45.70	151.92
46.60	152.26
47.48	152.61
48.36	152.97
49.25	153.34
50.14	153.71
51.04	154.10
51.95	154.49
52.85	154.87
53.75	155.26
54.64	155.64
55.53	156.02
56.43	156.41
57.32	156.79
58.21	157.17
59.10	157.56
60.00	157.94
60.89	158.33
61.79	158.71
62.69	159.10
63.60	159.49
64.52	159.89
65.47	160.29
66.35	160.70
67.21	161.11
68.05	161.55
68.93	162.02
69.78	162.52
70.67	163.05

	71.60	163.64
	72.62	164.32
	73.52	164.96
	74.38	165.61
	75.20	166.29
	76.07	167.06
	76.99	167.96
	78.06	169.07
	79.62	170.77
	80.09	171.29
	80.09	173.75

Fattore di sicurezza (FS) 1.7694 - N.7 -- X Y Lambda= 0.4145

	22.70	153.14
	26.20	151.42
	27.81	150.69
	28.85	150.28
	29.69	150.03
	30.55	149.87
	31.29	149.80
	32.12	149.79
	33.02	149.85
	34.16	149.99
	35.19	150.12
	36.15	150.25
	37.07	150.39
	37.99	150.55
	38.89	150.71
	39.81	150.88
	40.75	151.07
	41.72	151.28
	42.66	151.49
	43.58	151.71
	44.49	151.94
	45.40	152.17
	46.31	152.42
	47.22	152.68
	48.14	152.95
	49.09	153.25
	50.04	153.54
	50.97	153.83
	51.90	154.12
	52.82	154.41
	53.75	154.71
	54.69	155.01
	55.65	155.31
	56.62	155.63
	57.54	155.95
	58.44	156.28
	59.32	156.63
	60.23	157.01
	61.11	157.41
	62.01	157.83
	62.93	158.29
	63.92	158.80
	64.87	159.30
	65.80	159.79
	66.73	160.29
	67.65	160.79
	68.57	161.30
	69.49	161.82
	70.43	162.36
	71.39	162.92
	72.32	163.47
	73.24	164.02
	74.14	164.58
	75.06	165.17
	75.97	165.76
	76.88	166.37
	77.81	167.01
	78.77	167.68
	79.71	168.35
	80.64	169.01
	81.56	169.68
	82.48	170.36
	83.51	171.13
	84.56	171.93
	84.56	174.68

Fattore di sicurezza (FS) 1.7717 - N.8 -- X Y Lambda= 0.4148

X	Y
26.40	154.00
30.24	151.85
31.97	150.94
33.07	150.45
33.93	150.16
34.83	149.99
35.59	149.93
36.46	149.95
37.44	150.06
38.73	150.29
39.85	150.50
40.88	150.72
41.85	150.94
42.83	151.19
43.78	151.46
44.75	151.75
45.74	152.06
46.78	152.42
47.81	152.77
48.82	153.12
49.82	153.46
50.81	153.81
51.81	154.17
52.82	154.53
53.84	154.90
54.89	155.28
55.88	155.66
56.85	156.05
57.79	156.46
58.77	156.91
59.73	157.37
60.71	157.87
61.73	158.41
62.84	159.03
63.85	159.61
64.82	160.22
65.76	160.83
66.74	161.51
67.68	162.19
68.64	162.93
69.62	163.72
70.67	164.59
71.70	165.45
72.72	166.30
73.73	167.14
74.72	167.97
75.85	168.91
77.09	169.94
78.01	170.71
78.01	173.28

Fattore di sicurezza (FS) 1.7720 - N.9 -- X Y Lambda= 0.3991

X	Y
22.76	153.15
27.86	151.06
30.18	150.18
31.68	149.71
32.88	149.45
34.12	149.33
35.20	149.31
36.40	149.41
37.75	149.62
39.46	149.97
40.93	150.31
42.30	150.65
43.58	151.02
44.89	151.44
46.15	151.88
47.44	152.37
48.76	152.91
50.19	153.52
51.58	154.13
52.95	154.72
54.31	155.31
55.65	155.89
57.00	156.48

58.36	157.07
59.72	157.67
61.10	158.27
62.43	158.87
63.75	159.48
65.06	160.10
66.38	160.76
67.70	161.43
69.04	162.13
70.43	162.88
71.90	163.68
73.24	164.47
74.54	165.27
75.80	166.10
77.11	167.01
78.53	168.07
80.15	169.35
82.49	171.27
83.01	171.70
83.01	174.36

Fattore di sicurezza (FS) 1.7722 - N.10 -- X Y Lambda= 0.4127

26.97	154.16
31.07	152.08
32.95	151.19
34.16	150.70
35.13	150.40
36.13	150.21
36.99	150.13
37.96	150.13
39.03	150.21
40.39	150.38
41.59	150.55
42.70	150.74
43.75	150.93
44.82	151.16
45.85	151.40
46.92	151.67
48.03	151.98
49.23	152.33
50.33	152.68
51.39	153.05
52.41	153.43
53.47	153.85
54.49	154.29
55.54	154.77
56.61	155.29
57.76	155.87
58.88	156.44
59.98	157.00
61.07	157.57
62.14	158.13
63.23	158.70
64.31	159.27
65.41	159.85
66.52	160.45
67.60	161.04
68.67	161.64
69.73	162.25
70.80	162.88
71.86	163.53
72.94	164.19
74.04	164.89
75.19	165.64
76.28	166.37
77.34	167.11
78.39	167.86
79.46	168.65
80.63	169.56
81.95	170.62
83.42	171.82
83.42	174.45

---------- 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	1.763	4875.0	2765.2	1833.3	Surplus
2	1.764	4939.7	2800.4	1859.2	Surplus
3	1.766	6115.4	3462.9	2306.2	Surplus
4	1.768	5201.0	2941.0	1965.9	Surplus
5	1.769	5962.4	3370.9	2254.4	Surplus
6	1.769	5362.9	3031.1	2028.8	Surplus
7	1.769	5880.0	3323.2	2224.5	Surplus
8	1.772	5016.8	2831.6	1902.1	Surplus
9	1.772	5754.4	3247.4	2182.3	Surplus
10	1.772	5676.2	3203.0	2152.9	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 1833.3

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

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

TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (°)	W (kN/m)	ru (-)	U (kPa)	phi' (°)	(c',Cu) (kPa)
25.889	0.472	-27.32	1.81	0.00	0.00	26.00	19.50
26.361	0.472	-27.32	5.43	0.00	0.00	26.00	19.50
26.833	0.472	-27.32	9.05	0.00	0.00	26.00	19.50
27.305	0.472	-27.32	12.67	0.00	0.00	26.00	19.50
27.777	0.472	-27.32	16.29	0.00	0.00	26.00	19.50
28.249	0.472	-27.32	19.91	0.00	0.00	26.00	19.50
28.721	0.279	-27.32	13.46	0.00	0.00	26.00	19.50
29.000	0.472	-27.32	25.76	0.00	0.00	26.00	19.50
29.472	0.436	-27.32	27.15	0.00	0.00	26.00	19.50
29.908	0.472	-25.79	33.01	0.00	0.00	26.00	19.50
30.380	0.472	-25.79	36.67	0.00	0.00	26.00	19.50
30.852	0.472	-25.79	40.33	0.00	0.00	26.00	19.50
31.324	0.176	-25.79	16.02	0.00	0.00	26.00	19.50
31.500	0.206	-25.79	19.38	0.00	0.00	26.00	19.50
31.706	0.472	-21.86	47.02	0.00	0.00	26.00	19.50
32.178	0.472	-21.86	50.59	0.00	0.00	26.00	19.50
32.650	0.197	-21.86	22.18	0.00	0.00	26.00	19.50
32.847	0.472	-16.01	55.38	0.00	0.00	26.00	19.50
33.319	0.411	-16.01	50.71	0.00	0.00	26.00	19.50
33.730	0.472	-8.23	60.76	0.00	0.00	26.00	19.50
34.202	0.465	-8.23	62.26	0.00	0.00	26.00	19.50
34.668	0.332	-1.83	45.78	0.00	0.00	26.00	19.50
35.000	0.450	-1.83	63.57	0.00	0.00	26.00	19.50
35.450	0.472	4.74	68.34	0.00	0.00	26.00	19.50
35.922	0.432	4.74	63.85	0.00	0.00	26.00	19.50
36.354	0.472	9.66	71.02	0.00	0.00	26.00	19.50
36.826	0.174	9.66	26.43	0.00	0.00	26.00	19.50
37.000	0.372	9.66	57.06	0.00	0.00	26.00	19.50
37.372	0.472	12.80	73.40	0.00	0.00	26.00	19.50
37.844	0.472	12.80	74.34	0.00	0.00	26.00	19.50
38.316	0.395	12.80	62.91	0.00	0.00	26.00	19.50
38.711	0.472	13.62	76.05	0.00	0.00	26.00	19.50
39.183	0.472	13.62	76.93	0.00	0.00	26.00	19.50
39.655	0.228	13.62	37.51	0.00	0.00	26.00	19.50
39.883	0.472	14.60	78.20	0.00	0.00	26.00	19.50
40.355	0.472	14.60	78.99	0.00	0.00	26.00	19.50
40.827	0.136	14.60	22.84	0.00	0.00	26.00	19.50
40.962	0.472	15.65	79.98	0.00	0.00	26.00	19.50
41.434	0.472	15.65	80.68	0.00	0.00	26.00	19.50
41.906	0.083	15.65	14.20	0.00	0.00	26.00	19.50
41.989	0.472	16.75	81.47	0.00	0.00	26.00	19.50
42.461	0.472	16.75	82.09	0.00	0.00	26.00	19.50
42.933	0.078	16.75	13.58	0.00	0.00	26.00	19.50
43.011	0.472	17.76	82.76	0.00	0.00	26.00	19.50
43.483	0.472	17.76	83.29	0.00	0.00	26.00	19.50
43.955	0.054	17.76	9.58	0.00	0.00	26.00	19.50
44.009	0.472	18.76	83.83	0.00	0.00	26.00	19.50
44.481	0.019	18.76	3.42	0.00	0.00	26.00	19.50
44.500	0.472	18.76	84.38	0.00	0.00	26.00	19.50

44.972	0.055	18.76	9.93	0.00	0.00	26.00	19.50
45.027	0.472	19.70	85.03	0.00	0.00	26.00	19.50
45.499	0.472	19.70	85.57	0.00	0.00	26.00	19.50
45.971	0.098	19.70	17.76	0.00	0.00	26.00	19.50
46.069	0.472	20.55	86.18	0.00	0.00	26.00	19.50
46.541	0.472	20.55	86.64	0.00	0.00	26.00	19.50
47.013	0.159	20.55	29.26	0.00	0.00	26.00	19.50
47.172	0.472	21.04	87.24	0.00	0.00	26.00	19.50
47.644	0.356	21.04	66.12	0.00	0.00	26.00	19.50
48.000	0.231	21.04	42.99	0.00	0.00	26.00	19.50
48.231	0.472	21.56	87.91	0.00	0.00	26.00	19.50
48.703	0.472	21.56	88.04	0.00	0.00	26.00	19.50
49.175	0.093	21.56	17.42	0.00	0.00	26.00	19.50
49.268	0.472	22.09	88.17	0.00	0.00	26.00	19.50
49.740	0.472	22.09	88.25	0.00	0.00	26.00	19.50
50.212	0.079	22.09	14.86	0.00	0.00	26.00	19.50
50.292	0.472	22.62	88.32	0.00	0.00	26.00	19.50
50.764	0.472	22.62	88.35	0.00	0.00	26.00	19.50
51.236	0.085	22.62	15.82	0.00	0.00	26.00	19.50
51.320	0.472	23.13	88.36	0.00	0.00	26.00	19.50
51.792	0.472	23.13	88.35	0.00	0.00	26.00	19.50
52.264	0.075	23.13	14.08	0.00	0.00	26.00	19.50
52.340	0.472	23.65	88.31	0.00	0.00	26.00	19.50
52.812	0.472	23.65	88.24	0.00	0.00	26.00	19.50
53.284	0.084	23.65	15.74	0.00	0.00	26.00	19.50
53.368	0.132	24.15	24.70	0.00	0.00	26.00	19.50
53.500	0.472	24.15	88.05	0.00	0.00	26.00	19.50
53.972	0.437	24.15	81.25	0.00	0.00	26.00	19.50
54.409	0.472	24.62	87.56	0.00	0.00	26.00	19.50
54.881	0.472	24.62	87.27	0.00	0.00	26.00	19.50
55.353	0.126	24.62	23.17	0.00	0.00	26.00	19.50
55.478	0.472	24.91	86.90	0.00	0.00	26.00	19.50
55.950	0.472	24.91	86.59	0.00	0.00	26.00	19.50
56.422	0.106	24.91	19.32	0.00	0.00	26.00	19.50
56.528	0.472	25.20	86.19	0.00	0.00	26.00	19.50
57.000	0.472	25.20	85.85	0.00	0.00	26.00	19.50
57.472	0.093	25.20	16.90	0.00	0.00	26.00	19.50
57.565	0.472	25.50	85.43	0.00	0.00	26.00	19.50
58.037	0.472	25.50	85.06	0.00	0.00	26.00	19.50
58.509	0.087	25.50	15.67	0.00	0.00	26.00	19.50
58.596	0.472	25.80	84.60	0.00	0.00	26.00	19.50
59.068	0.432	25.80	77.05	0.00	0.00	26.00	19.50
59.500	0.128	25.80	22.75	0.00	0.00	26.00	19.50
59.628	0.472	26.09	83.70	0.00	0.00	26.00	19.50
60.100	0.472	26.09	83.25	0.00	0.00	26.00	19.50
60.572	0.087	26.09	15.31	0.00	0.00	26.00	19.50
60.659	0.472	26.38	82.70	0.00	0.00	26.00	19.50
61.131	0.472	26.38	82.23	0.00	0.00	26.00	19.50
61.603	0.093	26.38	16.10	0.00	0.00	26.00	19.50
61.696	0.472	26.67	81.64	0.00	0.00	26.00	19.50
62.168	0.332	26.67	57.18	0.00	0.00	26.00	19.50
62.500	0.244	26.67	41.86	0.00	0.00	26.00	19.50
62.744	0.472	26.95	80.23	0.00	0.00	26.00	19.50
63.216	0.472	26.95	79.43	0.00	0.00	26.00	19.50
63.688	0.124	26.95	20.75	0.00	0.00	26.00	19.50
63.813	0.472	27.42	78.40	0.00	0.00	26.00	19.50
64.285	0.472	27.42	77.56	0.00	0.00	26.00	19.50
64.757	0.097	27.42	15.82	0.00	0.00	26.00	19.50
64.853	0.472	27.90	76.51	0.00	0.00	26.00	19.50
65.325	0.472	27.90	75.62	0.00	0.00	26.00	19.50
65.797	0.085	27.90	13.52	0.00	0.00	26.00	19.50
65.882	0.118	28.39	18.65	0.00	0.00	26.00	19.50
66.000	0.472	28.39	74.37	0.00	0.00	26.00	19.50
66.472	0.431	28.39	67.21	0.00	0.00	26.00	19.50
66.903	0.472	28.88	72.79	0.00	0.00	26.00	19.50
67.375	0.472	28.88	71.92	0.00	0.00	26.00	19.50
67.847	0.085	28.88	12.87	0.00	0.00	26.00	19.50
67.932	0.472	29.36	70.88	0.00	0.00	26.00	19.50
68.404	0.472	29.36	69.96	0.00	0.00	26.00	19.50
68.876	0.083	29.36	12.23	0.00	0.00	26.00	19.50
68.959	0.472	29.84	68.86	0.00	0.00	26.00	19.50
69.431	0.472	29.84	67.90	0.00	0.00	26.00	19.50
69.903	0.098	29.84	13.93	0.00	0.00	26.00	19.50
70.001	0.472	30.30	66.71	0.00	0.00	26.00	19.50
70.473	0.027	30.30	3.80	0.00	0.00	26.00	19.50
70.500	0.472	30.30	65.48	0.00	0.00	26.00	19.50
70.972	0.096	30.30	13.18	0.00	0.00	26.00	19.50
71.068	0.472	30.73	63.85	0.00	0.00	26.00	19.50
71.540	0.472	30.73	62.47	0.00	0.00	26.00	19.50

72.012	0.170	30.73	22.19	0.00	0.00	26.00	19.50
72.182	0.472	31.92	60.53	0.00	0.00	26.00	19.50
72.654	0.472	31.92	59.02	0.00	0.00	26.00	19.50
73.126	0.091	31.92	11.24	0.00	0.00	26.00	19.50
73.218	0.472	33.21	57.15	0.00	0.00	26.00	19.50
73.690	0.310	33.21	36.67	0.00	0.00	26.00	19.50
74.000	0.228	33.21	26.46	0.00	0.00	26.00	19.50
74.228	0.472	34.53	53.27	0.00	0.00	26.00	19.50
74.700	0.472	34.53	51.20	0.00	0.00	26.00	19.50
75.172	0.041	34.53	4.31	0.00	0.00	26.00	19.50
75.213	0.472	35.80	48.88	0.00	0.00	26.00	19.50
75.685	0.472	35.80	46.66	0.00	0.00	26.00	19.50
76.157	0.075	35.80	7.21	0.00	0.00	26.00	19.50
76.232	0.472	37.41	43.99	0.00	0.00	26.00	19.50
76.704	0.472	37.41	41.58	0.00	0.00	26.00	19.50
77.176	0.162	37.41	13.72	0.00	0.00	26.00	19.50
77.338	0.472	38.65	38.25	0.00	0.00	26.00	19.50
77.810	0.472	38.65	35.68	0.00	0.00	26.00	19.50
78.282	0.318	38.65	22.59	0.00	0.00	26.00	19.50
78.600	0.472	39.75	31.30	0.00	0.00	26.00	19.50
79.072	0.472	39.75	28.58	0.00	0.00	26.00	19.50
79.544	0.472	39.75	25.86	0.00	0.00	26.00	19.50

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

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TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	ht (m)	yt (m)	yt' (--)	E(x) (kN/m)	T(x) (kN/m)	E' (kN)	rho(x) (--)	FS_qFEM (--)	FS_srmFEM (--)
25.889	0.000	153.851	-0.313	0.0000000000E+000	0.0000000000E+000	6.1852635167E-001	0.059	12.989	11.502
26.361	0.095	153.702	-0.313	8.8858496840E-001	2.3745430775E-003	3.1466781332E+000	0.059	12.989	11.502
26.833	0.192	153.556	-0.303	2.9704531595E+000	4.6367767640E-002	7.3394587470E+000	0.059	8.442	7.587
27.305	0.296	153.416	-0.304	7.8170083727E+000	3.6083401951E-001	1.3117391783E+001	0.059	8.109	7.466
27.777	0.393	153.269	-0.283	1.5353225155E+001	1.6706672166E+000	1.8603311480E+001	0.080	8.867	6.997
28.249	0.516	153.149	-0.241	2.5378469387E+001	4.1145194057E+000	2.9137378142E+001	0.147	9.532	6.147
28.721	0.653	153.042	-0.238	4.2858808280E+001	8.1283035171E+000	5.5759108716E+001	0.220	9.812	5.337
29.000	0.726	152.970	-0.233	6.1489490140E+001	1.2285715202E+001	6.4134326450E+001	0.275	9.636	4.852
29.472	0.866	152.867	-0.216	8.9614893796E+001	1.8624708454E+001	6.4186801349E+001	0.328	9.228	4.371
29.908	0.999	152.775	-0.198	1.1941991479E+002	2.5370029034E+001	7.1559300586E+001	0.367	8.646	4.032
30.380	1.139	152.687	-0.173	1.5479612141E+002	3.3511681025E+001	7.8170915131E+001	0.403	7.931	3.744
30.852	1.292	152.611	-0.147	1.9321298545E+002	4.2633722924E+001	8.2793756185E+001	0.435	7.113	3.511
31.324	1.457	152.548	-0.129	2.3295313787E+002	5.2463743804E+001	8.7297519183E+001	0.463	6.306	3.323
31.500	1.521	152.527	-0.107	2.4856190181E+002	5.6485923738E+001	8.7268945176E+001	0.474	6.005	3.259
31.706	1.601	152.507	-0.087	2.6626084655E+002	6.1168042920E+001	8.8308143112E+001	0.485	5.650	3.194
32.178	1.751	152.468	-0.066	3.1056572338E+002	7.3513617596E+001	9.2764936725E+001	0.516	4.886	3.048
32.650	1.917	152.445	-0.042	3.5383062259E+002	8.6396687194E+001	9.2661008040E+001	0.545	4.254	2.923
32.847	1.992	152.440	-0.007	3.7217340053E+002	9.2214548295E+001	9.2106481899E+001	0.558	4.012	2.873

33.319	2.127	152.441	0.016	4.1454968667E+002	1.0644101423E+002	8.9507205541E+001	0.590	3.527	2.760
33.730	2.259	152.454	0.061	4.5124657900E+002	1.1965648725E+002	9.0293615099E+001	0.618	3.174	2.667
34.202	2.368	152.495	0.104	4.9442023727E+002	1.3665261071E+002	8.8770776579E+001	0.655	2.831	2.557
34.668	2.492	152.552	0.134	5.3449424943E+002	1.5345519141E+002	7.7607660138E+001	0.690	2.568	2.458
35.000	2.552	152.602	0.168	5.5827155654E+002	1.6419826775E+002	6.6458276817E+001	0.713	2.434	2.399
35.450	2.648	152.683	0.198	5.8509900725E+002	1.7736991236E+002	5.5880816635E+001	0.739	2.293	2.328
35.922	2.710	152.784	0.220	6.0964434286E+002	1.9033483830E+002	4.5683447211E+001	0.766	2.178	2.262
36.354	2.773	152.882	0.246	6.2687755969E+002	2.0024867419E+002	3.7022084831E+001	0.785	2.106	2.212
36.826	2.817	153.007	0.265	6.4286707516E+002	2.1025319210E+002	3.0827600192E+001	0.807	2.043	2.163
37.000	2.834	153.054	0.278	6.4803055224E+002	2.1362661508E+002	2.8164118227E+001	0.814	2.024	2.147
37.372	2.875	153.158	0.300	6.5727557470E+002	2.2005110817E+002	2.3833160140E+001	0.827	1.988	2.116
37.844	2.916	153.307	0.326	6.6790399923E+002	2.2791666046E+002	2.1065175942E+001	0.843	1.948	2.079
38.316	2.968	153.466	0.335	6.7716102716E+002	2.3520625173E+002	1.7644494670E+001	0.859	1.912	2.046
38.711	3.010	153.597	0.350	6.8347717454E+002	2.4048083607E+002	1.5524277481E+001	0.869	1.887	2.021
39.183	3.067	153.769	0.361	6.9053703535E+002	2.4663065451E+002	1.3914733252E+001	0.882	1.858	1.993
39.655	3.122	153.937	0.363	6.9661263409E+002	2.5211825355E+002	1.2110873713E+001	0.893	1.833	1.968
39.883	3.152	154.023	0.373	6.9929235281E+002	2.5463196622E+002	1.1399248490E+001	0.898	1.821	1.957
40.355	3.204	154.199	0.355	7.0433733516E+002	2.5947444381E+002	9.3873752984E+000	0.908	1.799	1.935
40.827	3.241	154.358	0.343	7.0815400228E+002	2.6335683803E+002	7.4925218005E+000	0.915	1.781	1.917
40.962	3.254	154.407	0.363	7.0914694787E+002	2.6442642980E+002	7.1311190747E+000	0.917	1.775	1.911
41.434	3.294	154.579	0.371	7.1219932450E+002	2.6794139862E+002	5.8212416168E+000	0.924	1.758	1.894
41.906	3.340	154.757	0.380	7.1464217961E+002	2.7115353235E+002	4.5951593308E+000	0.930	1.742	1.877
41.989	3.349	154.790	0.374	7.1501362817E+002	2.7169686799E+002	4.3174514523E+000	0.931	1.740	1.874
42.461	3.382	154.964	0.370	7.1657696714E+002	2.7436797710E+002	2.6903292995E+000	0.937	1.725	1.859
42.933	3.415	155.139	0.370	7.1755328962E+002	2.7670797329E+002	1.1825587833E+000	0.942	1.712	1.845
43.011	3.420	155.168	0.359	7.1763387724E+002	2.7704861240E+002	9.3197985421E-001	0.942	1.710	1.843
43.483	3.437	155.336	0.357	7.1777382346E+002	2.7887317043E+002	-2.3189949931E-001	0.946	1.698	1.831
43.955	3.454	155.504	0.359	7.1741496492E+002	2.8042545764E+002	-1.6166532311E+000	0.950	1.687	1.819
44.009	3.458	155.525	0.358	7.1732222304E+002	2.8059481150E+002	-1.7730027688E+000	0.951	1.686	1.817
44.481	3.465	155.693	0.354	7.1624553261E+002	2.8176348467E+002	-2.9456025490E+000	0.954	1.675	1.806
44.500	3.465	155.699	0.365	7.1618852216E+002	2.8180339267E+002	-2.9979711210E+000	0.954	1.675	1.805
44.972	3.477	155.872	0.370	7.1447879157E+002	2.8267758037E+002	-4.7322959804E+000	0.956	1.664	1.794
45.027	3.481	155.894	0.388	7.1420969404E+002	2.8276616483E+002	-4.8960172937E+000	0.956	1.663	1.792
45.499	3.494	156.076	0.388	7.1176361868E+002	2.8333439649E+002	-5.6894210452E+000	0.958	1.652	1.780
45.971	3.509	156.261	0.401	7.0883890046E+002	2.8365121818E+002	-7.7016039704E+000	0.960	1.642	1.768
46.069	3.518	156.305	0.432	7.0805680258E+002	2.8366948378E+002	-8.0484434085E+000	0.960	1.639	1.765
46.541	3.544	156.507	0.432	7.0417672267E+002	2.8358630635E+002	-8.6985662814E+000	0.962	1.628	1.750
47.013	3.572	156.712	0.452	6.9984538641E+002	2.8323400268E+002	-1.0847264533E+001	0.963	1.617	1.736
47.172	3.592	156.792	0.471	6.9803319799E+002	2.8299505391E+002	-1.1332334563E+001	0.963	1.612	1.730
47.644	3.628	157.009	0.448	6.9279253659E+002	2.8212071487E+002	-1.1101219480E+001	0.963		

1.601	1.714						
48.000	3.644	157.163	0.448	6.8883845415E+002	2.8130188705E+002	-1.2273973510E+001	0.963
1.593	1.703						
48.231	3.665	157.272	0.439	6.8582588794E+002	2.8055941947E+002	-1.2773810218E+001	0.963
1.588	1.696						
48.703	3.677	157.471	0.418	6.8004915750E+002	2.7894658875E+002	-1.2640426198E+001	0.962
1.578	1.682						
49.175	3.687	157.667	0.414	6.7389336979E+002	2.7705367451E+002	-1.4430324613E+001	0.961
1.570	1.669						
49.268	3.688	157.705	0.412	6.7252091466E+002	2.7661006780E+002	-1.4511771376E+001	0.960
1.568	1.667						
49.740	3.692	157.900	0.413	6.6613227479E+002	2.7440625294E+002	-1.3970369281E+001	0.958
1.560	1.656						
50.212	3.695	158.095	0.413	6.5933293489E+002	2.7194261086E+002	-1.7386517923E+001	0.956
1.553	1.645						
50.292	3.695	158.128	0.418	6.5791161528E+002	2.7141135307E+002	-1.7610870948E+001	0.955
1.552	1.643						
50.764	3.697	158.326	0.419	6.5037732247E+002	2.6851290367E+002	-1.6073867479E+001	0.952
1.546	1.634						
51.236	3.698	158.524	0.419	6.4273794056E+002	2.6550650619E+002	-1.6256996864E+001	0.948
1.540	1.625						
51.320	3.698	158.559	0.425	6.4136310642E+002	2.6495779412E+002	-1.6156425546E+001	0.947
1.539	1.624						
51.792	3.698	158.760	0.423	6.3403634192E+002	2.6199151368E+002	-1.5899750332E+001	0.944
1.535	1.617						
52.264	3.694	158.958	0.422	6.2635379768E+002	2.5881186171E+002	-1.8037792713E+001	0.939
1.531	1.611						
52.340	3.695	158.991	0.406	6.2497611642E+002	2.5823000263E+002	-1.8160685648E+001	0.939
1.530	1.610						
52.812	3.678	159.180	0.399	6.1687152888E+002	2.5476205232E+002	-1.7301767890E+001	0.934
1.526	1.604						
53.284	3.658	159.368	0.404	6.0864330801E+002	2.5115610476E+002	-1.9533395707E+001	0.929
1.523	1.598						
53.368	3.659	159.405	0.444	6.0696681336E+002	2.5040382366E+002	-1.9956236465E+001	0.927
1.522	1.597						
53.500	3.658	159.464	0.413	6.0431847681E+002	2.4921082574E+002	-1.9737679636E+001	0.926
1.521	1.595						
53.972	3.637	159.655	0.420	5.9549773984E+002	2.4515462584E+002	-1.9655471405E+001	0.920
1.519	1.589						
54.409	3.632	159.845	0.442	5.8652296044E+002	2.4094735270E+002	-2.0988945123E+001	0.914
1.516	1.583						
54.881	3.627	160.056	0.445	5.7639258159E+002	2.3610931387E+002	-2.1527874144E+001	0.906
1.514	1.577						
55.353	3.620	160.266	0.454	5.6620072249E+002	2.3118277233E+002	-2.3860172179E+001	0.898
1.512	1.571						
55.478	3.625	160.328	0.458	5.6312835955E+002	2.2969179554E+002	-2.3994800936E+001	0.895
1.512	1.569						
55.950	3.617	160.539	0.449	5.5263413996E+002	2.2456725767E+002	-2.2458807660E+001	0.887
1.510	1.563						
56.422	3.611	160.752	0.460	5.4192732362E+002	2.1933282299E+002	-2.4653087353E+001	0.878
1.509	1.557						
56.528	3.614	160.805	0.434	5.3927904251E+002	2.1804227801E+002	-2.4419042312E+001	0.875
1.509	1.555						
57.000	3.590	161.003	0.412	5.2917674972E+002	2.1313810398E+002	-2.1079967766E+001	0.867
1.509	1.550						
57.472	3.559	161.193	0.408	5.1937962662E+002	2.0840912205E+002	-2.2056589900E+001	0.858
1.508	1.546						
57.565	3.555	161.234	0.420	5.1730116009E+002	2.0740936332E+002	-2.2216465369E+001	0.856
1.508	1.545						
58.037	3.527	161.431	0.423	5.0704620938E+002	2.0249114525E+002	-2.2010614302E+001	0.848
1.509	1.541						
58.509	3.504	161.632	0.434	4.9652321712E+002	1.9746100021E+002	-2.4359565871E+001	0.838
1.509	1.537						
58.596	3.503	161.674	0.431	4.9436566245E+002	1.9643082208E+002	-2.4365889363E+001	0.836
1.509	1.536						
59.068	3.475	161.874	0.430	4.8382353097E+002	1.9141451343E+002	-2.2744794318E+001	0.827
1.510	1.532						
59.500	3.455	162.062	0.444	4.7384006848E+002	1.8666934672E+002	-2.4571990111E+001	0.818
1.510	1.529						
59.628	3.453	162.122	0.436	4.7064352139E+002	1.8514949099E+002	-2.4531432289E+001	0.814
1.511	1.528						
60.100	3.423	162.323	0.425	4.5988471058E+002	1.8003136545E+002	-2.2780313320E+001	0.804
1.512	1.525						
60.572	3.392	162.523	0.431	4.4913898523E+002	1.7489897571E+002	-2.5042920315E+001	0.794
1.513	1.522						
60.659	3.390	162.564	0.434	4.4692167231E+002	1.7383349834E+002	-2.5104808498E+001	0.792
1.513	1.521						
61.131	3.358	162.766	0.425	4.3598840352E+002	1.6856944260E+002	-2.3097744814E+001	0.780
1.515	1.518						

61.603	3.323	162.965	0.431	4.2511748194E+002	1.6331223517E+002	-2.5539215340E+001	0.769
1.516	1.516						
61.696	3.321	163.009	0.436	4.2270342955E+002	1.6213968790E+002	-2.5635494066E+001	0.766
1.517	1.515						
62.168	3.286	163.211	0.422	4.1155576766E+002	1.5670846392E+002	-2.3250357757E+001	0.753
1.519	1.513						
62.500	3.256	163.349	0.437	4.0391471975E+002	1.5297388166E+002	-2.4792973471E+001	0.744
1.520	1.511						
62.744	3.248	163.463	0.460	3.9752983875E+002	1.4985352362E+002	-2.5969070618E+001	0.737
1.521	1.510						
63.216	3.223	163.678	0.451	3.8540829530E+002	1.4393197718E+002	-2.5450546404E+001	0.723
1.524	1.509						
63.688	3.194	163.889	0.449	3.7350461190E+002	1.3814496402E+002	-2.5936270487E+001	0.709
1.526	1.507						
63.813	3.188	163.946	0.421	3.7026279688E+002	1.3657907105E+002	-2.5543031649E+001	0.705
1.527	1.507						
64.285	3.137	164.140	0.413	3.5925071279E+002	1.3129919498E+002	-2.3497028536E+001	0.692
1.529	1.506						
64.757	3.088	164.336	0.423	3.4808168407E+002	1.2599339036E+002	-2.5692660182E+001	0.679
1.531	1.505						
64.853	3.083	164.381	0.418	3.4555140692E+002	1.2479856319E+002	-2.5625926341E+001	0.676
1.531	1.505						
65.325	3.026	164.574	0.414	3.3456728677E+002	1.1966295478E+002	-2.3455036781E+001	0.663
1.533	1.504						
65.797	2.973	164.771	0.417	3.2340993418E+002	1.1448846418E+002	-2.3458481810E+001	0.649
1.534	1.502						
65.882	2.964	164.807	0.416	3.2141910455E+002	1.1357276834E+002	-2.3427061611E+001	0.646
1.534	1.501						
66.000	2.949	164.856	0.419	3.1866476569E+002	1.1230636856E+002	-2.3446817144E+001	0.643
1.534	1.501						
66.472	2.892	165.054	0.439	3.0756309530E+002	1.0723148303E+002	-2.4605007368E+001	0.628
1.535	1.498						
66.903	2.857	165.252	0.469	2.9652960777E+002	1.0222412899E+002	-2.6024006247E+001	0.613
1.535	1.494						
67.375	2.823	165.477	0.489	2.8402482095E+002	9.6609003799E+001	-2.7015014087E+001	0.595
1.535	1.489						
67.847	2.798	165.713	0.506	2.7102752890E+002	9.0853628652E+001	-2.9423982923E+001	0.576
1.535	1.484						
67.932	2.797	165.759	0.501	2.6849637797E+002	8.9747911622E+001	-2.9352761466E+001	0.572
1.535	1.483						
68.404	2.764	165.992	0.483	2.5571928230E+002	8.4219451442E+001	-2.6449041101E+001	0.553
1.535	1.477						
68.876	2.722	166.215	0.478	2.4352857562E+002	7.9033643063E+001	-2.7530472822E+001	0.535
1.535	1.472						
68.959	2.717	166.257	0.461	2.4121555004E+002	7.8065256538E+001	-2.7359293512E+001	0.531
1.535	1.472						
69.431	2.660	166.471	0.428	2.2956448801E+002	7.3272890710E+001	-2.3326461997E+001	0.514
1.535	1.468						
69.903	2.580	166.661	0.408	2.1919545144E+002	6.9113494498E+001	-2.3157597252E+001	0.498
1.536	1.465						
70.001	2.566	166.703	0.422	2.1690891813E+002	6.8207495599E+001	-2.3294113452E+001	0.495
1.536	1.464						
70.473	2.488	166.902	0.421	2.0616415056E+002	6.3982702255E+001	-2.3409941145E+001	0.479
1.536	1.462						
70.500	2.484	166.913	0.438	2.0552899036E+002	6.3733973294E+001	-2.3459445065E+001	0.478
1.536	1.462						
70.972	2.415	167.120	0.447	1.9435373540E+002	5.9379961701E+001	-2.5857477017E+001	0.461
1.536	1.460						
71.068	2.406	167.167	0.451	1.9182303328E+002	5.8397212281E+001	-2.5869031580E+001	0.457
1.536	1.459						
71.540	2.334	167.376	0.451	1.8061557092E+002	5.4071509198E+001	-2.4125163577E+001	0.439
1.535	1.458						
72.012	2.270	167.593	0.475	1.6904896319E+002	4.9633593288E+001	-2.6702725334E+001	0.420
1.534	1.457						
72.182	2.257	167.681	0.484	1.6436855779E+002	4.7849407363E+001	-2.6801381735E+001	0.411
1.533	1.457						
72.654	2.186	167.904	0.486	1.5262626898E+002	4.3396567322E+001	-2.5515063266E+001	0.390
1.531	1.457						
73.126	2.128	168.140	0.505	1.4028242724E+002	3.8763402409E+001	-2.7377958596E+001	0.365
1.529	1.458						
73.218	2.119	168.188	0.500	1.3776095679E+002	3.7826611154E+001	-2.7276355515E+001	0.360
1.529	1.459						
73.690	2.044	168.421	0.481	1.2571297339E+002	3.3408923269E+001	-2.4344084314E+001	0.334
1.527	1.462						
74.000	1.984	168.564	0.481	1.1840093842E+002	3.0776524119E+001	-2.4737229445E+001	0.318
1.527	1.464						
74.228	1.950	168.680	0.476	1.1256340206E+002	2.8711317427E+001	-2.4724966279E+001	0.305
1.527	1.467						
74.700	1.842	168.897	0.460	1.0174515787E+002	2.4969733726E+001	-2.2664616104E+001	0.282

1.528	1.474						
75.172	1.734	169.114	0.460	9.1168083674E+001	2.1393107781E+001	-2.2868597465E+001	0.257
1.532	1.482						
75.213	1.726	169.133	0.467	9.0238407991E+001	2.1082601329E+001	-2.2824506938E+001	0.255
1.532	1.483						
75.685	1.605	169.353	0.470	7.9924182537E+001	1.7727445970E+001	-2.1613500395E+001	0.229
1.539	1.495						
76.157	1.488	169.577	0.472	6.9835339162E+001	1.4561837041E+001	-2.0607974875E+001	0.202
1.549	1.510						
76.232	1.469	169.611	0.483	6.8298842008E+001	1.4087724562E+001	-2.0492030921E+001	0.198
1.551	1.513						
76.704	1.337	169.841	0.497	5.8609119191E+001	1.1226819015E+001	-2.1142836774E+001	0.171
1.563	1.531						
77.176	1.216	170.081	0.508	4.8340077992E+001	8.1517454209E+000	-2.1020632488E+001	0.136
1.580	1.553						
77.338	1.174	170.163	0.535	4.4974861659E+001	7.1821754160E+000	-2.0826668607E+001	0.123
1.587	1.563						
77.810	1.054	170.420	0.557	3.5064046687E+001	4.4800060378E+000	-2.0397031645E+001	0.085
1.616	1.595						
78.282	0.945	170.689	0.591	2.5720135078E+001	2.2413347870E+000	-1.9441703256E+001	0.059
1.657	1.636						
78.600	0.889	170.887	0.591	1.9611568666E+001	1.0624837522E+000	-1.7447259927E+001	0.059
1.691	1.670						
79.072	0.765	171.156	0.652	1.2605794265E+001	3.1207161441E-001	-1.5353721970E+001	0.059
1.768	1.747						
79.544	0.719	171.502	0.652	5.1177087914E+000	3.6922622478E-002	-1.3353645063E+001	0.059
1.882	1.852						

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)
25.889	0.472	0.531	-27.317	-1.488	-0.790	21.001	11.156
26.361	0.472	0.531	-27.317	-4.463	-2.371	24.088	12.797
26.833	0.472	0.531	-27.317	-7.438	-3.951	27.711	14.721
27.305	0.472	0.531	-27.317	-10.413	-5.532	33.029	17.547
27.777	0.472	0.531	-27.317	-13.388	-7.112	38.672	20.544
28.249	0.472	0.531	-27.317	-16.363	-8.693	45.334	24.083
28.721	0.279	0.314	-27.317	-18.729	-5.877	54.785	17.192
29.000	0.472	0.531	-27.317	-21.174	-11.248	55.607	29.541
29.472	0.436	0.490	-27.317	-24.185	-11.856	60.904	29.856
29.908	0.472	0.524	-25.790	-25.978	-13.618	66.220	34.713
30.380	0.472	0.524	-25.790	-28.858	-15.128	71.579	37.522
30.852	0.472	0.524	-25.790	-31.738	-16.638	76.310	40.003
31.324	0.176	0.196	-25.790	-33.717	-6.608	80.579	15.792
31.500	0.206	0.229	-25.790	-34.931	-7.995	81.805	18.724
31.706	0.472	0.509	-21.858	-32.280	-16.416	88.699	45.109
32.178	0.472	0.509	-21.858	-34.725	-17.660	93.074	47.334
32.650	0.197	0.212	-21.858	-36.459	-7.741	97.637	20.732
32.847	0.472	0.491	-16.011	-28.396	-13.944	100.422	49.312
33.319	0.411	0.428	-16.011	-29.857	-12.769	105.006	44.908
33.730	0.472	0.477	-8.230	-15.086	-7.195	107.418	51.229
34.202	0.465	0.470	-8.230	-15.679	-7.373	109.914	51.685
34.668	0.332	0.333	-1.831	-0.960	-0.319	104.222	34.660
35.000	0.450	0.451	-1.831	-0.984	-0.443	104.238	46.960
35.450	0.472	0.474	4.737	15.513	7.347	98.814	46.800
35.922	0.432	0.433	4.737	15.838	6.864	98.752	42.797
36.354	0.472	0.479	9.663	28.553	13.671	94.375	45.186
36.826	0.174	0.176	9.663	28.856	5.088	94.804	16.717
37.000	0.372	0.377	9.663	29.129	10.984	95.094	35.860
37.372	0.472	0.484	12.802	37.296	18.052	92.591	44.817
37.844	0.472	0.484	12.802	37.778	18.286	93.416	45.216
38.316	0.395	0.405	12.802	38.220	15.474	94.094	38.095

38.711	0.472	0.486	13.617	40.674	19.753	94.027	45.664
39.183	0.472	0.486	13.617	41.145	19.982	94.801	46.040
39.655	0.228	0.235	13.617	41.494	9.743	95.399	22.400
39.883	0.472	0.488	14.602	44.296	21.605	94.948	46.311
40.355	0.472	0.488	14.602	44.747	21.826	95.660	46.659
40.827	0.136	0.140	14.602	45.038	6.312	96.145	13.474
40.962	0.472	0.490	15.654	47.952	23.505	95.545	46.834
41.434	0.472	0.490	15.654	48.377	23.713	96.223	47.167
41.906	0.083	0.086	15.654	48.626	4.174	96.621	8.295
41.989	0.472	0.493	16.755	51.603	25.436	95.887	47.265
42.461	0.472	0.493	16.755	51.992	25.628	96.492	47.563
42.933	0.078	0.081	16.755	52.219	4.239	96.852	7.863
43.011	0.472	0.496	17.760	54.909	27.214	96.170	47.663
43.483	0.472	0.496	17.760	55.260	27.388	96.701	47.927
43.955	0.054	0.057	17.760	55.455	3.149	96.985	5.508
44.009	0.472	0.498	18.756	58.057	28.940	96.264	47.985
44.481	0.019	0.020	18.756	58.216	1.179	96.514	1.955
44.500	0.472	0.498	18.756	58.437	29.129	96.830	48.267
44.972	0.055	0.058	18.756	58.677	3.429	97.174	5.679
45.027	0.472	0.501	19.695	61.155	30.659	96.537	48.396
45.499	0.472	0.501	19.695	61.542	30.852	97.093	48.675
45.971	0.098	0.104	19.695	61.775	6.404	97.449	10.103
46.069	0.472	0.504	20.550	64.016	32.269	96.875	48.832
46.541	0.472	0.504	20.550	64.359	32.442	97.376	49.085
47.013	0.159	0.170	20.550	64.588	10.956	97.768	16.584
47.172	0.472	0.506	21.041	65.959	33.357	97.576	49.346
47.644	0.356	0.382	21.041	66.236	25.281	97.976	37.396
48.000	0.231	0.248	21.041	66.387	16.438	98.307	24.342
48.231	0.472	0.508	21.559	67.678	34.347	97.916	49.693
48.703	0.472	0.508	21.559	67.777	34.397	98.137	49.805
49.175	0.093	0.100	21.559	67.837	6.808	98.340	9.869
49.268	0.472	0.509	22.087	69.094	35.195	97.846	49.841
49.740	0.472	0.509	22.087	69.157	35.227	98.024	49.932
50.212	0.079	0.086	22.087	69.194	5.933	98.352	8.433
50.292	0.472	0.511	22.616	70.409	36.001	97.748	49.980
50.764	0.472	0.511	22.616	70.435	36.014	97.824	50.019
51.236	0.085	0.092	22.616	70.450	6.449	97.867	8.959
51.320	0.472	0.513	23.134	71.597	36.749	97.302	49.942
51.792	0.472	0.513	23.134	71.583	36.742	97.389	49.987
52.264	0.075	0.082	23.134	71.576	5.854	97.606	7.983
52.340	0.472	0.515	23.648	72.668	37.443	96.982	49.972
52.812	0.472	0.515	23.648	72.615	37.416	96.996	49.979
53.284	0.084	0.092	23.648	72.584	6.673	97.272	8.942
53.368	0.132	0.145	24.147	73.628	10.668	96.796	14.024
53.500	0.472	0.517	24.147	73.514	38.026	96.573	49.953
53.972	0.437	0.479	24.147	73.321	35.091	96.638	46.250
54.409	0.472	0.519	24.621	74.093	38.470	96.131	49.911
54.881	0.472	0.519	24.621	73.852	38.344	95.939	49.812
55.353	0.126	0.138	24.621	73.699	10.182	96.166	13.285
55.478	0.472	0.520	24.908	74.115	38.570	95.467	49.681
55.950	0.472	0.520	24.908	73.848	38.431	95.267	49.577
56.422	0.106	0.116	24.908	73.685	8.574	95.416	11.103
56.528	0.472	0.522	25.202	74.092	38.651	94.465	49.278
57.000	0.472	0.522	25.202	73.799	38.498	94.076	49.075
57.472	0.093	0.103	25.202	73.624	7.580	94.105	9.688
57.565	0.472	0.523	25.499	74.012	38.703	93.554	48.923
58.037	0.472	0.523	25.499	73.691	38.536	93.315	48.798
58.509	0.087	0.097	25.499	73.502	7.101	93.465	9.030
58.596	0.472	0.524	25.796	73.862	38.722	92.651	48.572
59.068	0.432	0.480	25.796	73.529	35.266	92.442	44.336
59.500	0.128	0.142	25.796	73.320	10.412	92.510	13.137
59.628	0.472	0.526	26.092	73.620	38.692	91.692	48.190
60.100	0.472	0.526	26.092	73.225	38.484	91.331	48.000
60.572	0.087	0.097	26.092	72.990	7.077	91.524	8.874
60.659	0.472	0.527	26.384	73.270	38.605	90.696	47.786
61.131	0.472	0.527	26.384	72.847	38.381	90.299	47.577
61.603	0.093	0.104	26.384	72.593	7.515	90.532	9.372
61.696	0.472	0.528	26.671	72.830	38.469	89.673	47.365
62.168	0.332	0.372	26.671	72.445	26.943	89.236	33.188
62.500	0.244	0.274	26.671	72.108	19.726	89.413	24.461
62.744	0.472	0.529	26.948	72.045	38.147	88.614	46.920
63.216	0.472	0.529	26.948	71.328	37.768	87.874	46.529
63.688	0.124	0.139	26.948	70.875	9.866	87.582	12.192
63.813	0.472	0.532	27.417	71.166	37.841	86.271	45.872
64.285	0.472	0.532	27.417	70.399	37.433	85.610	45.521
64.757	0.097	0.109	27.417	69.937	7.635	85.567	9.342
64.853	0.472	0.534	27.901	70.202	37.494	84.222	44.981
65.325	0.472	0.534	27.901	69.383	37.056	83.539	44.616
65.797	0.085	0.096	27.901	68.899	6.625	83.054	7.987

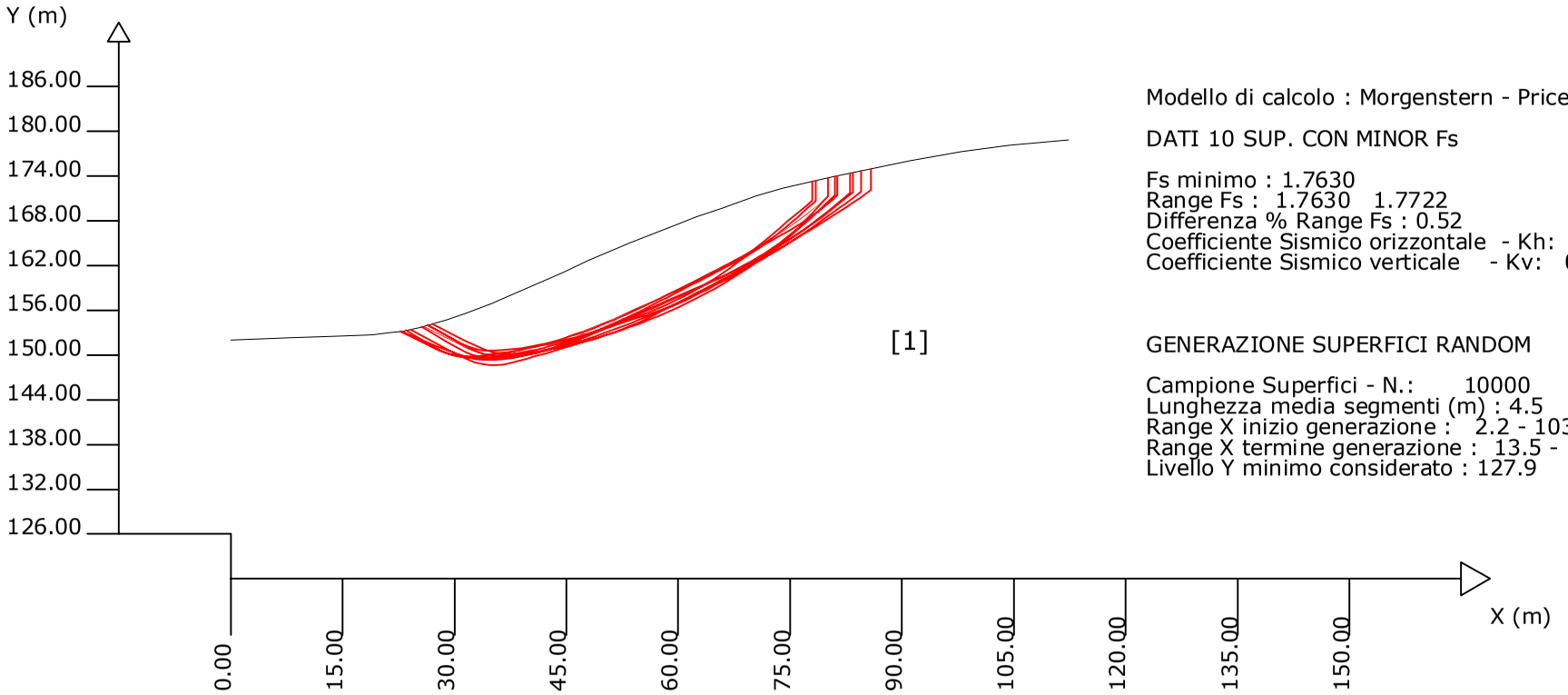
65.882	0.118	0.134	28.390	69.442	9.280	82.463	11.020
66.000	0.472	0.537	28.390	68.955	36.996	82.042	44.018
66.472	0.431	0.490	28.390	68.233	33.435	81.739	40.052
66.903	0.472	0.539	28.875	68.166	36.742	80.799	43.551
67.375	0.472	0.539	28.875	67.357	36.306	80.234	43.247
67.847	0.085	0.097	28.875	66.880	6.495	80.136	7.782
67.932	0.472	0.542	29.364	67.027	36.300	78.834	42.695
68.404	0.472	0.542	29.364	66.162	35.832	77.848	42.161
68.876	0.083	0.095	29.364	65.654	6.261	77.687	7.409
68.959	0.472	0.544	29.843	65.719	35.761	76.272	41.504
69.431	0.472	0.544	29.843	64.799	35.261	75.005	40.814
69.903	0.098	0.113	29.843	64.244	7.236	74.740	8.418
70.001	0.472	0.547	30.304	64.207	35.102	73.755	40.321
70.473	0.027	0.031	30.304	63.692	1.998	73.442	2.304
70.500	0.472	0.547	30.304	63.022	34.454	72.931	39.871
70.972	0.096	0.111	30.304	62.248	6.937	72.721	8.104
71.068	0.472	0.549	30.733	61.922	34.002	71.319	39.162
71.540	0.472	0.549	30.733	60.583	33.267	70.379	38.646
72.012	0.170	0.198	30.733	59.673	11.818	70.120	13.886
72.182	0.472	0.556	31.923	59.864	33.291	68.006	37.818
72.654	0.472	0.556	31.923	58.372	32.461	67.068	37.297
73.126	0.091	0.108	31.923	57.482	6.184	66.604	7.165
73.218	0.472	0.564	33.208	57.601	32.494	64.529	36.403
73.690	0.310	0.371	33.208	56.222	20.848	63.147	23.416
74.000	0.228	0.273	33.208	55.208	15.048	62.697	17.089
74.228	0.472	0.573	34.530	54.623	31.296	60.122	34.446
74.700	0.472	0.573	34.530	52.501	30.080	58.523	33.530
75.172	0.041	0.049	34.530	51.349	2.529	57.785	2.847
75.213	0.472	0.582	35.802	50.839	29.587	55.792	32.469
75.685	0.472	0.582	35.802	48.530	28.243	54.103	31.486
76.157	0.075	0.092	35.802	47.192	4.364	53.046	4.905
76.232	0.472	0.594	37.409	46.445	27.599	50.924	30.260
76.704	0.472	0.594	37.409	43.894	26.083	49.625	29.488
77.176	0.162	0.204	37.409	42.181	8.605	48.299	9.853
77.338	0.472	0.604	38.655	40.765	24.639	46.343	28.010
77.810	0.472	0.604	38.655	38.022	22.981	44.200	26.715
78.282	0.318	0.407	38.655	35.725	14.553	42.286	17.226
78.600	0.472	0.614	39.747	33.576	20.611	39.140	24.027
79.072	0.472	0.614	39.747	30.660	18.822	36.932	22.672
79.544	0.472	0.614	39.747	27.745	17.032	35.014	21.495

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 : 14/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Morgenstern - Price (1965)

DATI 10 SUP. CON MINOR Fs

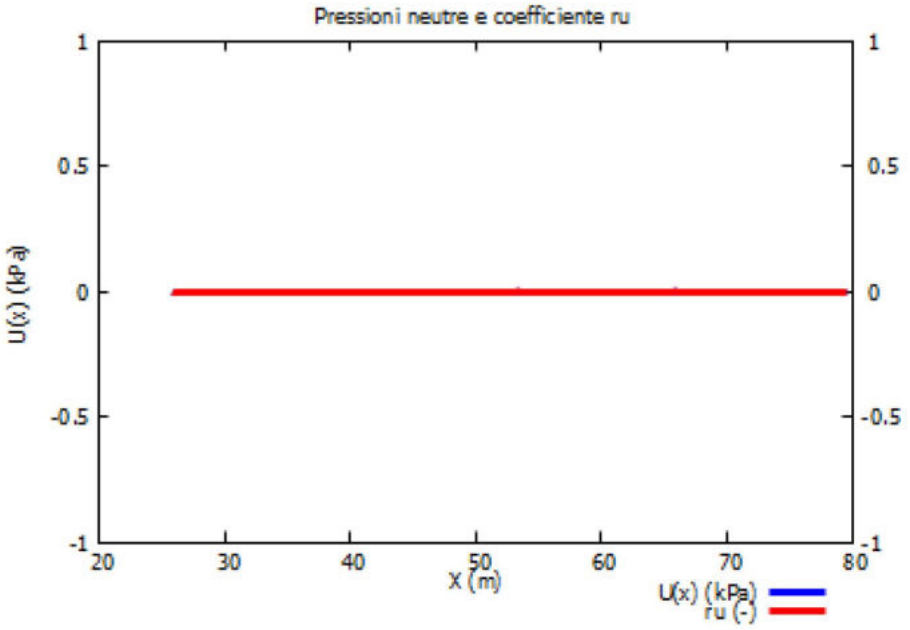
Fs minimo : 1.7630
Range Fs : 1.7630 1.7722
Differenza % Range Fs : 0.52
Coefficiente Sismico orizzontale - Kh: 0.0250
Coefficiente Sismico verticale - Kv: 0.0125

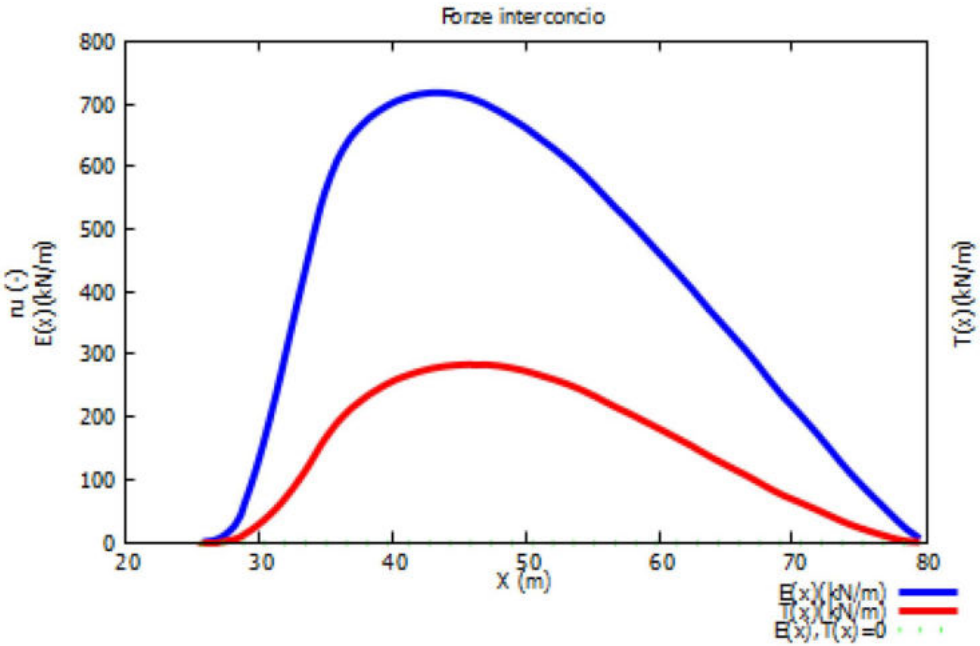
GENERAZIONE SUPERFICI RANDOM

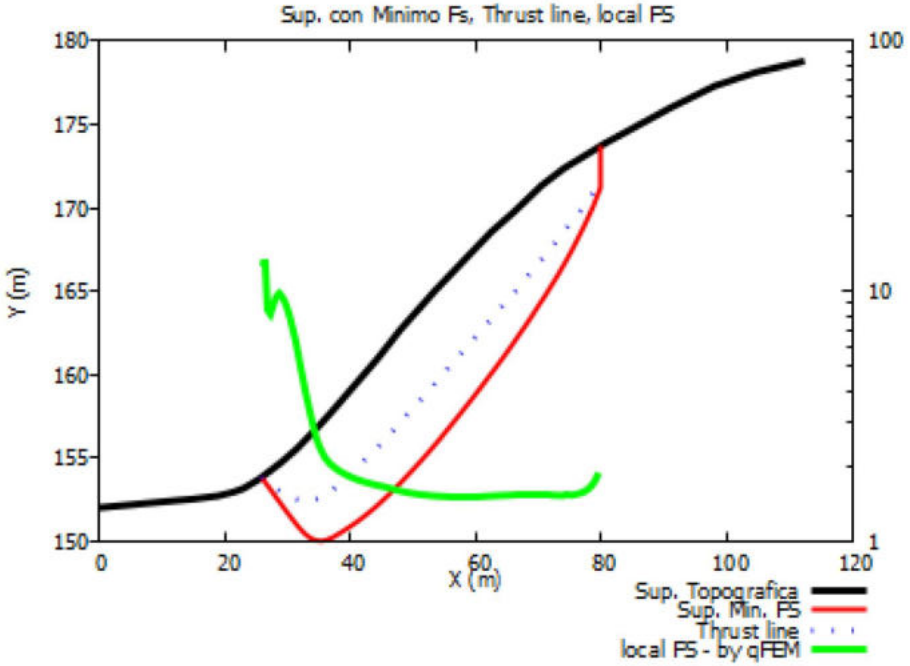
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 4.5
Range X inizio generazione : 2.2 - 103.4
Range X termine generazione : 13.5 - 110.1
Livello Y minimo considerato : 127.9

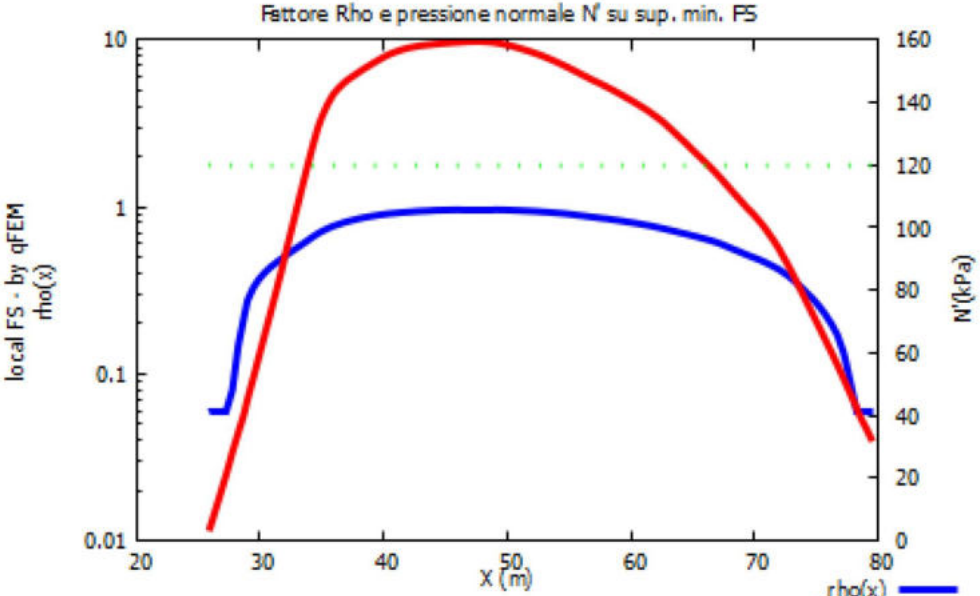
Parametri Geotecnici degli strati # ----------

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





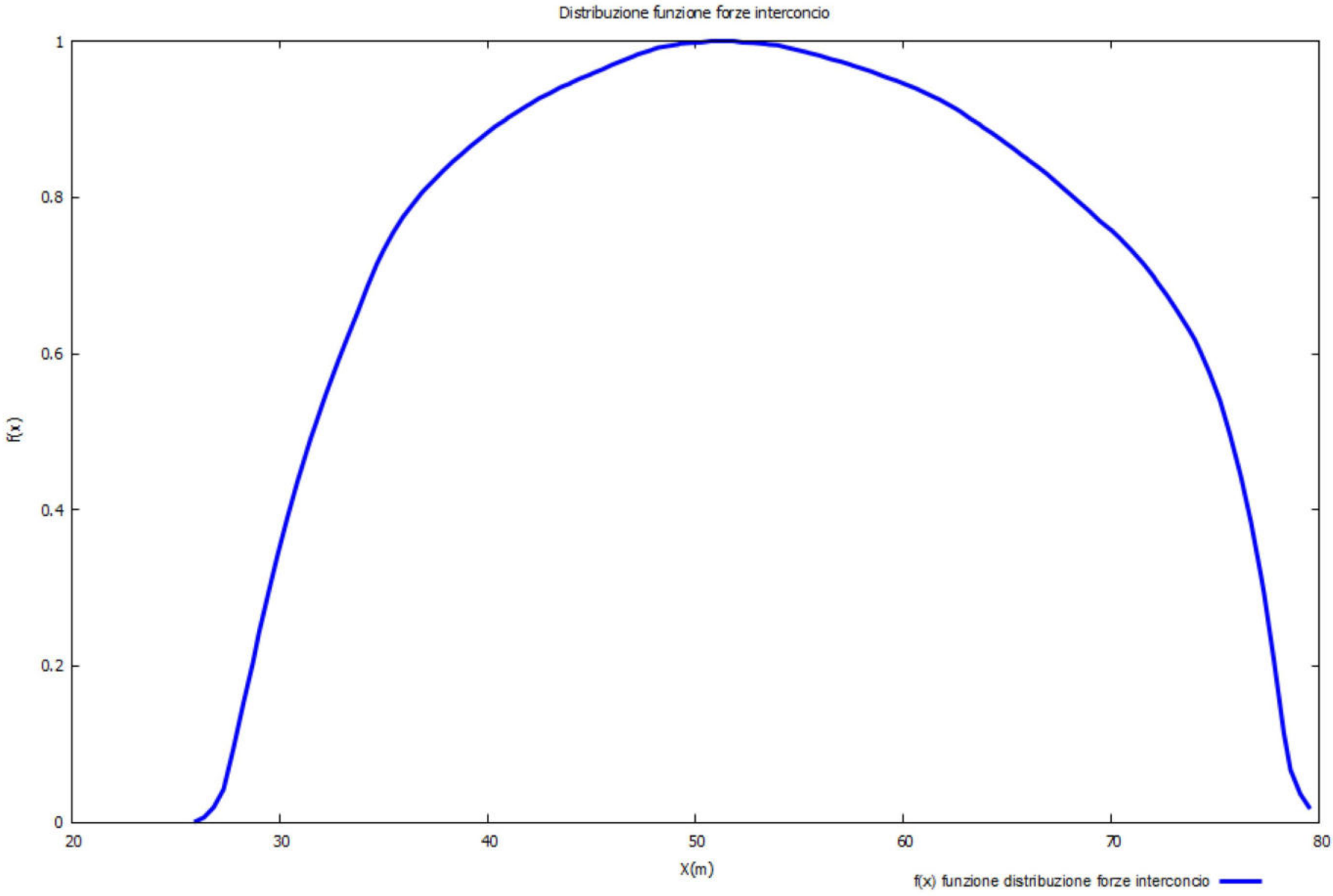


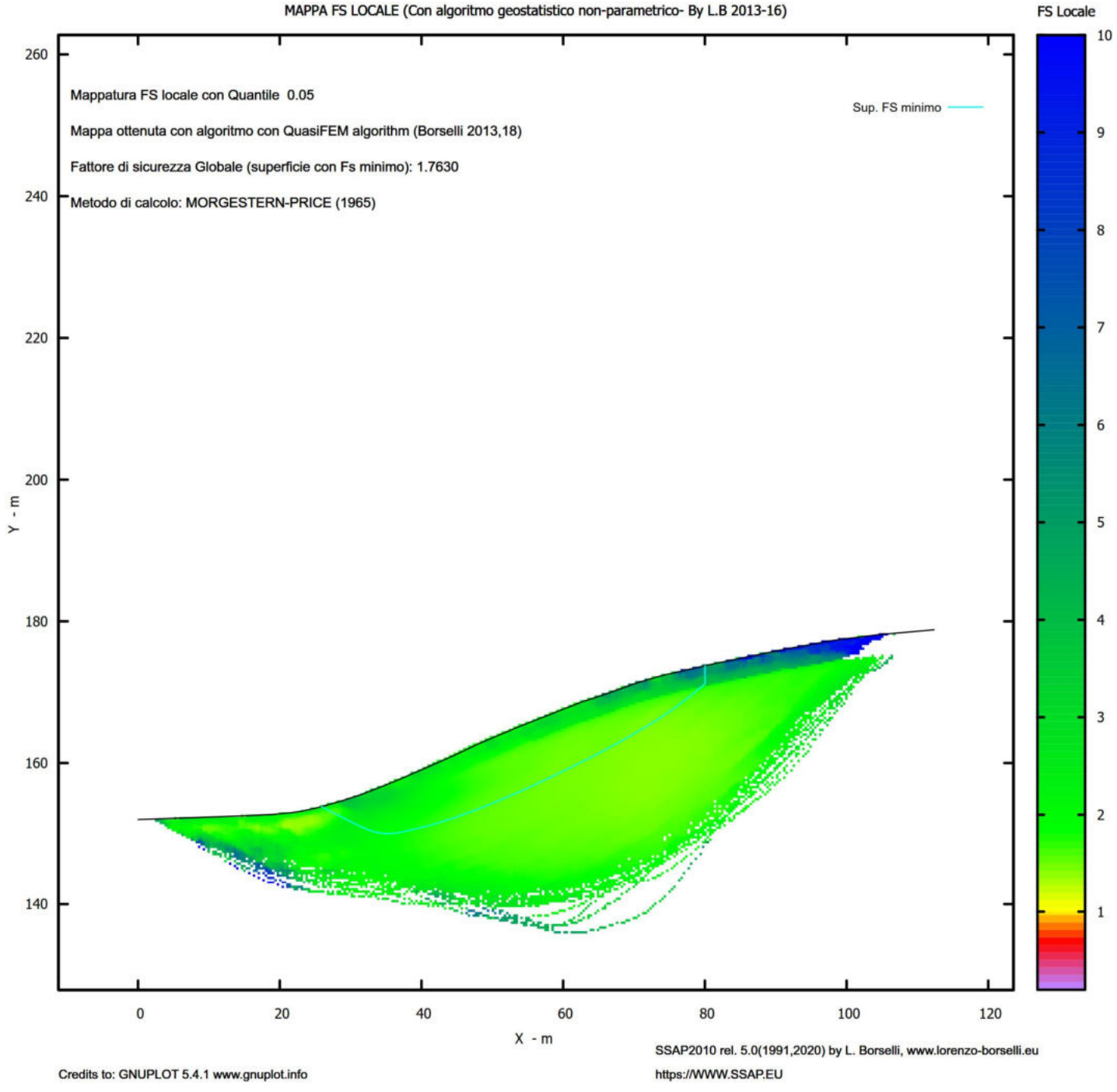


Metodo di calcolo: MORGESTERN-PRICE (1965)

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

14/11/21 11:23




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): 1.7630
Metodo di calcolo: MORGESTERN-PRICE (1965)
Sup. FS minimo
Y - m
X - m
260
240
220
200
180
160
140
0
20
40
60
80
100
120
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

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---------------------------------------------------------------------
    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\MIADONNA\VERIFICA1\DRENATA\BERSELLI\BERSELLI.txt
           Data: 14/11/2021
    Localita' :
    Descrizione:
 Modello pendio: VERIFICA1DRENATA.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  152.03     -       -       -       -       -       -
         8.00  152.31     -       -       -       -       -       -
        15.00  152.55     -       -       -       -       -       -
        19.00  152.74     -       -       -       -       -       -
        21.50  152.98     -       -       -       -       -       -
        23.00  153.18     -       -       -       -       -       -
        25.50  153.74     -       -       -       -       -       -
        29.00  154.74     -       -       -       -       -       -
        31.50  155.56     -       -       -       -       -       -
        35.00  156.92     -       -       -       -       -       -
        37.00  157.75     -       -       -       -       -       -
        44.50  161.03     -       -       -       -       -       -
        48.00  162.70     -       -       -       -       -       -
        53.50  165.03     -       -       -       -       -       -
        59.50  167.40     -       -       -       -       -       -
        62.50  168.57     -       -       -       -       -       -
        66.00  169.73     -       -       -       -       -       -
        70.50  171.35     -       -       -       -       -       -
        74.00  172.36     -       -       -       -       -       -
        80.50  173.85     -       -       -       -       -       -
        91.00  176.00     -       -       -       -       -       -
        98.00  177.30     -       -       -       -       -       -
       104.50  178.11     -       -       -       -       -       -
       112.34  178.80     -       -       -       -       -       -
  ## ASSENZA DI FALDA ##

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

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

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

  ------------ INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
  *** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
      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): 4.5 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 2.25 103.35
LIVELLO MINIMO CONSIDERATO (Ymin): 127.94
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 13.48 110.09

*** 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 : 0.0250
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0125
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) 1.7601 - Min. - X Y Lambda= 0.2896

X	Y
24.74	153.57
28.14	151.62
29.68	150.79
30.68	150.33
31.46	150.05
32.28	149.86
32.97	149.77
33.75	149.75
34.61	149.80
35.70	149.92
36.70	150.04
37.64	150.15
38.55	150.26
39.44	150.38
40.33	150.50
41.23	150.62
42.14	150.75
43.09	150.89
43.97	151.04
44.84	151.20
45.69	151.38
46.56	151.58
47.41	151.80
48.28	152.04
49.18	152.30
50.14	152.60
51.05	152.90
51.94	153.20
52.81	153.51
53.70	153.84
54.56	154.17
55.44	154.51
56.34	154.88
57.27	155.26
58.17	155.65
59.06	156.03
59.94	156.42
60.83	156.82
61.71	157.22
62.60	157.63
63.50	158.05
64.41	158.49
65.31	158.93
66.19	159.37
67.07	159.81
67.96	160.26
68.84	160.72
69.73	161.20
70.64	161.69
71.57	162.20
72.46	162.70
73.34	163.22

74.21	163.74
75.08	164.29
75.95	164.85
76.84	165.43
77.75	166.05
78.71	166.73
79.61	167.38
80.48	168.04
81.34	168.71
82.21	169.43
83.17	170.25
84.26	171.23
85.28	172.17
85.28	174.83

Fattore di sicurezza (FS) 1.7627 - N.2 -- X Y Lambda= 0.2859

24.10	153.43
27.44	151.49
28.98	150.63
29.99	150.15
30.81	149.82
31.64	149.59
32.37	149.44
33.18	149.36
34.07	149.32
35.19	149.34
36.16	149.37
37.06	149.43
37.91	149.51
38.77	149.62
39.60	149.75
40.47	149.90
41.36	150.09
42.34	150.32
43.26	150.55
44.15	150.78
45.02	151.02
45.90	151.28
46.77	151.54
47.65	151.82
48.55	152.11
49.48	152.43
50.38	152.74
51.27	153.06
52.14	153.38
53.02	153.72
53.89	154.06
54.77	154.42
55.66	154.78
56.56	155.17
57.47	155.55
58.36	155.93
59.26	156.31
60.15	156.69
61.04	157.07
61.93	157.45
62.83	157.83
63.73	158.21
64.62	158.60
65.50	158.98
66.38	159.37
67.27	159.77
68.16	160.18
69.06	160.59
69.98	161.02
70.94	161.48
71.82	161.92
72.68	162.38
73.51	162.86
74.38	163.39
75.22	163.93
76.08	164.53
76.99	165.18
77.98	165.92
78.89	166.63
79.77	167.34
80.63	168.06
81.50	168.83

			82.46	169.72	
			83.54	170.76	
			85.07	172.28	
			85.07	174.79	
Fattore di sicurezza (FS)	1.7639	- N.3 --	X	Y	Lambda= 0.2912
			25.84	153.84	
			29.02	152.21	
			30.49	151.50	
			31.46	151.09	
			32.25	150.82	
			33.05	150.64	
			33.75	150.53	
			34.52	150.47	
			35.36	150.47	
			36.40	150.51	
			37.33	150.56	
			38.20	150.63	
			39.03	150.70	
			39.87	150.79	
			40.70	150.89	
			41.54	151.01	
			42.41	151.15	
			43.34	151.31	
			44.20	151.47	
			45.03	151.65	
			45.84	151.84	
			46.67	152.06	
			47.48	152.30	
			48.30	152.56	
			49.15	152.84	
			50.05	153.16	
			50.93	153.48	
			51.79	153.80	
			52.64	154.12	
			53.49	154.44	
			54.33	154.76	
			55.19	155.09	
			56.05	155.43	
			56.94	155.78	
			57.79	156.14	
			58.63	156.50	
			59.45	156.86	
			60.29	157.25	
			61.11	157.65	
			61.95	158.07	
			62.80	158.51	
			63.69	158.99	
			64.55	159.45	
			65.41	159.92	
			66.25	160.39	
			67.10	160.87	
			67.94	161.35	
			68.78	161.84	
			69.63	162.34	
			70.49	162.85	
			71.35	163.37	
			72.20	163.88	
			73.05	164.39	
			73.90	164.90	
			74.76	165.42	
			75.63	165.95	
			76.51	166.49	
			77.42	167.05	
			78.26	167.59	
			79.07	168.15	
			79.87	168.73	
			80.70	169.38	
			81.59	170.12	
			82.62	171.02	
			83.60	171.93	
			83.60	174.49	
Fattore di sicurezza (FS)	1.7695	- N.4 --	X	Y	Lambda= 0.2890
			23.27	153.24	
			27.32	151.37	
			29.17	150.57	

30.38	150.13
31.33	149.88
32.32	149.73
33.17	149.68
34.13	149.71
35.18	149.83
36.52	150.04
37.70	150.25
38.80	150.46
39.85	150.69
40.90	150.93
41.93	151.19
42.97	151.48
44.04	151.79
45.18	152.15
46.27	152.49
47.34	152.84
48.40	153.20
49.46	153.57
50.51	153.94
51.58	154.33
52.65	154.73
53.76	155.15
54.83	155.57
55.90	156.00
56.96	156.43
58.02	156.87
59.08	157.32
60.16	157.79
61.28	158.28
62.44	158.80
63.50	159.31
64.53	159.84
65.52	160.40
66.56	161.03
67.55	161.67
68.58	162.38
69.65	163.15
70.82	164.04
71.93	164.90
73.00	165.75
74.06	166.61
75.13	167.47
76.31	168.46
77.63	169.58
79.08	170.84
79.08	173.52

Fattore di sicurezza (FS) 1.7713 - N.5 -- X Y Lambda= 0.2931

23.58	153.31
28.14	150.86
30.17	149.84
31.46	149.30
32.44	149.01
33.50	148.85
34.37	148.82
35.38	148.91
36.52	149.11
38.03	149.46
39.36	149.79
40.59	150.11
41.77	150.43
42.93	150.76
44.08	151.10
45.25	151.47
46.44	151.86
47.70	152.28
48.88	152.70
50.03	153.13
51.16	153.58
52.31	154.06
53.44	154.56
54.60	155.09
55.78	155.66
57.04	156.29
58.23	156.90
59.40	157.52
60.54	158.14

61.70	158.80
62.86	159.47
64.03	160.17
65.25	160.92
66.55	161.73
67.72	162.51
68.85	163.32
69.94	164.16
71.08	165.10
72.30	166.18
73.71	167.51
75.76	169.52
76.68	170.46
76.68	172.97

Fattore di sicurezza (FS) 1.7715 - N.6 -- X Y Lambda= 0.2974

25.24	153.68
27.73	152.14
28.85	151.48
29.57	151.12
30.13	150.90
30.72	150.76
31.21	150.69
31.77	150.67
32.39	150.71
33.20	150.81
33.93	150.90
34.61	150.99
35.27	151.08
35.91	151.17
36.55	151.27
37.20	151.37
37.86	151.48
38.54	151.60
39.19	151.72
39.82	151.85
40.45	151.98
41.08	152.13
41.71	152.29
42.34	152.46
42.98	152.65
43.65	152.85
44.31	153.05
44.97	153.25
45.62	153.45
46.26	153.64
46.91	153.84
47.56	154.04
48.22	154.25
48.88	154.45
49.52	154.66
50.16	154.87
50.79	155.08
51.43	155.30
52.07	155.53
52.71	155.77
53.37	156.02
54.05	156.28
54.70	156.55
55.34	156.81
55.97	157.09
56.61	157.37
57.23	157.67
57.87	157.97
58.52	158.29
59.19	158.64
59.85	158.98
60.50	159.32
61.14	159.66
61.78	160.01
62.43	160.36
63.08	160.72
63.74	161.09
64.43	161.48
65.07	161.86
65.70	162.25
66.32	162.66
66.95	163.09

67.57	163.53
68.21	164.01
68.88	164.52
69.60	165.09
70.25	165.64
70.88	166.20
71.49	166.77
72.12	167.40
72.80	168.13
73.59	169.00
74.43	170.00
74.43	172.46

Fattore di sicurezza (FS) 1.7722 - N.7 -- X Y Lambda= 0.2893

24.41	153.50
28.35	151.36
30.15	150.45
31.32	149.93
32.25	149.62
33.21	149.40
34.04	149.30
34.97	149.27
36.00	149.31
37.33	149.44
38.48	149.57
39.53	149.73
40.53	149.90
41.54	150.11
42.51	150.34
43.52	150.60
44.56	150.90
45.69	151.26
46.77	151.61
47.81	151.96
48.83	152.32
49.86	152.69
50.88	153.07
51.91	153.46
52.96	153.88
54.06	154.32
55.10	154.76
56.13	155.21
57.15	155.66
58.17	156.14
59.19	156.63
60.24	157.14
61.31	157.68
62.45	158.28
63.49	158.85
64.49	159.44
65.46	160.06
66.47	160.74
67.44	161.44
68.44	162.20
69.47	163.02
70.58	163.95
71.66	164.86
72.72	165.75
73.77	166.63
74.80	167.51
75.97	168.52
77.26	169.63
78.68	170.86
78.68	173.43

Fattore di sicurezza (FS) 1.7725 - N.8 -- X Y Lambda= 0.2865

25.88	153.85
31.24	150.84
33.61	149.59
35.09	148.95
36.22	148.60
37.43	148.42
38.43	148.40
39.59	148.53
40.92	148.81
42.71	149.28
44.28	149.72

45.72	150.14
47.09	150.57
48.44	151.01
49.76	151.46
51.11	151.95
52.47	152.46
53.90	153.01
55.29	153.56
56.67	154.11
58.03	154.67
59.38	155.23
60.75	155.80
62.13	156.39
63.54	157.00
65.01	157.64
66.36	158.27
67.69	158.92
68.98	159.60
70.32	160.34
71.61	161.10
72.95	161.93
74.32	162.82
75.81	163.82
77.21	164.79
78.58	165.76
79.92	166.74
81.27	167.76
82.76	168.92
84.44	170.26
86.83	172.21
87.35	172.64
87.35	175.25

Fattore di sicurezza (FS) 1.7735 - N.9 -- X Y Lambda= 0.2863

23.99	153.40
26.88	151.67
28.22	150.91
29.09	150.48
29.80	150.19
30.52	149.98
31.15	149.85
31.85	149.76
32.62	149.73
33.58	149.73
34.43	149.75
35.21	149.79
35.95	149.84
36.71	149.92
37.44	150.01
38.19	150.13
38.98	150.27
39.84	150.44
40.63	150.61
41.39	150.80
42.12	151.00
42.88	151.22
43.61	151.45
44.35	151.71
45.11	151.99
45.93	152.31
46.72	152.62
47.51	152.93
48.29	153.24
49.06	153.54
49.83	153.84
50.61	154.14
51.38	154.45
52.16	154.75
52.93	155.06
53.69	155.36
54.46	155.67
55.23	155.98
56.00	156.30
56.77	156.62
57.55	156.94
58.34	157.27
59.11	157.60
59.88	157.94

60.64	158.28
61.40	158.62
62.17	158.98
62.94	159.35
63.74	159.73
64.57	160.14
65.34	160.54
66.09	160.95
66.81	161.37
67.57	161.84
68.30	162.32
69.07	162.84
69.87	163.41
70.75	164.07
71.53	164.69
72.27	165.33
72.99	165.99
73.73	166.73
74.53	167.59
75.46	168.64
76.81	170.26
76.81	173.00

Fattore di sicurezza (FS) 1.7736 - N.10 -- X Y Lambda= 0.2980

24.37	153.49
27.90	151.65
29.55	150.85
30.63	150.39
31.51	150.09
32.39	149.87
33.18	149.75
34.05	149.68
35.00	149.67
36.19	149.71
37.21	149.77
38.17	149.85
39.07	149.95
39.99	150.09
40.88	150.25
41.81	150.44
42.78	150.67
43.86	150.96
44.83	151.24
45.76	151.53
46.65	151.84
47.57	152.20
48.45	152.57
49.36	152.99
50.29	153.44
51.30	153.96
52.29	154.46
53.26	154.96
54.22	155.45
55.17	155.94
56.12	156.43
57.06	156.91
58.01	157.40
58.95	157.88
59.90	158.37
60.85	158.86
61.80	159.34
62.75	159.83
63.70	160.32
64.65	160.81
65.60	161.29
66.55	161.78
67.50	162.27
68.44	162.76
69.38	163.26
70.33	163.76
71.28	164.27
72.25	164.79
73.24	165.33
74.28	165.90
75.21	166.44
76.11	167.02
76.97	167.62
77.89	168.30

78.87	169.10
80.01	170.09
81.48	171.44
81.48	174.05

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

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	1.760	6175.8	3508.8	2316.1	Surplus
2	1.763	6318.0	3584.2	2375.3	Surplus
3	1.764	5597.7	3173.5	2106.8	Surplus
4	1.770	5244.9	2964.0	1984.5	Surplus
5	1.771	5239.8	2958.2	1985.7	Surplus
6	1.772	4254.9	2401.8	1612.9	Surplus
7	1.772	5489.6	3097.7	2082.1	Surplus
8	1.773	6885.5	3884.6	2612.5	Surplus
9	1.773	5068.6	2858.0	1924.8	Surplus
10	1.774	5417.3	3054.5	2057.4	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 1612.9

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

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

TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (°)	W (kN/m)	ru (-)	U (kPa)	phi' (°)	(c',Cu) (kPa)
24.735	0.511	-29.76	2.10	0.00	0.00	26.00	19.50
25.246	0.254	-29.76	2.61	0.00	0.00	26.00	19.50
25.500	0.511	-29.76	8.56	0.00	0.00	26.00	19.50
26.011	0.511	-29.76	13.09	0.00	0.00	26.00	19.50
26.521	0.511	-29.76	17.61	0.00	0.00	26.00	19.50
27.032	0.511	-29.76	22.14	0.00	0.00	26.00	19.50
27.543	0.511	-29.76	26.67	0.00	0.00	26.00	19.50
28.054	0.082	-29.76	4.73	0.00	0.00	26.00	19.50
28.136	0.511	-28.34	31.85	0.00	0.00	26.00	19.50
28.647	0.353	-28.34	24.58	0.00	0.00	26.00	19.50
29.000	0.511	-28.34	39.33	0.00	0.00	26.00	19.50
29.511	0.171	-28.34	14.18	0.00	0.00	26.00	19.50
29.682	0.511	-24.82	45.24	0.00	0.00	26.00	19.50
30.192	0.484	-24.82	46.76	0.00	0.00	26.00	19.50
30.677	0.511	-19.75	53.10	0.00	0.00	26.00	19.50
31.187	0.275	-19.75	30.13	0.00	0.00	26.00	19.50
31.463	0.037	-12.96	4.17	0.00	0.00	26.00	19.50
31.500	0.511	-12.96	58.72	0.00	0.00	26.00	19.50
32.011	0.268	-12.96	32.08	0.00	0.00	26.00	19.50
32.278	0.511	-7.40	63.44	0.00	0.00	26.00	19.50
32.789	0.180	-7.40	23.05	0.00	0.00	26.00	19.50
32.969	0.511	-1.51	66.87	0.00	0.00	26.00	19.50
33.480	0.269	-1.51	36.09	0.00	0.00	26.00	19.50
33.749	0.511	3.17	70.00	0.00	0.00	26.00	19.50
34.260	0.345	3.17	48.32	0.00	0.00	26.00	19.50
34.605	0.395	6.36	56.18	0.00	0.00	26.00	19.50
35.000	0.511	6.36	74.00	0.00	0.00	26.00	19.50
35.511	0.190	6.36	27.93	0.00	0.00	26.00	19.50
35.701	0.511	6.59	76.19	0.00	0.00	26.00	19.50
36.211	0.492	6.59	74.84	0.00	0.00	26.00	19.50
36.703	0.297	6.84	45.93	0.00	0.00	26.00	19.50
37.000	0.511	6.84	80.25	0.00	0.00	26.00	19.50
37.511	0.131	6.84	20.86	0.00	0.00	26.00	19.50
37.642	0.511	7.10	82.34	0.00	0.00	26.00	19.50
38.152	0.400	7.10	65.60	0.00	0.00	26.00	19.50
38.552	0.511	7.38	85.27	0.00	0.00	26.00	19.50
39.063	0.375	7.38	63.73	0.00	0.00	26.00	19.50
39.438	0.511	7.64	88.08	0.00	0.00	26.00	19.50
39.949	0.380	7.64	66.56	0.00	0.00	26.00	19.50

40.329	0.511	7.90	90.86	0.00	0.00	26.00	19.50
40.840	0.388	7.90	70.09	0.00	0.00	26.00	19.50
41.228	0.511	8.15	93.63	0.00	0.00	26.00	19.50
41.738	0.406	8.15	75.56	0.00	0.00	26.00	19.50
42.145	0.511	8.39	96.40	0.00	0.00	26.00	19.50
42.655	0.433	8.39	82.93	0.00	0.00	26.00	19.50
43.088	0.511	9.46	99.18	0.00	0.00	26.00	19.50
43.599	0.375	9.46	73.66	0.00	0.00	26.00	19.50
43.974	0.511	10.62	101.61	0.00	0.00	26.00	19.50
44.484	0.016	10.62	3.16	0.00	0.00	26.00	19.50
44.500	0.340	10.62	68.50	0.00	0.00	26.00	19.50
44.840	0.511	11.83	104.03	0.00	0.00	26.00	19.50
45.351	0.337	11.83	69.35	0.00	0.00	26.00	19.50
45.688	0.511	13.02	106.32	0.00	0.00	26.00	19.50
46.198	0.364	13.02	76.51	0.00	0.00	26.00	19.50
46.562	0.511	14.22	108.49	0.00	0.00	26.00	19.50
47.073	0.340	14.22	72.80	0.00	0.00	26.00	19.50
47.412	0.511	15.40	110.40	0.00	0.00	26.00	19.50
47.923	0.077	15.40	16.73	0.00	0.00	26.00	19.50
48.000	0.284	15.40	61.96	0.00	0.00	26.00	19.50
48.284	0.511	16.50	111.86	0.00	0.00	26.00	19.50
48.795	0.385	16.50	84.81	0.00	0.00	26.00	19.50
49.180	0.511	17.49	112.99	0.00	0.00	26.00	19.50
49.691	0.449	17.49	99.90	0.00	0.00	26.00	19.50
50.140	0.511	18.11	114.04	0.00	0.00	26.00	19.50
50.651	0.401	18.11	89.93	0.00	0.00	26.00	19.50
51.052	0.511	18.78	114.91	0.00	0.00	26.00	19.50
51.563	0.378	18.78	85.41	0.00	0.00	26.00	19.50
51.941	0.511	19.46	115.65	0.00	0.00	26.00	19.50
52.452	0.363	19.46	82.36	0.00	0.00	26.00	19.50
52.815	0.511	20.14	116.25	0.00	0.00	26.00	19.50
53.325	0.175	20.14	39.85	0.00	0.00	26.00	19.50
53.500	0.196	20.14	44.63	0.00	0.00	26.00	19.50
53.696	0.511	20.81	116.60	0.00	0.00	26.00	19.50
54.206	0.359	20.81	81.92	0.00	0.00	26.00	19.50
54.565	0.511	21.47	116.70	0.00	0.00	26.00	19.50
55.076	0.369	21.47	84.39	0.00	0.00	26.00	19.50
55.445	0.511	22.11	116.68	0.00	0.00	26.00	19.50
55.956	0.383	22.11	87.43	0.00	0.00	26.00	19.50
56.338	0.511	22.70	116.54	0.00	0.00	26.00	19.50
56.849	0.416	22.70	94.84	0.00	0.00	26.00	19.50
57.265	0.511	23.05	116.30	0.00	0.00	26.00	19.50
57.776	0.393	23.05	89.37	0.00	0.00	26.00	19.50
58.169	0.511	23.40	115.99	0.00	0.00	26.00	19.50
58.680	0.380	23.40	86.14	0.00	0.00	26.00	19.50
59.059	0.441	23.76	99.78	0.00	0.00	26.00	19.50
59.500	0.443	23.76	100.09	0.00	0.00	26.00	19.50
59.943	0.511	24.13	115.16	0.00	0.00	26.00	19.50
60.454	0.374	24.13	84.18	0.00	0.00	26.00	19.50
60.828	0.511	24.48	114.61	0.00	0.00	26.00	19.50
61.338	0.371	24.48	83.14	0.00	0.00	26.00	19.50
61.710	0.511	24.84	113.99	0.00	0.00	26.00	19.50
62.221	0.279	24.84	62.20	0.00	0.00	26.00	19.50
62.500	0.098	24.84	21.69	0.00	0.00	26.00	19.50
62.598	0.511	25.18	113.09	0.00	0.00	26.00	19.50
63.108	0.387	25.18	85.27	0.00	0.00	26.00	19.50
63.496	0.511	25.52	111.78	0.00	0.00	26.00	19.50
64.006	0.406	25.52	88.27	0.00	0.00	26.00	19.50
64.412	0.511	25.92	110.38	0.00	0.00	26.00	19.50
64.923	0.385	25.92	82.70	0.00	0.00	26.00	19.50
65.308	0.511	26.33	108.92	0.00	0.00	26.00	19.50
65.819	0.181	26.33	38.47	0.00	0.00	26.00	19.50
66.000	0.194	26.33	40.97	0.00	0.00	26.00	19.50
66.194	0.511	26.74	107.53	0.00	0.00	26.00	19.50
66.704	0.369	26.74	77.18	0.00	0.00	26.00	19.50
67.073	0.511	27.16	106.20	0.00	0.00	26.00	19.50
67.584	0.374	27.16	77.16	0.00	0.00	26.00	19.50
67.957	0.511	27.57	104.78	0.00	0.00	26.00	19.50
68.468	0.371	27.57	75.67	0.00	0.00	26.00	19.50
68.840	0.511	27.98	103.27	0.00	0.00	26.00	19.50
69.350	0.380	27.98	76.29	0.00	0.00	26.00	19.50
69.730	0.511	28.38	101.67	0.00	0.00	26.00	19.50
70.241	0.259	28.38	51.18	0.00	0.00	26.00	19.50
70.500	0.137	28.38	26.95	0.00	0.00	26.00	19.50
70.637	0.511	28.75	99.67	0.00	0.00	26.00	19.50
71.148	0.424	28.75	81.72	0.00	0.00	26.00	19.50
71.572	0.511	29.52	97.11	0.00	0.00	26.00	19.50
72.082	0.382	29.52	71.65	0.00	0.00	26.00	19.50
72.464	0.511	30.33	94.50	0.00	0.00	26.00	19.50

72.975	0.366	30.33	66.85	0.00	0.00	26.00	19.50
73.341	0.511	31.15	91.76	0.00	0.00	26.00	19.50
73.852	0.148	31.15	26.27	0.00	0.00	26.00	19.50
74.000	0.205	31.15	36.15	0.00	0.00	26.00	19.50
74.205	0.511	31.96	88.60	0.00	0.00	26.00	19.50
74.716	0.369	31.96	62.68	0.00	0.00	26.00	19.50
75.084	0.511	32.76	84.96	0.00	0.00	26.00	19.50
75.595	0.357	32.76	58.17	0.00	0.00	26.00	19.50
75.953	0.511	33.54	81.19	0.00	0.00	26.00	19.50
76.463	0.375	33.54	58.09	0.00	0.00	26.00	19.50
76.838	0.511	34.28	77.17	0.00	0.00	26.00	19.50
77.349	0.399	34.28	58.58	0.00	0.00	26.00	19.50
77.747	0.511	34.95	72.87	0.00	0.00	26.00	19.50
78.258	0.451	34.95	62.33	0.00	0.00	26.00	19.50
78.709	0.511	35.99	68.12	0.00	0.00	26.00	19.50
79.220	0.387	35.99	49.89	0.00	0.00	26.00	19.50
79.607	0.511	37.10	63.43	0.00	0.00	26.00	19.50
80.118	0.364	37.10	43.53	0.00	0.00	26.00	19.50
80.482	0.018	38.24	2.13	0.00	0.00	26.00	19.50
80.500	0.511	38.24	58.41	0.00	0.00	26.00	19.50
81.011	0.325	38.24	35.59	0.00	0.00	26.00	19.50
81.336	0.511	39.34	53.28	0.00	0.00	26.00	19.50
81.847	0.366	39.34	36.21	0.00	0.00	26.00	19.50
82.213	0.511	40.72	47.60	0.00	0.00	26.00	19.50
82.724	0.447	40.72	38.78	0.00	0.00	26.00	19.50
83.170	0.511	41.79	41.02	0.00	0.00	26.00	19.50
83.681	0.511	41.79	37.38	0.00	0.00	26.00	19.50
84.191	0.066	41.79	4.58	0.00	0.00	26.00	19.50
84.258	0.511	42.74	33.19	0.00	0.00	26.00	19.50
84.768	0.511	42.74	29.39	0.00	0.00	26.00	19.50

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

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TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	ht (m)	yt (m)	yt' (--)	E(x) (kN/m)	T(x) (kN/m)	E' (kN)	rho(x) (--)	FS_qFEM (--)	FS_srmFEM (--)
24.735	0.000	153.569	-0.369	0.0000000000E+000	0.0000000000E+000	3.8965811254E+000	0.059	25.238	24.241
25.246	0.081	153.358	-0.369	1.7999604261E+000	5.4470886822E-003	3.1523952880E+000	0.059	21.143	20.387
25.500	0.155	153.286	-0.309	2.5537136597E+000	1.4479857826E-002	4.9078260356E+000	0.059	16.777	16.363
26.011	0.282	153.122	-0.337	7.0525807256E+000	1.6355893531E-001	1.3429829189E+001	0.059	16.175	13.680
26.521	0.395	152.942	-0.355	1.6270973955E+001	1.0929382175E+000	2.4521184470E+001	0.059	24.197	10.026
27.032	0.504	152.759	-0.333	3.2098578362E+001	3.4252620558E+000	4.0947241386E+001	0.113	36.518	7.115
27.543	0.639	152.602	-0.276	5.8094586196E+001	7.3310216507E+000	5.5154230919E+001	0.174	45.724	5.715
28.054	0.806	152.477	-0.245	8.8433244370E+001	1.2171374516E+001	7.5382304515E+001	0.219	39.028	5.001
28.136	0.833	152.457	-0.245	9.4863254014E+001	1.3268204366E+001	7.8661100093E+001	0.228	35.810	4.904
28.647	0.983	152.332	-0.241	1.3724503740E+002	2.0744712652E+001	8.0332897301E+001	0.279	21.986	4.421
29.000	1.091	152.249	-0.210	1.6497915005E+002	2.5751231020E+001	8.0089142599E+001	0.302	17.533	4.183
29.511	1.268	152.151	-0.189	2.0705650983E+002	3.3836138418E+001	8.4636547029E+001	0.332	12.829	3.915
29.682	1.330	152.120	-0.156	2.2164266533E+002	3.6745750661E+001	8.6039014400E+001	0.341	11.596	3.838
30.192	1.490	152.045	-0.133	2.6657758019E+002	4.6253122855E+001	8.8112949519E+001	0.371	8.716	3.637

30.677	1.657	151.988	-0.099	3.0931345226E+002	5.5879104412E+001	8.7771084436E+001	0.397
6.899	3.482						
31.187	1.799	151.946	-0.071	3.5388968822E+002	6.6693163981E+001	8.4383778438E+001	0.425
5.607	3.344						
31.463	1.884	151.932	-0.048	3.7669130427E+002	7.2612017106E+001	8.2760453438E+001	0.439
5.084	3.279						
31.500	1.891	151.931	-0.015	3.7978658204E+002	7.3443097748E+001	8.2363536304E+001	0.441
5.019	3.270						
32.011	2.002	151.924	0.001	4.1913856640E+002	8.4609792369E+001	7.5670307082E+001	0.468
4.301	3.162						
32.278	2.071	151.932	0.046	4.3920032374E+002	9.0925879527E+001	7.2277316204E+001	0.483
3.984	3.104						
32.789	2.166	151.960	0.060	4.7351361719E+002	1.0252472164E+002	6.2248131692E+001	0.511
3.529	3.006						
32.969	2.203	151.974	0.100	4.8442261440E+002	1.0645822831E+002	6.0360574951E+001	0.520
3.400	2.974						
33.480	2.272	152.029	0.117	5.1504149167E+002	1.1834544300E+002	5.5142664005E+001	0.549
3.096	2.881						
33.749	2.314	152.065	0.158	5.2919029982E+002	1.2431704788E+002	5.2757949632E+001	0.563
2.971	2.835						
34.260	2.374	152.152	0.180	5.5627866492E+002	1.3653680089E+002	5.1195374045E+001	0.593
2.769	2.746						
34.605	2.421	152.219	0.207	5.7352413963E+002	1.4475058800E+002	4.9910256760E+001	0.613
2.659	2.689						
35.000	2.464	152.306	0.220	5.9322130514E+002	1.5445686105E+002	4.6258960750E+001	0.636
2.548	2.626						
35.511	2.520	152.419	0.225	6.1446274230E+002	1.6554390509E+002	4.0508535381E+001	0.661
2.446	2.557						
35.701	2.543	152.463	0.235	6.2207881044E+002	1.6959574221E+002	3.9062659273E+001	0.670
2.414	2.534						
36.211	2.604	152.583	0.242	6.4059603057E+002	1.7968073358E+002	3.5982355878E+001	0.691
2.343	2.477						
36.703	2.670	152.705	0.247	6.5815585788E+002	1.8930325709E+002	3.3939803356E+001	0.710
2.286	2.428						
37.000	2.706	152.778	0.246	6.6791887357E+002	1.9465564632E+002	3.2730348508E+001	0.721
2.257	2.402						
37.511	2.771	152.904	0.248	6.8451496993E+002	2.0369855852E+002	3.1846315100E+001	0.737
2.213	2.362						
37.642	2.788	152.937	0.256	6.8866657436E+002	2.0594509948E+002	3.1858233941E+001	0.740
2.203	2.352						
38.152	2.856	153.068	0.261	7.0529247848E+002	2.1492529786E+002	3.2657156504E+001	0.755
2.165	2.316						
38.552	2.912	153.174	0.268	7.1837846950E+002	2.2196333915E+002	3.2925185106E+001	0.767
2.139	2.289						
39.063	2.985	153.312	0.274	7.3531613938E+002	2.3108036530E+002	3.3379096426E+001	0.781
2.109	2.256						
39.438	3.040	153.417	0.278	7.4790827464E+002	2.3788405646E+002	3.3280876641E+001	0.791
2.088	2.232						
39.949	3.113	153.559	0.283	7.6472755814E+002	2.4701415870E+002	3.3589680295E+001	0.804
2.064	2.201						
40.329	3.173	153.669	0.295	7.7767308762E+002	2.5406788877E+002	3.4097160540E+001	0.814
2.046	2.176						
40.840	3.254	153.821	0.317	7.9509996138E+002	2.6360185785E+002	3.6454337392E+001	0.828
2.024	2.144						
41.228	3.333	153.954	0.327	8.0993303644E+002	2.7174363063E+002	3.6428695826E+001	0.839
2.005	2.116						
41.738	3.421	154.115	0.316	8.2732958050E+002	2.8130878781E+002	3.3607571438E+001	0.851
1.984	2.083						
42.145	3.492	154.244	0.312	8.4083102083E+002	2.8873912417E+002	3.2218239536E+001	0.861
1.968	2.057						
42.655	3.573	154.401	0.308	8.5662579377E+002	2.9743909170E+002	3.0146504071E+001	0.871
1.948	2.027						
43.088	3.644	154.535	0.302	8.6939204461E+002	3.0450529245E+002	2.8064638144E+001	0.879
1.931	2.002						
43.599	3.710	154.686	0.297	8.8286956049E+002	3.1202488238E+002	2.5320042170E+001	0.887
1.912	1.975						
43.974	3.759	154.798	0.299	8.9206056382E+002	3.1723252256E+002	2.3546348912E+001	0.893
1.898	1.957						
44.484	3.817	154.951	0.301	9.0339733932E+002	3.2380570087E+002	2.2991919986E+001	0.900
1.879	1.933						
44.500	3.819	154.956	0.330	9.0376067877E+002	3.2402064951E+002	2.2924562567E+001	0.900
1.878	1.932						
44.840	3.867	155.068	0.328	9.1088713786E+002	3.2833128383E+002	2.0097463903E+001	0.904
1.864	1.916						
45.351	3.927	155.235	0.330	9.2050202178E+002	3.3432863394E+002	1.7786941651E+001	0.910
1.843	1.893						
45.688	3.969	155.348	0.335	9.2625932027E+002	3.3807057718E+002	1.6303626386E+001	0.914
1.829	1.878						
46.198	4.022	155.519	0.337	9.3396751106E+002	3.4331652800E+002	1.4059908087E+001	0.919

1.808 1.856
46.562 4.062 155.642 0.342 9.3881349879E+002 3.4679756552E+002 1.2541874756E+001 0.923
1.793 1.841
47.073 4.108 155.818 0.347 9.4465783657E+002 3.5129461244E+002 1.0545172557E+001 0.928
1.773 1.821
47.412 4.142 155.938 0.354 9.4803617050E+002 3.5409123015E+002 9.1395310487E+000 0.931
1.759 1.807
47.923 4.182 156.119 0.356 9.5208313911E+002 3.5782383497E+002 6.9970455381E+000 0.935
1.740 1.787
48.000 4.189 156.147 0.359 9.5261087588E+002 3.5835946754E+002 6.6011918705E+000 0.936
1.737 1.784
48.284 4.212 156.248 0.346 9.5421848121E+002 3.6012309550E+002 4.7094782474E+000 0.938
1.727 1.773
48.795 4.234 156.422 0.351 9.5575597373E+002 3.6254308773E+002 2.1440661824E+000 0.942
1.709 1.755
49.180 4.261 156.563 0.368 9.5633010825E+002 3.6414432703E+002 7.0173906837E-001 0.944
1.696 1.740
49.691 4.289 156.751 0.397 9.5615438093E+002 3.6578684708E+002 -1.5632386951E+000 0.947
1.679 1.721
50.140 4.339 156.943 0.429 9.5496980258E+002 3.6688555808E+002 -3.4670886482E+000 0.949
1.663 1.703
50.651 4.392 157.164 0.434 9.5271680913E+002 3.6763745852E+002 -5.2886570566E+000 0.951
1.646 1.682
51.052 4.436 157.339 0.401 9.5031908703E+002 3.6790333607E+002 -6.5055348541E+000 0.953
1.633 1.667
51.563 4.453 157.530 0.373 9.4665339818E+002 3.6782515856E+002 -7.8159503393E+000 0.954
1.618 1.649
51.941 4.466 157.671 0.378 9.4351754898E+002 3.6743052078E+002 -8.5580711175E+000 0.954
1.608 1.638
52.452 4.480 157.866 0.381 9.3896124594E+002 3.6655577762E+002 -9.5089429471E+000 0.954
1.596 1.625
52.815 4.490 158.004 0.386 9.3536089930E+002 3.6570267564E+002 -1.0191879889E+001 0.953
1.589 1.617
53.325 4.502 158.203 0.385 9.2996474597E+002 3.6424738649E+002 -1.0875622770E+001 0.953
1.579 1.607
53.500 4.503 158.268 0.359 9.2804533972E+002 3.6368581110E+002 -1.1458166089E+001 0.952
1.576 1.604
53.696 4.499 158.336 0.350 9.2569979986E+002 3.6296498110E+002 -1.2246721950E+001 0.952
1.572 1.601
54.206 4.484 158.515 0.357 9.1910514500E+002 3.6082628935E+002 -1.3823743245E+001 0.950
1.563 1.592
54.565 4.479 158.646 0.371 9.1391851041E+002 3.5904258132E+002 -1.5023630857E+001 0.949
1.557 1.586
55.076 4.470 158.838 0.384 9.0583838964E+002 3.5612752956E+002 -1.6865935305E+001 0.947
1.548 1.578
55.445 4.470 158.984 0.404 8.9933067712E+002 3.5368570102E+002 -1.8315701146E+001 0.945
1.542 1.571
55.956 4.473 159.193 0.417 8.8948630745E+002 3.4985366103E+002 -2.0170462552E+001 0.942
1.533 1.562
56.338 4.481 159.357 0.431 8.8150743493E+002 3.4666313169E+002 -2.1349327603E+001 0.939
1.527 1.555
56.849 4.489 159.578 0.441 8.7025791304E+002 3.4204930110E+002 -2.2954975446E+001 0.935
1.519 1.545
57.265 4.501 159.765 0.428 8.6039437780E+002 3.3791837991E+002 -2.3105880214E+001 0.931
1.513 1.536
57.776 4.494 159.975 0.413 8.4897317741E+002 3.3303028641E+002 -2.3044174966E+001 0.926
1.507 1.527
58.169 4.490 160.139 0.413 8.3971246705E+002 3.2902358177E+002 -2.3565852449E+001 0.921
1.502 1.519
58.680 4.479 160.349 0.418 8.2767858026E+002 3.2377410588E+002 -2.5193914049E+001 0.916
1.497 1.510
59.059 4.477 160.511 0.424 8.1764807439E+002 3.1938167294E+002 -2.6474609566E+001 0.911
1.493 1.504
59.500 4.469 160.697 0.421 8.0594764003E+002 3.1424867678E+002 -2.6889839346E+001 0.905
1.489 1.496
59.943 4.460 160.883 0.423 7.9389022902E+002 3.0895926595E+002 -2.6810588133E+001 0.899
1.485 1.489
60.454 4.448 161.100 0.425 7.8044379310E+002 3.0306865466E+002 -2.6263405819E+001 0.893
1.482 1.483
60.828 4.439 161.259 0.426 7.7063465553E+002 2.9877627054E+002 -2.6069383097E+001 0.888
1.479 1.478
61.338 4.425 161.476 0.411 7.5742254776E+002 2.9299549694E+002 -2.5959216481E+001 0.881
1.476 1.473
61.710 4.401 161.621 0.383 7.4775563696E+002 2.8875807508E+002 -2.5815565535E+001 0.876
1.474 1.470
62.221 4.357 161.814 0.384 7.3471775310E+002 2.8302777007E+002 -2.6822259013E+001 0.869
1.472 1.467
62.500 4.338 161.925 0.404 7.2702546667E+002 2.7962484628E+002 -2.9111415130E+001 0.865
1.471 1.465

62.598	4.334	161.966	0.407	7.2413037025E+002	2.7833752172E+002	-2.9500028930E+001	0.864
1.471	1.464						
63.108	4.301	162.172	0.404	7.0950261905E+002	2.7181409295E+002	-2.8880432173E+001	0.856
1.469	1.462						
63.496	4.275	162.329	0.404	6.9824746169E+002	2.6677986696E+002	-2.9208851563E+001	0.851
1.468	1.460						
64.006	4.237	162.535	0.408	6.8323081957E+002	2.6004552836E+002	-2.9959919478E+001	0.842
1.466	1.458						
64.412	4.211	162.703	0.409	6.7089433450E+002	2.5450191157E+002	-3.0251523864E+001	0.836
1.465	1.456						
64.923	4.170	162.910	0.409	6.5554134202E+002	2.4759512675E+002	-3.0549296028E+001	0.827
1.463	1.455						
65.308	4.143	163.069	0.410	6.4363370078E+002	2.4224058080E+002	-3.0749484548E+001	0.820
1.462	1.453						
65.819	4.098	163.277	0.407	6.2804291048E+002	2.3524019532E+002	-3.0638768980E+001	0.810
1.461	1.451						
66.000	4.082	163.351	0.417	6.2247905272E+002	2.3274716819E+002	-3.1311069160E+001	0.807
1.460	1.450						
66.194	4.069	163.434	0.393	6.1628437379E+002	2.2997654305E+002	-3.1114696974E+001	0.803
1.459	1.449						
66.704	4.006	163.628	0.402	6.0156888560E+002	2.2342776157E+002	-3.0994964489E+001	0.794
1.458	1.446						
67.073	3.979	163.787	0.437	5.8955807438E+002	2.1809546961E+002	-3.2993560683E+001	0.786
1.456	1.444						
67.584	3.942	164.013	0.443	5.7240838968E+002	2.1049564268E+002	-3.3781755617E+001	0.774
1.455	1.441						
67.957	3.917	164.179	0.445	5.5973503137E+002	2.0488871648E+002	-3.4003961513E+001	0.765
1.453	1.438						
68.468	3.878	164.406	0.449	5.4231671054E+002	1.9719431591E+002	-3.4592597296E+001	0.752
1.451	1.434						
68.840	3.852	164.575	0.452	5.2933599986E+002	1.9146548953E+002	-3.4957343080E+001	0.743
1.450	1.431						
69.350	3.812	164.805	0.454	5.1147529477E+002	1.8358813066E+002	-3.5336753066E+001	0.729
1.448	1.427						
69.730	3.783	164.979	0.424	4.9793794675E+002	1.7762226338E+002	-3.3895482534E+001	0.718
1.447	1.425						
70.241	3.712	165.183	0.411	4.8180205498E+002	1.7052360568E+002	-3.3403610749E+001	0.705
1.445	1.423						
70.500	3.684	165.295	0.438	4.7291658840E+002	1.6661662275E+002	-3.5522949271E+001	0.697
1.445	1.422						
70.637	3.671	165.357	0.436	4.6796680239E+002	1.6444177157E+002	-3.5902791108E+001	0.693
1.444	1.422						
71.148	3.612	165.578	0.437	4.5011914752E+002	1.5660846129E+002	-3.5558730483E+001	0.679
1.443	1.422						
71.572	3.567	165.765	0.436	4.3482508840E+002	1.4993500860E+002	-3.5763963333E+001	0.665
1.442	1.422						
72.082	3.498	165.986	0.435	4.1674639149E+002	1.4210873181E+002	-3.5930758419E+001	0.650
1.441	1.424						
72.464	3.450	166.153	0.433	4.0287522665E+002	1.3618147410E+002	-3.6032741142E+001	0.637
1.440	1.426						
72.975	3.370	166.372	0.431	3.8467478659E+002	1.2851443899E+002	-3.6019574121E+001	0.621
1.440	1.430						
73.341	3.315	166.532	0.430	3.7137336122E+002	1.2301260079E+002	-3.6044238539E+001	0.609
1.440	1.433						
73.852	3.224	166.750	0.427	3.5314277276E+002	1.1559779906E+002	-3.5600649822E+001	0.592
1.440	1.438						
74.000	3.198	166.813	0.431	3.4788084071E+002	1.1348620804E+002	-3.5922670206E+001	0.587
1.440	1.439						
74.205	3.163	166.902	0.409	3.4041582117E+002	1.1052746848E+002	-3.5483351494E+001	0.581
1.440	1.441						
74.716	3.048	167.105	0.403	3.2347034097E+002	1.0396381073E+002	-3.3595743427E+001	0.567
1.441	1.447						
75.084	2.969	167.256	0.418	3.1097192562E+002	9.9182030584E+001	-3.4295617497E+001	0.556
1.442	1.451						
75.595	2.857	167.473	0.435	2.9317398077E+002	9.2437276379E+001	-3.5684586772E+001	0.540
1.444	1.456						
75.953	2.788	167.634	0.458	2.8020842325E+002	8.7546533828E+001	-3.6529553076E+001	0.528
1.445	1.460						
76.463	2.686	167.871	0.479	2.6136247887E+002	8.0466428639E+001	-3.8120194622E+001	0.509
1.447	1.465						
76.838	2.625	168.058	0.536	2.4674921387E+002	7.4990466029E+001	-4.0509192539E+001	0.492
1.448	1.469						
77.349	2.564	168.345	0.570	2.2501972257E+002	6.6914496064E+001	-4.2823543239E+001	0.466
1.450	1.474						
77.747	2.524	168.577	0.547	2.0786266915E+002	6.0598635367E+001	-4.0485538250E+001	0.442
1.452	1.478						
78.258	2.432	168.842	0.522	1.8885685040E+002	5.3705782511E+001	-3.6883638043E+001	0.416
1.454	1.482						
78.709	2.354	169.079	0.512	1.7234428362E+002	4.7848780427E+001	-3.5274784540E+001	0.392

1.456	1.487						
79.220	2.238	169.335	0.495	1.5508994462E+002	4.1881823230E+001	-3.2816898203E+001	0.366
1.459	1.492						
79.607	2.147	169.524	0.479	1.4267139841E+002	3.7697060373E+001	-3.1101470168E+001	0.346
1.462	1.497						
80.118	2.001	169.765	0.463	1.2744899366E+002	3.2719755615E+001	-2.8487425982E+001	0.321
1.466	1.505						
80.482	1.890	169.929	0.450	1.1741732385E+002	2.9532008143E+001	-2.6905712268E+001	0.305
1.470	1.511						
80.500	1.884	169.937	0.507	1.1693120376E+002	2.9378140659E+001	-2.6939736679E+001	0.304
1.470	1.512						
81.011	1.741	170.197	0.513	1.0222350085E+002	2.4924441050E+001	-2.8210285659E+001	0.279
1.479	1.525						
81.336	1.654	170.365	0.510	9.3170721883E+001	2.2270771408E+001	-2.7514008012E+001	0.263
1.485	1.533						
81.847	1.492	170.623	0.519	7.9376990433E+001	1.8248700502E+001	-2.7908912386E+001	0.236
1.496	1.548						
82.213	1.390	170.821	0.595	6.8920099762E+001	1.5225041129E+001	-2.9695611901E+001	0.212
1.507	1.563						
82.724	1.274	171.144	0.648	5.2941425049E+001	1.0681791741E+001	-3.0525403478E+001	0.167
1.532	1.592						
83.170	1.187	171.441	0.639	3.9608748737E+001	7.0033037102E+000	-2.7139337902E+001	0.123
1.557	1.619						
83.681	1.045	171.756	0.597	2.7337155895E+001	3.9418943982E+000	-2.1534860817E+001	0.080
1.598	1.657						
84.191	0.883	172.051	0.565	1.7612989365E+001	2.1266127626E+000	-1.4644077764E+001	0.059
1.648	1.704						
84.258	0.855	172.082	0.715	1.6680424790E+001	1.9877863462E+000	-1.4607762358E+001	0.059
1.651	1.709						
84.768	0.764	172.463	0.715	7.1177436850E+000	7.8459746575E-001	-1.6330903614E+001	0.059
1.770	1.839						

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)
24.735	0.511	0.588	-29.758	-1.695	-0.997	21.046	12.381
25.246	0.254	0.293	-29.758	-4.234	-1.239	23.371	6.838
25.500	0.511	0.588	-29.758	-6.904	-4.061	26.076	15.340
26.011	0.511	0.588	-29.758	-10.558	-6.211	31.102	18.297
26.521	0.511	0.588	-29.758	-14.211	-8.360	37.501	22.061
27.032	0.511	0.588	-29.758	-17.865	-10.510	44.277	26.047
27.543	0.511	0.588	-29.758	-21.519	-12.659	49.643	29.204
28.054	0.082	0.095	-29.758	-23.641	-2.246	55.865	5.307
28.136	0.511	0.580	-28.341	-24.846	-14.417	59.674	34.626
28.647	0.353	0.401	-28.341	-27.723	-11.129	61.915	24.855
29.000	0.511	0.580	-28.341	-30.686	-17.805	66.612	38.652
29.511	0.171	0.194	-28.341	-33.071	-6.419	70.242	13.633
29.682	0.511	0.563	-24.820	-31.926	-17.964	75.468	42.464
30.192	0.484	0.534	-24.820	-34.797	-18.569	80.053	42.720
30.677	0.511	0.543	-19.747	-30.762	-16.692	85.828	46.571
31.187	0.275	0.293	-19.747	-32.379	-9.471	88.532	25.897
31.463	0.037	0.038	-12.958	-21.732	-0.834	90.316	3.466
31.500	0.511	0.524	-12.958	-22.396	-11.737	91.605	48.005
32.011	0.268	0.275	-12.958	-23.346	-6.413	95.343	26.189
32.278	0.511	0.515	-7.400	-12.812	-6.598	95.271	49.064
32.789	0.180	0.182	-7.400	-13.186	-2.397	96.386	17.525
32.969	0.511	0.511	-1.508	-0.173	-0.089	95.781	48.933
33.480	0.269	0.269	-1.508	-0.178	-0.048	96.806	26.045
33.749	0.511	0.511	3.170	10.985	5.619	95.362	48.776
34.260	0.345	0.346	3.170	11.216	3.879	96.710	33.443
34.605	0.395	0.397	6.364	19.180	7.623	94.897	37.715
35.000	0.511	0.514	6.364	19.541	10.041	95.358	49.002

35.511	0.190	0.191	6.364	19.831	3.789	96.285	18.398
35.701	0.511	0.514	6.586	20.679	10.631	96.642	49.683
36.211	0.492	0.495	6.586	21.101	10.443	98.052	48.527
36.703	0.297	0.299	6.839	22.090	6.609	98.527	29.477
37.000	0.511	0.514	6.839	22.452	11.548	99.654	51.258
37.511	0.131	0.132	6.839	22.746	3.002	100.489	13.263
37.642	0.511	0.515	7.101	23.749	12.222	101.344	52.156
38.152	0.400	0.403	7.101	24.174	9.738	102.730	41.382
38.552	0.511	0.515	7.379	25.372	13.066	103.897	53.503
39.063	0.375	0.379	7.379	25.792	9.765	105.286	39.863
39.438	0.511	0.515	7.639	26.961	13.892	106.277	54.762
39.949	0.380	0.383	7.639	27.388	10.497	107.753	41.300
40.329	0.511	0.516	7.896	28.574	14.732	108.806	56.099
40.840	0.388	0.392	7.896	29.010	11.365	110.655	43.350
41.228	0.511	0.516	8.148	30.212	15.587	111.133	57.334
41.738	0.406	0.410	8.148	30.662	12.580	112.333	46.086
42.145	0.511	0.516	8.389	31.864	16.449	113.081	58.375
42.655	0.433	0.438	8.389	32.332	14.151	114.238	49.999
43.088	0.511	0.518	9.455	36.194	18.739	114.071	59.058
43.599	0.375	0.380	9.455	36.647	13.917	115.062	43.697
43.974	0.511	0.520	10.615	40.829	21.214	114.768	59.633
44.484	0.016	0.016	10.615	41.102	0.660	115.506	1.855
44.500	0.340	0.346	10.615	41.315	14.303	115.849	40.105
44.840	0.511	0.522	11.830	45.755	23.874	115.520	60.277
45.351	0.337	0.344	11.830	46.271	15.915	116.516	40.077
45.688	0.511	0.524	13.025	50.654	26.552	116.111	60.864
46.198	0.364	0.373	13.025	51.183	19.107	117.059	43.699
46.562	0.511	0.527	14.218	55.565	29.274	116.587	61.422
47.073	0.340	0.350	14.218	56.069	19.644	117.442	41.145
47.412	0.511	0.530	15.400	60.366	31.977	116.841	61.893
47.923	0.077	0.080	15.400	60.701	4.846	117.381	9.370
48.000	0.284	0.295	15.400	60.864	17.946	117.642	34.688
48.284	0.511	0.533	16.505	64.697	34.461	116.834	62.231
48.795	0.385	0.402	16.505	65.038	26.128	117.366	47.150
49.180	0.511	0.535	17.494	68.463	36.660	116.689	62.483
49.691	0.449	0.471	17.494	68.789	32.412	117.200	55.222
50.140	0.511	0.537	18.114	71.026	38.164	116.959	62.846
50.651	0.401	0.422	18.114	71.309	30.095	117.413	49.552
51.052	0.511	0.539	18.777	73.615	39.709	117.053	63.139
51.563	0.378	0.400	18.777	73.862	29.515	117.468	46.939
51.941	0.511	0.542	19.459	76.161	41.252	117.025	63.386
52.452	0.363	0.385	19.459	76.370	29.379	117.369	45.151
52.815	0.511	0.544	20.142	78.602	42.757	116.854	63.565
53.325	0.175	0.186	20.142	78.739	14.659	117.072	21.795
53.500	0.196	0.208	20.142	78.793	16.416	117.205	24.418
53.696	0.511	0.546	20.809	80.802	44.145	116.538	63.669
54.206	0.359	0.384	20.809	80.849	31.016	116.718	44.776
54.565	0.511	0.549	21.470	82.779	45.427	116.079	63.702
55.076	0.369	0.397	21.470	82.784	32.853	116.245	46.132
55.445	0.511	0.551	22.106	84.558	46.610	115.641	63.744
55.956	0.383	0.413	22.106	84.521	34.926	115.761	47.835
56.338	0.511	0.554	22.703	86.105	47.667	115.141	63.742
56.849	0.416	0.451	22.703	86.023	38.791	115.241	51.967
57.265	0.511	0.555	23.048	86.857	48.206	114.660	63.637
57.776	0.393	0.427	23.048	86.751	37.045	114.685	48.973
58.169	0.511	0.556	23.404	87.577	48.735	114.163	63.530
58.680	0.380	0.414	23.404	87.446	36.194	114.321	47.317
59.059	0.441	0.481	23.765	88.255	42.491	113.791	54.786
59.500	0.443	0.484	23.765	88.088	42.622	113.690	55.010
59.943	0.511	0.560	24.126	88.811	49.697	112.965	63.213
60.454	0.374	0.410	24.126	88.606	36.328	112.741	46.223
60.828	0.511	0.561	24.483	89.286	50.104	112.064	62.885
61.338	0.371	0.408	24.483	89.054	36.349	111.853	45.655
61.710	0.511	0.563	24.838	89.680	50.468	111.140	62.544
62.221	0.279	0.308	24.838	89.445	27.540	111.166	34.228
62.500	0.098	0.108	24.838	89.310	9.605	111.305	11.970
62.598	0.511	0.564	25.184	89.804	50.681	110.462	62.339
63.108	0.387	0.428	25.184	89.293	38.215	110.027	47.089
63.496	0.511	0.566	25.518	89.549	50.676	109.190	61.791
64.006	0.406	0.450	25.518	88.995	40.016	108.795	48.919
64.412	0.511	0.568	25.917	89.333	50.724	107.759	61.187
64.923	0.385	0.428	25.917	88.754	38.007	107.326	45.959
65.308	0.511	0.570	26.328	89.062	50.748	106.246	60.540
65.819	0.181	0.202	26.328	88.584	17.925	105.815	21.412
66.000	0.194	0.216	26.328	88.348	19.090	105.769	22.854
66.194	0.511	0.572	26.744	88.814	50.791	104.450	59.732
66.704	0.369	0.413	26.744	88.274	36.453	104.478	43.144
67.073	0.511	0.574	27.158	88.567	50.836	103.654	59.495
67.584	0.374	0.420	27.158	87.984	36.937	103.174	43.314

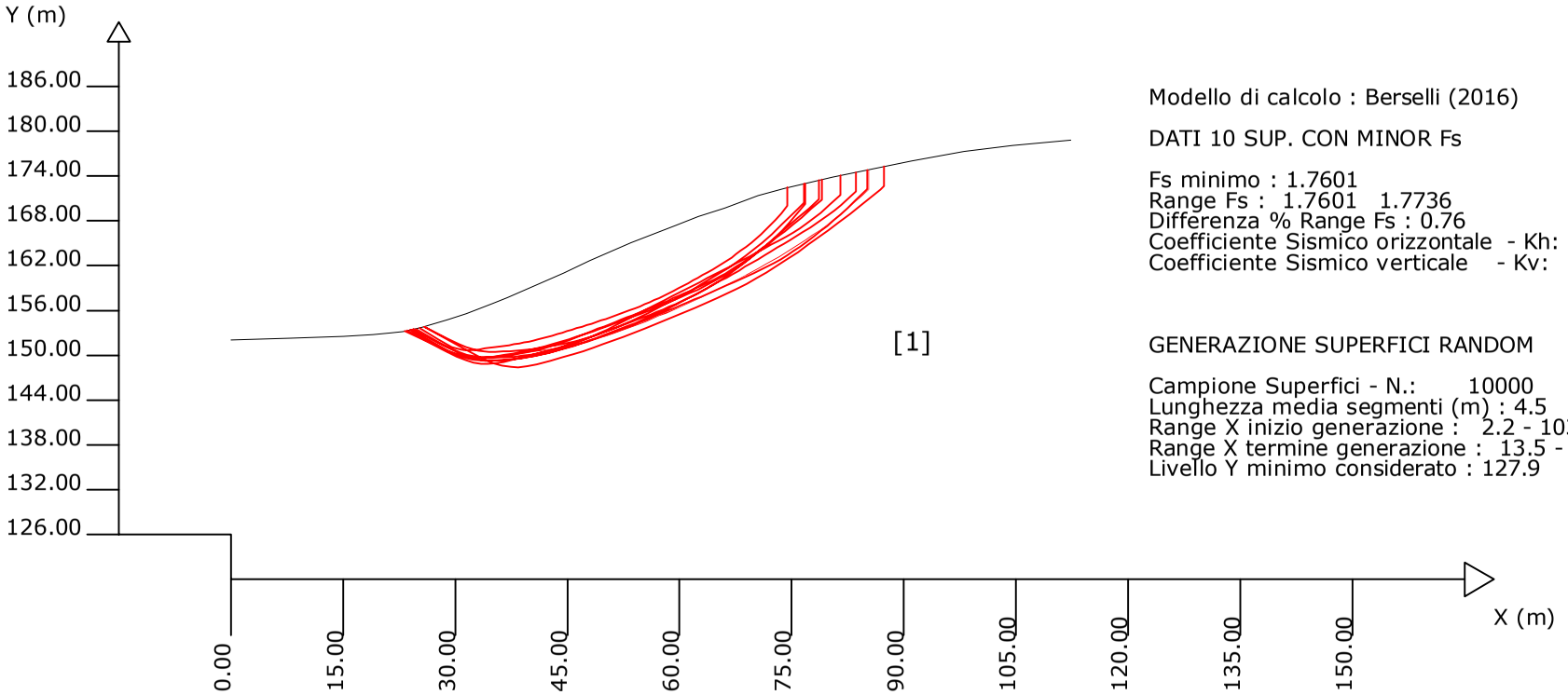
67.957	0.511	0.576	27.572	88.206	50.818	102.206	58.884
68.468	0.371	0.419	27.572	87.583	36.701	101.779	42.649
68.840	0.511	0.578	27.980	87.725	50.731	100.778	58.280
69.350	0.380	0.431	27.980	87.055	37.477	100.292	43.176
69.730	0.511	0.580	28.376	87.098	50.555	98.634	57.251
70.241	0.259	0.294	28.376	86.484	25.448	98.538	28.995
70.500	0.137	0.156	28.376	86.125	13.400	98.518	15.328
70.637	0.511	0.583	28.751	86.052	50.127	97.295	56.676
71.148	0.424	0.484	28.751	84.967	41.097	96.531	46.691
71.572	0.511	0.587	29.518	85.126	49.959	94.639	55.542
72.082	0.382	0.439	29.518	84.003	36.859	93.802	41.159
72.464	0.511	0.592	30.325	84.089	49.752	91.817	54.324
72.975	0.366	0.425	30.325	82.893	35.196	90.875	38.585
73.341	0.511	0.597	31.149	82.828	49.426	88.840	53.014
73.852	0.148	0.173	31.149	81.857	14.148	87.996	15.209
74.000	0.205	0.240	31.149	81.280	19.473	87.621	20.992
74.205	0.511	0.602	31.957	81.032	48.775	85.109	51.229
74.716	0.369	0.435	31.957	79.391	34.503	83.946	36.483
75.084	0.511	0.607	32.761	78.646	47.762	81.981	49.787
75.595	0.357	0.425	32.761	76.925	32.701	80.961	34.417
75.953	0.511	0.613	33.544	75.980	46.557	79.011	48.414
76.463	0.375	0.449	33.544	74.122	33.311	78.072	35.087
76.838	0.511	0.618	34.283	72.908	45.063	76.646	47.374
77.349	0.399	0.482	34.283	70.897	34.206	75.297	36.329
77.747	0.511	0.623	34.953	69.397	43.241	72.166	44.966
78.258	0.451	0.551	34.953	67.171	36.984	70.435	38.781
78.709	0.511	0.631	35.988	65.607	41.409	67.368	42.521
79.220	0.387	0.478	35.988	63.385	30.323	65.500	31.334
79.607	0.511	0.640	37.099	61.730	39.526	62.537	40.043
80.118	0.364	0.457	37.099	59.409	27.126	60.583	27.662
80.482	0.018	0.023	38.235	58.926	1.357	58.876	1.356
80.500	0.511	0.650	38.235	57.363	37.296	58.076	37.760
81.011	0.325	0.414	38.235	54.887	22.726	56.308	23.314
81.336	0.511	0.660	39.335	52.712	34.805	53.816	35.535
81.847	0.366	0.473	39.335	49.954	23.653	52.474	24.846
82.213	0.511	0.674	40.720	47.422	31.955	50.300	33.894
82.724	0.447	0.589	40.720	44.188	26.033	48.169	28.379
83.170	0.511	0.685	41.794	41.024	28.102	44.405	30.418
83.681	0.511	0.685	41.794	37.384	25.608	41.044	28.115
84.191	0.066	0.089	41.794	35.328	3.140	39.096	3.475
84.258	0.511	0.695	42.744	33.267	23.134	37.646	26.179
84.768	0.511	0.695	42.744	29.459	20.486	35.231	24.500

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 : 14/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Berselli (2016)

DATI 10 SUP. CON MINOR Fs

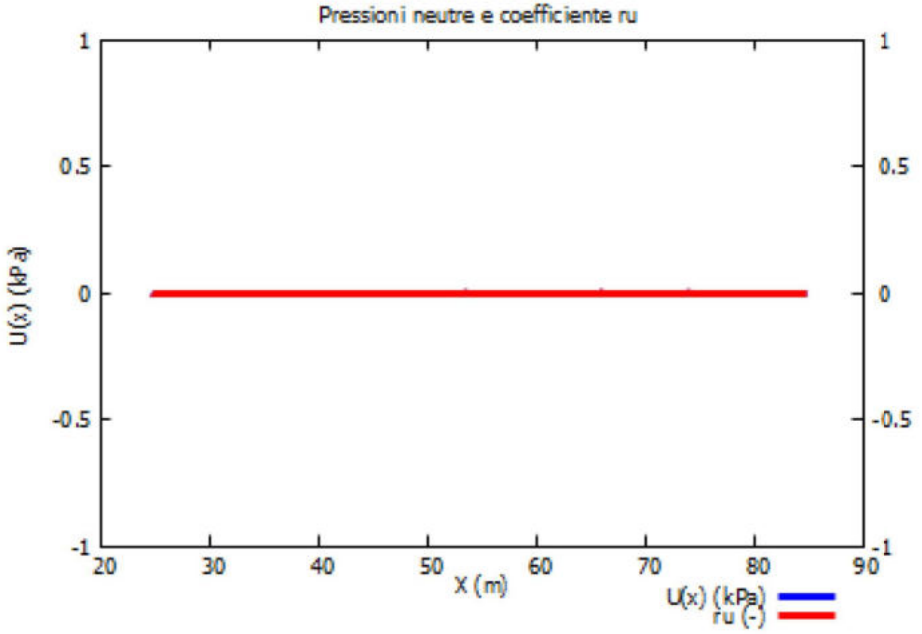
Fs minimo : 1.7601
Range Fs : 1.7601 1.7736
Differenza % Range Fs : 0.76
Coefficiente Sismico orizzontale - Kh: 0.0250
Coefficiente Sismico verticale - Kv: 0.0125

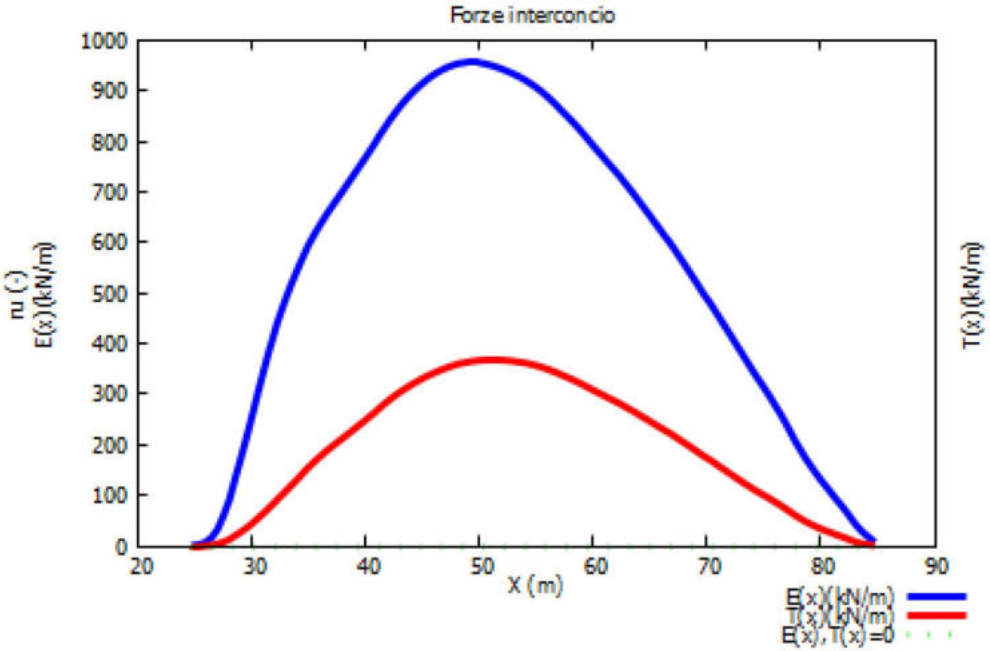
GENERAZIONE SUPERFICI RANDOM

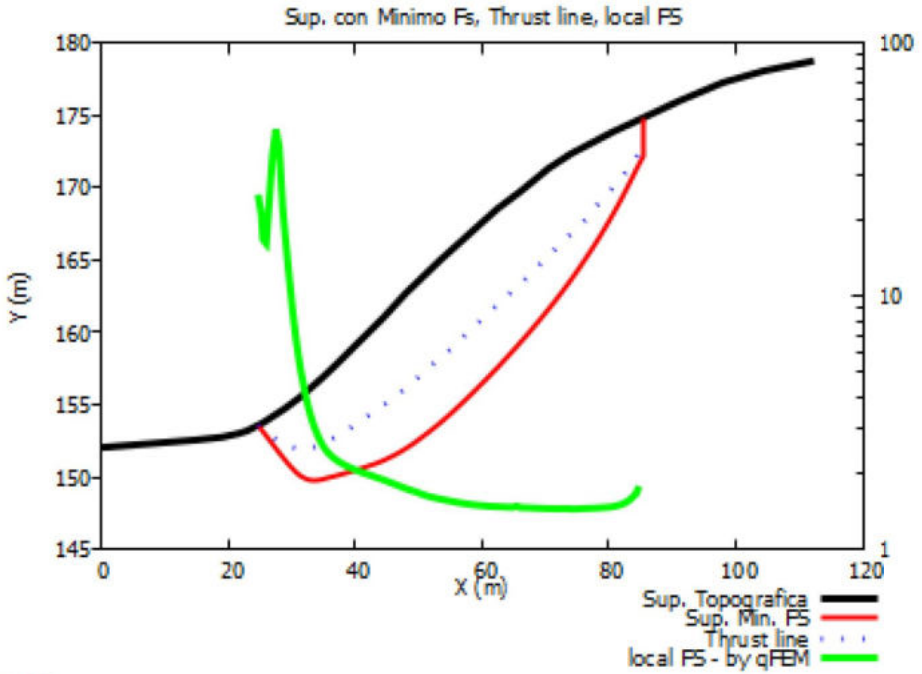
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 4.5
Range X inizio generazione : 2.2 - 103.4
Range X termine generazione : 13.5 - 110.1
Livello Y minimo considerato : 127.9

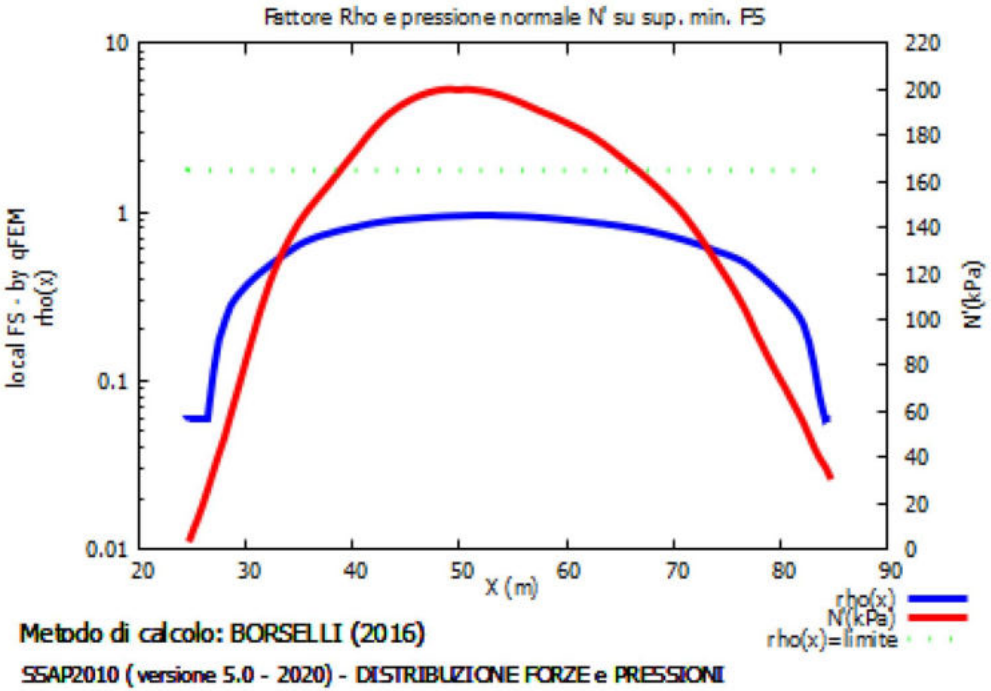
Parametri Geotecnici degli strati # ----------

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





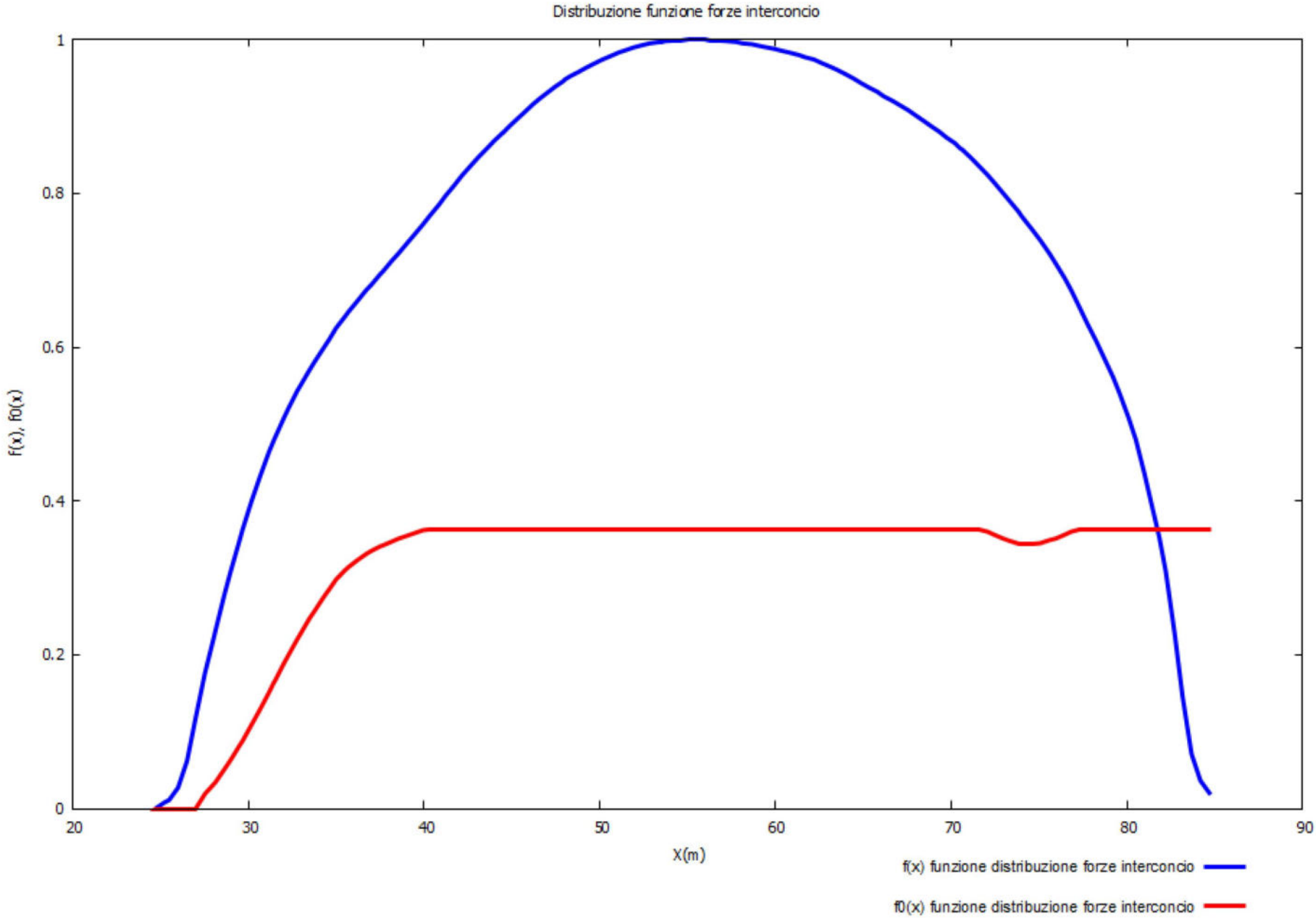


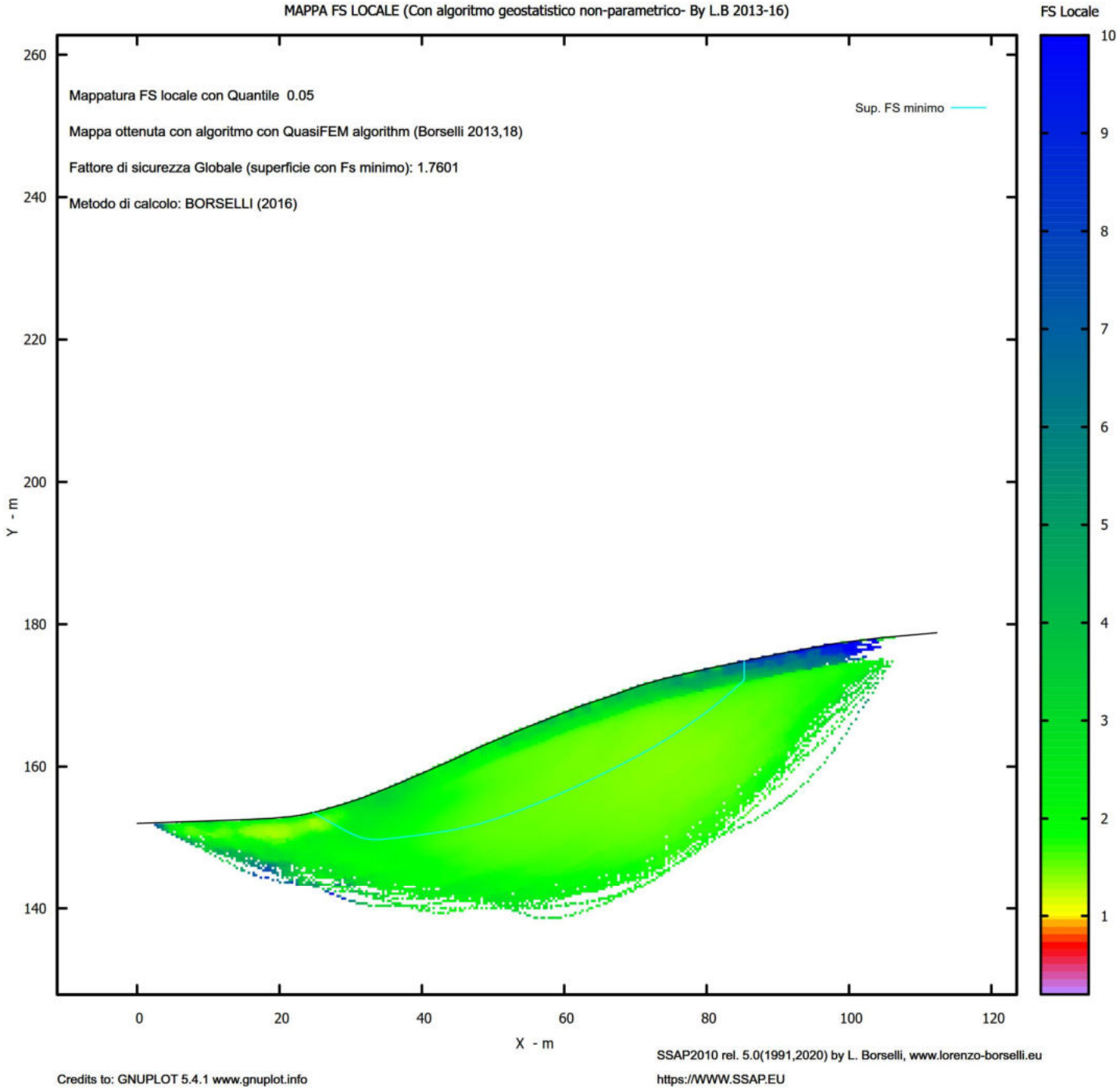


Metodo di calcolo: BORSELLI (2016)

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

14/11/21 11:29

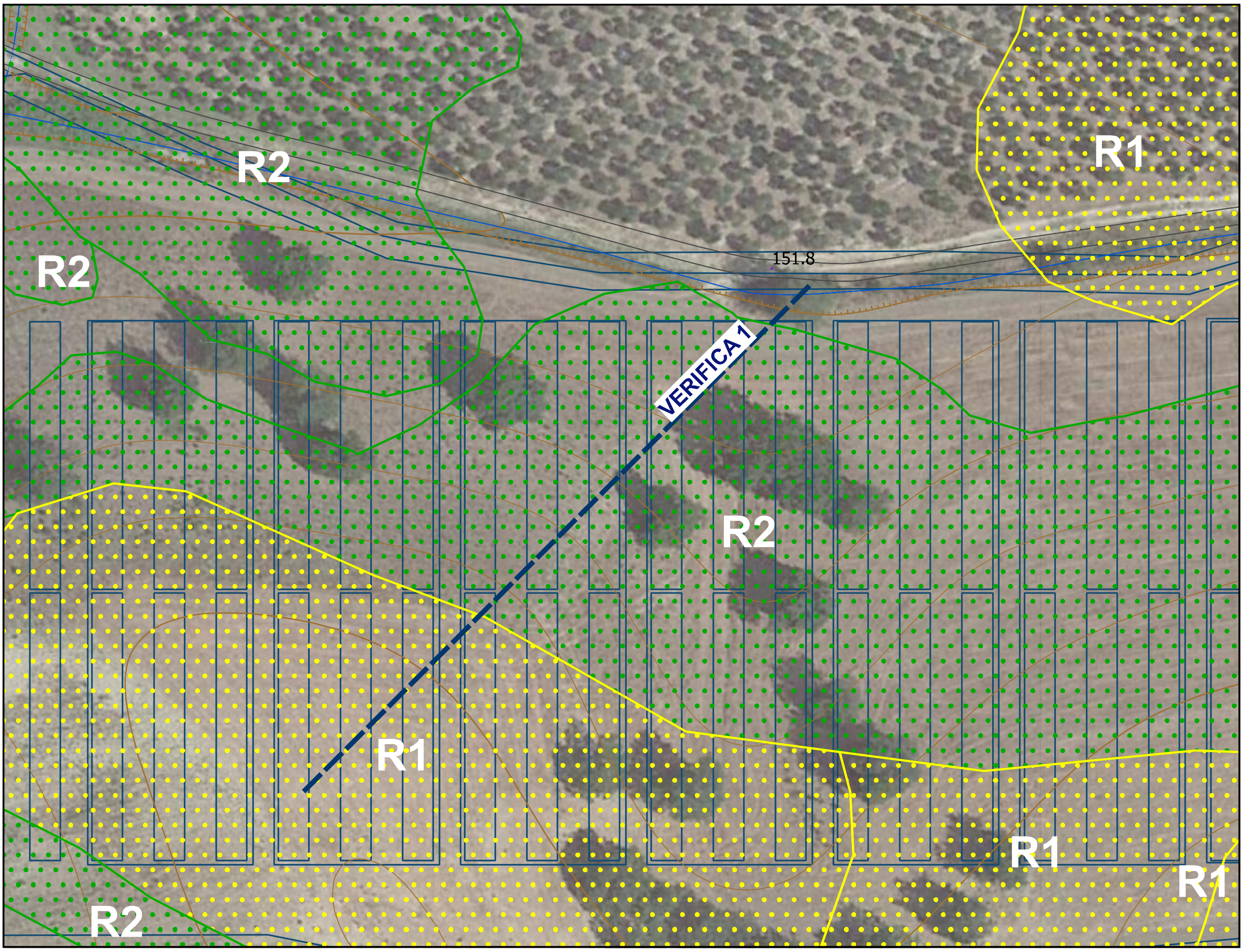

Distribuzione funzione forze interconcio
f(x), f0(x)
X(m)
0
0.2
0.4
0.6
0.8
1
20
30
40
50
60
70
80
90
f(x) funzione distribuzione forze interconcio
f0(x) funzione distribuzione forze interconcio


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): 1.7601
Metodo di calcolo: BORSELLI (2016)
Sup. FS minimo
Y - m
X - m
260
240
220
200
180
160
140
0
20
40
60
80
100
120
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

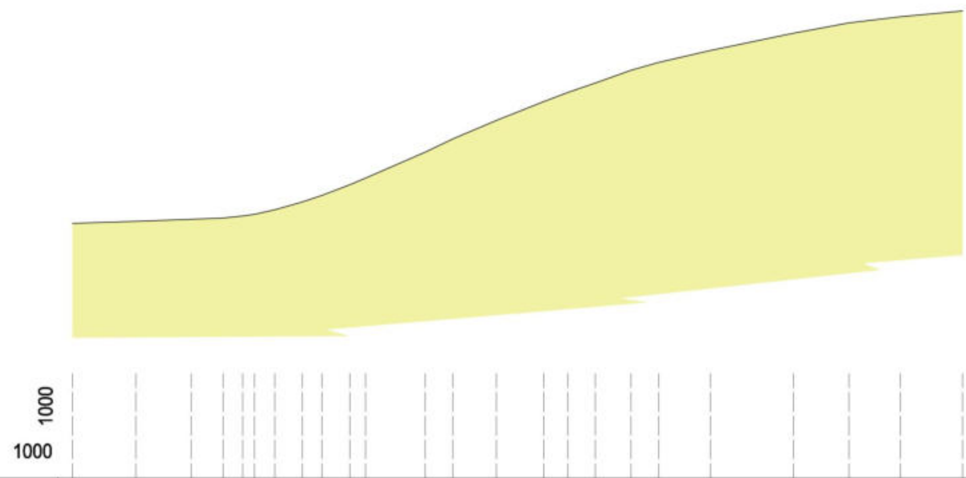
SEZIONE DI VERIFICA N. 1

CONDIZIONI NON DRENATE

SEZIONE DI VERIFICA N. 1



0 10 20 m



DISTANZE PROGRESSIVE	0	8	15	19	21.5	23	25.5	29	31.5	35	37	44.5	48	53.5	59.5	62.5	66	70.5	74	80.5	91	98	104.5	112.34
DISTANZE PARZIALI		8	7	4	2.5	1.5	2.5	3.5	2.5	3.5	2	7.5	3.5	5.5	6	3	3.5	4.5	3.5	6.5	10.5	7	6.5	7.84
QUOTE	152.03	152.31	152.55	152.74	152.98	153.18	153.75	154.74	155.56	156.92	157.75	161.03	162.7	165.03	167.4	168.57	169.73	171.36	172.36	173.86	176	177.3	178.11	178.8

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\MIADONNA\VERIFICA1\NONDRENATA\MORG\MORG.txt
Data: 14/11/2021
Localita' :
Descrizione:
Modello pendio: VERIFICA1NONDRENATA.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	152.03	-	-	-	-	-	-
8.00	152.31	-	-	-	-	-	-
15.00	152.55	-	-	-	-	-	-
19.00	152.74	-	-	-	-	-	-
21.50	152.98	-	-	-	-	-	-
23.00	153.18	-	-	-	-	-	-
25.50	153.74	-	-	-	-	-	-
29.00	154.74	-	-	-	-	-	-
31.50	155.56	-	-	-	-	-	-
35.00	156.92	-	-	-	-	-	-
37.00	157.75	-	-	-	-	-	-
44.50	161.03	-	-	-	-	-	-
48.00	162.70	-	-	-	-	-	-
53.50	165.03	-	-	-	-	-	-
59.50	167.40	-	-	-	-	-	-
62.50	168.57	-	-	-	-	-	-
66.00	169.73	-	-	-	-	-	-
70.50	171.35	-	-	-	-	-	-
74.00	172.36	-	-	-	-	-	-
80.50	173.85	-	-	-	-	-	-
91.00	176.00	-	-	-	-	-	-
98.00	177.30	-	-	-	-	-	-
104.50	178.11	-	-	-	-	-	-
112.34	178.80	-	-	-	-	-	-

ASSENZA DI FALDA

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

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

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

---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
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): 4.5 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 2.25 103.35
LIVELLO MINIMO CONSIDERATO (Ymin): 127.94
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 13.48 110.09

*** 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 : 0.0250
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0125
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) 1.2616 - Min. - X Y Lambda= 0.2067

X	Y
16.07	152.60
21.44	147.35
23.98	144.96
25.67	143.50
27.06	142.43
28.43	141.54
29.67	140.86
31.04	140.23
32.55	139.67
34.46	139.06
36.01	138.62
37.42	138.30
38.71	138.08
40.09	137.93
41.35	137.86
42.71	137.87
44.15	137.96
45.85	138.13
47.41	138.30
48.90	138.48
50.34	138.68
51.78	138.89
53.21	139.13
54.67	139.39
56.18	139.67
57.78	140.00
59.24	140.33
60.65	140.69
62.01	141.08
63.43	141.54
64.81	142.03
66.25	142.58
67.77	143.21
69.49	143.97
70.96	144.68
72.36	145.43
73.68	146.21
75.08	147.14
76.40	148.08
77.78	149.15
79.22	150.34
80.82	151.74
82.36	153.09
83.86	154.41
85.33	155.72
86.78	157.02
88.23	158.33
89.69	159.65
91.16	160.99
92.64	162.34
94.10	163.70
95.55	165.05

96.99	166.42
98.44	167.80
99.15	168.48
99.15	177.44

Fattore di sicurezza (FS) 1.2826 - N.2 -- X Y Lambda= 0.2167

15.99	152.60
24.93	145.75
28.96	142.82
31.50	141.20
33.47	140.19
35.54	139.47
37.26	139.09
39.28	138.91
41.61	138.93
44.78	139.15
47.37	139.41
49.70	139.73
51.84	140.12
54.07	140.64
56.17	141.22
58.40	141.94
60.78	142.80
63.54	143.88
65.93	144.90
68.18	145.97
70.32	147.07
72.55	148.34
74.68	149.65
76.91	151.12
79.24	152.76
81.84	154.69
84.23	156.52
86.54	158.35
88.79	160.19
91.06	162.13
93.56	164.35
96.39	166.95
97.78	168.27
97.78	177.26

Fattore di sicurezza (FS) 1.2856 - N.3 -- X Y Lambda= 0.1967

14.82	152.54
19.85	148.52
22.39	146.51
24.17	145.15
25.75	143.98
27.19	142.97
28.63	141.98
30.14	140.99
31.75	139.96
33.56	138.85
35.01	138.04
36.31	137.42
37.47	136.99
38.80	136.63
39.94	136.44
41.24	136.36
42.69	136.39
44.60	136.53
46.21	136.69
47.68	136.88
49.06	137.11
50.48	137.39
51.82	137.71
53.21	138.09
54.65	138.52
56.23	139.04
57.76	139.55
59.24	140.05
60.70	140.55
62.15	141.05
63.62	141.57
65.11	142.11
66.67	142.67
68.33	143.28
69.75	143.87

71.10	144.52
72.37	145.22
73.76	146.09
75.04	146.98
76.41	148.03
77.85	149.23
79.50	150.68
81.05	152.06
82.54	153.41
84.00	154.75
85.45	156.10
86.88	157.46
88.32	158.85
89.77	160.27
91.25	161.73
92.72	163.19
94.18	164.65
95.65	166.10
97.10	167.54
97.80	168.24
97.80	177.26

Fattore di sicurezza (FS) 1.3043 - N.4 -- X Y Lambda= 0.2021

13.32	152.49
20.59	146.25
23.94	143.49
26.11	141.89
27.85	140.81
29.62	139.95
31.14	139.38
32.89	138.93
34.86	138.60
37.47	138.32
39.57	138.16
41.45	138.11
43.17	138.16
45.00	138.32
46.68	138.56
48.47	138.92
50.37	139.39
52.59	140.02
54.65	140.63
56.61	141.24
58.52	141.85
60.42	142.48
62.33	143.15
64.30	143.85
66.37	144.62
68.62	145.47
70.50	146.29
72.27	147.20
73.92	148.18
75.74	149.42
77.41	150.70
79.20	152.21
81.08	153.94
83.25	156.06
85.32	158.09
87.31	160.05
89.28	161.99
91.19	163.88
93.36	166.02
95.45	168.10
95.45	176.83

Fattore di sicurezza (FS) 1.3132 - N.5 -- X Y Lambda= 0.1843

9.86	152.37
15.15	147.36
17.82	144.87
19.70	143.17
21.35	141.72
22.86	140.45
24.37	139.22
25.93	138.00
27.59	136.74
29.44	135.38
30.96	134.34

32.37	133.49
33.65	132.82
35.08	132.21
36.35	131.77
37.78	131.41
39.37	131.13
41.40	130.88
43.04	130.73
44.52	130.67
45.87	130.70
47.32	130.82
48.66	131.02
50.12	131.32
51.72	131.73
53.67	132.31
55.27	132.85
56.74	133.43
58.10	134.07
59.56	134.85
60.91	135.67
62.34	136.63
63.85	137.74
65.59	139.09
67.22	140.38
68.79	141.64
70.32	142.89
71.84	144.14
73.35	145.41
74.88	146.70
76.42	148.03
78.00	149.41
79.54	150.78
81.06	152.14
82.57	153.52
84.09	154.94
85.59	156.36
87.10	157.81
88.63	159.30
90.18	160.83
91.73	162.36
93.27	163.89
94.81	165.41
96.34	166.93
97.81	168.40
97.81	177.26

Fattore di sicurezza (FS) 1.3210 - N.6 -- X Y Lambda= 0.2017

6.48	152.26
16.17	145.93
20.62	143.18
23.51	141.61
25.82	140.58
28.18	139.83
30.22	139.38
32.53	139.10
35.11	138.99
38.45	139.04
41.26	139.15
43.83	139.33
46.23	139.60
48.71	139.97
51.09	140.41
53.59	140.97
56.26	141.66
59.31	142.53
61.93	143.38
64.40	144.28
66.73	145.26
69.19	146.42
71.53	147.65
73.99	149.06
76.60	150.68
79.57	152.64
82.24	154.48
84.77	156.34
87.21	158.22
89.72	160.27
92.42	162.63

95.53	165.48
98.77	168.57
98.77	177.40

Fattore di sicurezza (FS) 1.3230 - N.7 -- X Y Lambda= 0.2026

12.05	152.45
20.97	145.93
25.07	143.07
27.73	141.43
29.86	140.33
32.04	139.49
33.93	138.96
36.09	138.58
38.54	138.35
41.77	138.22
44.34	138.22
46.62	138.35
48.68	138.59
50.91	139.01
52.95	139.53
55.17	140.23
57.59	141.14
60.50	142.34
63.00	143.47
65.33	144.62
67.52	145.80
69.81	147.15
71.99	148.54
74.26	150.09
76.63	151.82
79.26	153.83
81.72	155.76
84.08	157.67
86.39	159.60
88.71	161.61
91.28	163.90
94.17	166.57
95.59	167.92
95.59	176.85

Fattore di sicurezza (FS) 1.3247 - N.8 -- X Y Lambda= 0.1846

7.02	152.28
14.51	146.72
18.10	144.15
20.53	142.55
22.57	141.34
24.55	140.34
26.39	139.52
28.38	138.77
30.56	138.08
33.22	137.34
35.37	136.83
37.33	136.48
39.10	136.28
41.05	136.19
42.82	136.23
44.76	136.40
46.88	136.70
49.49	137.19
51.68	137.67
53.71	138.20
55.60	138.78
57.59	139.50
59.47	140.27
61.46	141.17
63.58	142.23
66.01	143.52
68.15	144.74
70.18	145.98
72.11	147.25
74.12	148.66
76.05	150.10
78.04	151.68
80.10	153.40
82.35	155.37
84.50	157.28
86.58	159.16

88.63	161.04
90.68	162.96
92.96	165.14
95.51	167.63
96.26	168.37
96.26	176.98

Fattore di sicurezza (FS) 1.3251 - N.9 -- Lambda= 0.1914

X	Y
7.31	152.29
14.78	145.75
18.34	142.74
20.73	140.87
22.73	139.47
24.68	138.30
26.49	137.37
28.48	136.49
30.70	135.66
33.50	134.75
35.63	134.17
37.51	133.79
39.14	133.62
41.01	133.62
42.64	133.77
44.49	134.12
46.56	134.67
49.24	135.52
51.49	136.30
53.55	137.10
55.46	137.93
57.45	138.89
59.33	139.88
61.31	141.01
63.38	142.28
65.69	143.77
67.82	145.20
69.86	146.63
71.84	148.07
73.85	149.59
75.82	151.14
77.82	152.78
79.86	154.50
82.02	156.38
84.12	158.23
86.18	160.06
88.22	161.90
90.25	163.75
92.53	165.85
94.75	167.92
94.75	176.70

Fattore di sicurezza (FS) 1.3292 - N.10 -- Lambda= 0.2220

X	Y
11.34	152.42
17.73	147.38
20.73	145.12
22.70	143.77
24.31	142.82
25.92	142.05
27.34	141.51
28.93	141.04
30.67	140.67
32.88	140.31
34.74	140.06
36.44	139.90
38.03	139.81
39.69	139.79
41.26	139.84
42.92	139.96
44.70	140.15
46.75	140.44
48.53	140.74
50.20	141.09
51.78	141.48
53.44	141.97
55.01	142.49
56.66	143.11
58.38	143.83
60.31	144.69

62.11	145.52
63.84	146.35
65.52	147.19
67.22	148.06
68.90	148.95
70.59	149.88
72.33	150.86
74.14	151.91
75.88	152.94
77.59	153.98
79.28	155.02
80.98	156.10
82.68	157.20
84.40	158.35
86.17	159.54
88.03	160.83
89.75	162.07
91.42	163.34
93.05	164.64
94.73	166.05
96.56	167.67
97.29	168.34
97.29	177.17

---------- 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	11088.2	8789.2	1420.0	Surplus
2	1.283	10678.4	8325.6	1520.3	Surplus
3	1.286	11374.5	8847.6	1642.2	Surplus
4	1.304	10857.8	8324.5	1700.8	Surplus
5	1.313	13340.1	10158.3	2166.0	Surplus
6	1.321	11467.0	8680.6	1918.3	Surplus
7	1.323	10946.5	8274.2	1844.8	Surplus
8	1.325	11756.3	8874.6	1994.3	Surplus
9	1.325	12211.9	9215.7	2074.7	Surplus
10	1.329	10755.4	8091.5	1854.8	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 1420.0

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)
16.066	0.704	-44.34	5.15	0.00	0.00	0.00	100.00
16.771	0.704	-44.34	15.44	0.00	0.00	0.00	100.00
17.475	0.704	-44.34	25.73	0.00	0.00	0.00	100.00
18.179	0.704	-44.34	36.03	0.00	0.00	0.00	100.00
18.883	0.117	-44.34	6.96	0.00	0.00	0.00	100.00
19.000	0.704	-44.34	48.27	0.00	0.00	0.00	100.00
19.704	0.704	-44.34	59.05	0.00	0.00	0.00	100.00
20.408	0.704	-44.34	69.83	0.00	0.00	0.00	100.00
21.113	0.329	-44.34	36.27	0.00	0.00	0.00	100.00
21.441	0.059	-43.29	6.72	0.00	0.00	0.00	100.00
21.500	0.704	-43.29	86.52	0.00	0.00	0.00	100.00
22.204	0.704	-43.29	97.32	0.00	0.00	0.00	100.00
22.908	0.092	-43.29	13.44	0.00	0.00	0.00	100.00
23.000	0.704	-43.29	109.97	0.00	0.00	0.00	100.00
23.704	0.276	-43.29	46.35	0.00	0.00	0.00	100.00
23.981	0.704	-40.85	125.89	0.00	0.00	0.00	100.00
24.685	0.704	-40.85	136.83	0.00	0.00	0.00	100.00
25.389	0.111	-40.85	22.55	0.00	0.00	0.00	100.00
25.500	0.167	-40.85	34.56	0.00	0.00	0.00	100.00
25.667	0.704	-37.53	152.06	0.00	0.00	0.00	100.00

26.372	0.689	-37.53	159.00	0.00	0.00	0.00	100.00
27.061	0.704	-32.94	172.39	0.00	0.00	0.00	100.00
27.765	0.670	-32.94	172.71	0.00	0.00	0.00	100.00
28.435	0.565	-28.87	151.98	0.00	0.00	0.00	100.00
29.000	0.670	-28.87	187.25	0.00	0.00	0.00	100.00
29.670	0.704	-24.46	205.07	0.00	0.00	0.00	100.00
30.374	0.665	-24.46	200.72	0.00	0.00	0.00	100.00
31.038	0.462	-20.55	143.39	0.00	0.00	0.00	100.00
31.500	0.704	-20.55	224.88	0.00	0.00	0.00	100.00
32.204	0.342	-20.55	111.83	0.00	0.00	0.00	100.00
32.546	0.704	-17.65	235.99	0.00	0.00	0.00	100.00
33.250	0.704	-17.65	243.08	0.00	0.00	0.00	100.00
33.954	0.503	-17.65	177.99	0.00	0.00	0.00	100.00
34.457	0.543	-15.70	195.95	0.00	0.00	0.00	100.00
35.000	0.704	-15.70	260.38	0.00	0.00	0.00	100.00
35.704	0.309	-15.70	116.32	0.00	0.00	0.00	100.00
36.013	0.704	-12.98	270.18	0.00	0.00	0.00	100.00
36.717	0.283	-12.98	110.35	0.00	0.00	0.00	100.00
37.000	0.420	-12.98	165.63	0.00	0.00	0.00	100.00
37.420	0.704	-9.69	283.08	0.00	0.00	0.00	100.00
38.124	0.582	-9.69	238.43	0.00	0.00	0.00	100.00
38.705	0.704	-6.26	293.92	0.00	0.00	0.00	100.00
39.410	0.680	-6.26	288.96	0.00	0.00	0.00	100.00
40.090	0.704	-2.94	304.43	0.00	0.00	0.00	100.00
40.794	0.557	-2.94	244.18	0.00	0.00	0.00	100.00
41.351	0.704	0.45	312.92	0.00	0.00	0.00	100.00
42.055	0.651	0.45	292.99	0.00	0.00	0.00	100.00
42.706	0.704	3.37	320.96	0.00	0.00	0.00	100.00
43.410	0.704	3.37	324.76	0.00	0.00	0.00	100.00
44.114	0.032	3.37	14.91	0.00	0.00	0.00	100.00
44.146	0.354	5.65	164.58	0.00	0.00	0.00	100.00
44.500	0.704	5.65	330.44	0.00	0.00	0.00	100.00
45.204	0.646	5.65	306.38	0.00	0.00	0.00	100.00
45.850	0.704	6.29	337.67	0.00	0.00	0.00	100.00
46.554	0.704	6.29	341.35	0.00	0.00	0.00	100.00
47.259	0.154	6.29	75.24	0.00	0.00	0.00	100.00
47.413	0.587	7.01	288.08	0.00	0.00	0.00	100.00
48.000	0.704	7.01	348.48	0.00	0.00	0.00	100.00
48.704	0.195	7.01	96.81	0.00	0.00	0.00	100.00
48.899	0.704	7.77	352.26	0.00	0.00	0.00	100.00
49.603	0.704	7.77	355.15	0.00	0.00	0.00	100.00
50.307	0.032	7.77	16.34	0.00	0.00	0.00	100.00
50.340	0.704	8.55	358.10	0.00	0.00	0.00	100.00
51.044	0.704	8.55	360.84	0.00	0.00	0.00	100.00
51.748	0.032	8.55	16.32	0.00	0.00	0.00	100.00
51.780	0.704	9.31	363.64	0.00	0.00	0.00	100.00
52.484	0.704	9.31	366.25	0.00	0.00	0.00	100.00
53.188	0.020	9.31	10.33	0.00	0.00	0.00	100.00
53.208	0.292	10.05	152.63	0.00	0.00	0.00	100.00
53.500	0.704	10.05	369.75	0.00	0.00	0.00	100.00
54.204	0.464	10.05	244.57	0.00	0.00	0.00	100.00
54.668	0.704	10.76	373.31	0.00	0.00	0.00	100.00
55.372	0.704	10.76	375.37	0.00	0.00	0.00	100.00
56.076	0.099	10.76	53.09	0.00	0.00	0.00	100.00
56.176	0.704	11.41	377.66	0.00	0.00	0.00	100.00
56.880	0.704	11.41	379.60	0.00	0.00	0.00	100.00
57.584	0.197	11.41	106.66	0.00	0.00	0.00	100.00
57.781	0.704	12.82	381.95	0.00	0.00	0.00	100.00
58.486	0.704	12.82	383.63	0.00	0.00	0.00	100.00
59.190	0.051	12.82	27.62	0.00	0.00	0.00	100.00
59.240	0.260	14.41	141.90	0.00	0.00	0.00	100.00
59.500	0.704	14.41	385.77	0.00	0.00	0.00	100.00
60.204	0.446	14.41	245.26	0.00	0.00	0.00	100.00
60.651	0.704	16.11	387.80	0.00	0.00	0.00	100.00
61.355	0.657	16.11	362.62	0.00	0.00	0.00	100.00
62.012	0.488	17.77	270.00	0.00	0.00	0.00	100.00
62.500	0.704	17.77	389.79	0.00	0.00	0.00	100.00
63.204	0.229	17.77	126.65	0.00	0.00	0.00	100.00
63.433	0.704	19.45	389.77	0.00	0.00	0.00	100.00
64.137	0.673	19.45	372.22	0.00	0.00	0.00	100.00
64.810	0.704	21.06	389.18	0.00	0.00	0.00	100.00
65.514	0.486	21.06	268.05	0.00	0.00	0.00	100.00
66.000	0.251	21.06	138.20	0.00	0.00	0.00	100.00
66.251	0.704	22.52	388.18	0.00	0.00	0.00	100.00
66.955	0.704	22.52	387.63	0.00	0.00	0.00	100.00
67.659	0.115	22.52	63.16	0.00	0.00	0.00	100.00
67.774	0.704	23.72	386.87	0.00	0.00	0.00	100.00
68.478	0.704	23.72	386.07	0.00	0.00	0.00	100.00
69.182	0.306	23.72	167.47	0.00	0.00	0.00	100.00

69.488	0.704	25.77	384.71	0.00	0.00	0.00	100.00
70.193	0.307	25.77	167.59	0.00	0.00	0.00	100.00
70.500	0.464	25.77	252.25	0.00	0.00	0.00	100.00
70.964	0.704	28.21	381.03	0.00	0.00	0.00	100.00
71.668	0.693	28.21	372.27	0.00	0.00	0.00	100.00
72.361	0.704	30.82	375.79	0.00	0.00	0.00	100.00
73.065	0.613	30.82	324.68	0.00	0.00	0.00	100.00
73.678	0.322	33.29	169.42	0.00	0.00	0.00	100.00
74.000	0.704	33.29	367.72	0.00	0.00	0.00	100.00
74.704	0.378	33.29	195.66	0.00	0.00	0.00	100.00
75.082	0.704	35.58	360.82	0.00	0.00	0.00	100.00
75.787	0.614	35.58	310.76	0.00	0.00	0.00	100.00
76.401	0.704	37.77	351.39	0.00	0.00	0.00	100.00
77.105	0.676	37.77	332.04	0.00	0.00	0.00	100.00
77.781	0.704	39.63	340.38	0.00	0.00	0.00	100.00
78.485	0.704	39.63	334.36	0.00	0.00	0.00	100.00
79.189	0.029	39.63	13.73	0.00	0.00	0.00	100.00
79.219	0.704	41.14	327.87	0.00	0.00	0.00	100.00
79.923	0.577	41.14	263.88	0.00	0.00	0.00	100.00
80.500	0.321	41.14	144.86	0.00	0.00	0.00	100.00
80.821	0.704	41.31	312.88	0.00	0.00	0.00	100.00
81.525	0.704	41.31	306.11	0.00	0.00	0.00	100.00
82.229	0.132	41.31	56.60	0.00	0.00	0.00	100.00
82.361	0.704	41.48	298.05	0.00	0.00	0.00	100.00
83.066	0.704	41.48	291.23	0.00	0.00	0.00	100.00
83.770	0.085	41.48	34.78	0.00	0.00	0.00	100.00
83.855	0.704	41.66	283.55	0.00	0.00	0.00	100.00
84.559	0.704	41.66	276.67	0.00	0.00	0.00	100.00
85.264	0.064	41.66	24.86	0.00	0.00	0.00	100.00
85.328	0.704	41.84	269.14	0.00	0.00	0.00	100.00
86.032	0.704	41.84	262.20	0.00	0.00	0.00	100.00
86.736	0.043	41.84	15.71	0.00	0.00	0.00	100.00
86.779	0.704	42.01	254.82	0.00	0.00	0.00	100.00
87.483	0.704	42.01	247.83	0.00	0.00	0.00	100.00
88.187	0.046	42.01	15.87	0.00	0.00	0.00	100.00
88.233	0.704	42.18	240.36	0.00	0.00	0.00	100.00
88.938	0.704	42.18	233.32	0.00	0.00	0.00	100.00
89.642	0.048	42.18	15.71	0.00	0.00	0.00	100.00
89.690	0.704	42.35	225.76	0.00	0.00	0.00	100.00
90.394	0.606	42.35	188.52	0.00	0.00	0.00	100.00
91.000	0.157	42.35	48.05	0.00	0.00	0.00	100.00
91.157	0.704	42.52	210.81	0.00	0.00	0.00	100.00
91.861	0.704	42.52	203.47	0.00	0.00	0.00	100.00
92.566	0.069	42.52	19.64	0.00	0.00	0.00	100.00
92.635	0.704	42.79	195.36	0.00	0.00	0.00	100.00
93.339	0.704	42.79	187.93	0.00	0.00	0.00	100.00
94.043	0.053	42.79	13.74	0.00	0.00	0.00	100.00
94.096	0.704	43.07	179.90	0.00	0.00	0.00	100.00
94.800	0.704	43.07	172.37	0.00	0.00	0.00	100.00
95.505	0.042	43.07	10.11	0.00	0.00	0.00	100.00
95.547	0.704	43.34	164.35	0.00	0.00	0.00	100.00
96.251	0.704	43.34	156.74	0.00	0.00	0.00	100.00
96.955	0.038	43.34	8.20	0.00	0.00	0.00	100.00
96.993	0.704	43.62	148.67	0.00	0.00	0.00	100.00
97.697	0.303	43.62	61.52	0.00	0.00	0.00	100.00
98.000	0.443	43.62	87.35	0.00	0.00	0.00	100.00
98.443	0.704	43.98	132.06	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 (--)
16.066	0.000	152.601	-0.718	0.0000000000E+000	0.0000000000E+000	4.6426132082E+002	0.042		

2.694 3.036
16.771 0.181 152.093 -0.718 2.6085814006E+002 3.0292108815E-001 2.7656088879E+002 0.042
2.694 3.036
17.475 0.366 151.590 -0.772 3.8953021725E+002 1.7663135923E+000 2.1273893844E+002 0.042
1.386 1.563
18.179 0.470 151.005 -0.742 5.6049647746E+002 7.0626920655E+000 2.3239785220E+002 0.042
0.927 1.044
18.883 0.697 150.544 -0.675 7.1685772278E+002 1.5566890719E+001 2.8226274282E+002 0.068
0.784 0.883
19.000 0.718 150.451 -0.718 7.5093634918E+002 1.7791385094E+001 2.8930197362E+002 0.075
0.768 0.864
19.704 0.910 149.955 -0.681 9.4219262191E+002 3.1263659250E+001 2.7413933676E+002 0.105
0.705 0.793
20.408 1.135 149.492 -0.634 1.1370558611E+003 4.6545986580E+001 2.8017931288E+002 0.130
0.678 0.761
21.113 1.393 149.061 -0.591 1.3368193137E+003 6.3770013389E+001 2.6001333389E+002 0.153
0.670 0.750
21.441 1.535 148.882 -0.550 1.4186330276E+003 7.0696061648E+001 2.6555542025E+002 0.158
0.664 0.743
21.500 1.556 148.848 -0.543 1.4343913479E+003 7.2067810199E+001 2.6795090594E+002 0.160
0.664 0.742
22.204 1.839 148.468 -0.525 1.6183203127E+003 8.8568326678E+001 2.6202184180E+002 0.173
0.662 0.738
22.908 2.143 148.108 -0.511 1.8034436221E+003 1.0619171990E+002 2.7249382521E+002 0.186
0.670 0.743
23.000 2.183 148.061 -0.491 1.8284969826E+003 1.0867589348E+002 2.7362165089E+002 0.188
0.672 0.745
23.704 2.502 147.718 -0.486 2.0205262544E+003 1.2839342370E+002 2.7805032629E+002 0.199
0.692 0.760
23.981 2.629 147.585 -0.446 2.0979496442E+003 1.3664312580E+002 2.7808767339E+002 0.204
0.702 0.768
24.685 2.934 147.280 -0.425 2.2900722413E+003 1.5867293376E+002 2.7788032403E+002 0.217
0.735 0.794
25.389 3.249 146.986 -0.417 2.4893382583E+003 1.8303727918E+002 2.9059049469E+002 0.231
0.778 0.824
25.500 3.300 146.941 -0.395 2.5217059109E+003 1.8725187253E+002 2.8926993563E+002 0.234
0.786 0.830
25.667 3.379 146.876 -0.403 2.5694975334E+003 1.9358117216E+002 2.9009730487E+002 0.237
0.798 0.838
26.372 3.634 146.590 -0.380 2.7875299992E+003 2.2353417463E+002 3.0747150755E+002 0.256
0.862 0.876
27.061 3.921 146.347 -0.349 2.9979261873E+003 2.5554791116E+002 3.1712923338E+002 0.274
0.941 0.915
27.765 4.134 146.104 -0.324 3.2297123567E+003 2.9351644859E+002 3.2584879974E+002 0.298
1.051 0.962
28.435 4.366 145.902 -0.286 3.4459302960E+003 3.3155805553E+002 3.1808171336E+002 0.321
1.184 1.007
29.000 4.526 145.751 -0.242 3.6234909304E+003 3.6451640867E+002 3.0893429582E+002 0.340
1.322 1.046
29.670 4.747 145.602 -0.208 3.8261959797E+003 4.0470332479E+002 3.0393665605E+002 0.362
1.534 1.094
30.374 4.930 145.464 -0.162 4.0411261719E+003 4.4928382297E+002 2.7542979026E+002 0.387
1.844 1.150
31.038 5.149 145.381 -0.113 4.2054953897E+003 4.8542507699E+002 2.4356510856E+002 0.404
2.172 1.197
31.500 5.277 145.337 -0.080 4.3167264928E+003 5.1083268178E+002 2.3555803892E+002 0.416
2.460 1.232
32.204 5.492 145.288 -0.063 4.4768330881E+003 5.4843617046E+002 2.2607295141E+002 0.431
3.002 1.290
32.546 5.603 145.271 -0.039 4.5538389731E+003 5.6692626109E+002 2.2308408821E+002 0.439
3.338 1.321
33.250 5.803 145.246 -0.025 4.7075007596E+003 6.0436913880E+002 2.1246229102E+002 0.454
4.171 1.391
33.954 6.017 145.236 -0.008 4.8530876584E+003 6.4045807949E+002 1.9350489804E+002 0.467
5.210 1.469
34.457 6.178 145.237 0.008 4.9456818963E+003 6.6372743741E+002 1.8204542188E+002 0.474
5.972 1.524
35.000 6.337 145.244 0.021 5.0432913114E+003 6.8860873055E+002 1.7671788337E+002 0.482
6.747 1.591
35.704 6.555 145.263 0.031 5.1648582223E+003 7.2021004667E+002 1.7197885093E+002 0.491
7.467 1.684
36.013 6.654 145.276 0.050 5.2178516487E+003 7.3430583230E+002 1.6730853970E+002 0.495
7.603 1.729
36.717 6.854 145.314 0.056 5.3286249378E+003 7.6466710142E+002 1.4995400543E+002 0.503
7.268 1.834
37.000 6.937 145.331 0.072 5.3702092567E+003 7.7632891278E+002 1.4853602378E+002 0.506
7.007 1.878
37.420 7.067 145.364 0.089 5.4334795304E+003 7.9467042360E+002 1.4569492673E+002 0.511
6.470 1.948

38.124	7.253	145.431	0.104	5.5300414748E+003	8.2401373213E+002	1.3491423196E+002	0.518	5.544	2.070
38.705	7.420	145.498	0.133	5.6074645858E+003	8.4880253634E+002	1.3389077286E+002	0.524	4.865	2.178
39.410	7.601	145.602	0.170	5.7024331876E+003	8.8122939371E+002	1.3224774188E+002	0.534	4.180	2.327
40.090	7.806	145.732	0.199	5.7906349996E+003	9.1407643271E+002	1.2299829508E+002	0.545	3.659	2.477
40.794	7.988	145.878	0.211	5.8723424877E+003	9.4648344002E+002	1.0518149124E+002	0.555	3.277	2.629
41.351	8.137	145.998	0.220	5.9261377320E+003	9.6949724178E+002	9.1142623450E+001	0.561	3.075	2.728
42.055	8.289	146.156	0.225	5.9854544525E+003	9.9651811946E+002	7.2391582870E+001	0.569	2.892	2.832
42.706	8.432	146.304	0.233	6.0254459708E+003	1.0171553513E+003	5.6204295551E+001	0.574	2.793	2.881
43.410	8.558	146.472	0.239	6.0610263048E+003	1.0375036967E+003	4.4466119507E+001	0.578	2.708	2.899
44.114	8.685	146.640	0.239	6.0880755684E+003	1.0549974691E+003	3.4359114387E+001	0.581	2.643	2.882
44.146	8.691	146.648	0.249	6.0891741021E+003	1.0557724657E+003	3.3948533807E+001	0.581	2.640	2.880
44.500	8.744	146.736	0.252	6.1003034376E+003	1.0639208780E+003	2.9499010203E+001	0.583	2.609	2.858
45.204	8.853	146.915	0.269	6.1183213232E+003	1.0789329310E+003	2.3431205192E+001	0.584	2.551	2.794
45.850	8.973	147.099	0.281	6.1321788581E+003	1.0927159223E+003	1.8804602967E+001	0.585	2.493	2.711
46.554	9.092	147.295	0.286	6.1433857364E+003	1.1062086761E+003	1.3915175803E+001	0.586	2.432	2.613
47.259	9.220	147.501	0.290	6.1517780916E+003	1.1191660270E+003	9.6188945629E+000	0.587	2.368	2.505
47.413	9.246	147.544	0.289	6.1531837871E+003	1.1217588174E+003	8.7582292359E+000	0.587	2.354	2.481
48.000	9.345	147.715	0.304	6.1575274247E+003	1.1316248677E+003	5.8841314074E+000	0.587	2.301	2.390
48.704	9.481	147.937	0.318	6.1603935611E+003	1.1434667496E+003	2.2420017727E+000	0.588	2.234	2.276
48.899	9.520	148.000	0.304	6.1607315341E+003	1.1466670323E+003	1.1770776790E+000	0.588	2.215	2.244
49.603	9.634	148.210	0.285	6.1601333000E+003	1.1566040529E+003	-2.5851073618E+000	0.588	2.154	2.143
50.307	9.729	148.402	0.271	6.1570904646E+003	1.1647724309E+003	-5.1518619430E+000	0.588	2.099	2.055
50.340	9.733	148.410	0.263	6.1569229825E+003	1.1650898317E+003	-5.2833135343E+000	0.588	2.097	2.051
51.044	9.813	148.596	0.274	6.1517673416E+003	1.1721758992E+003	-9.3487874314E+000	0.587	2.046	1.972
51.748	9.906	148.795	0.283	6.1437554113E+003	1.1789094610E+003	-1.1901571896E+001	0.586	1.993	1.892
51.780	9.910	148.803	0.281	6.1433770794E+003	1.1791772106E+003	-1.2034123718E+001	0.585	1.990	1.889
52.484	9.993	149.002	0.280	6.1331996576E+003	1.1851071325E+003	-1.6291709707E+001	0.584	1.939	1.816
53.188	10.073	149.197	0.277	6.1204305476E+003	1.1899042063E+003	-1.9068245528E+001	0.582	1.891	1.750
53.208	10.075	149.202	0.271	6.1200527521E+003	1.1900228276E+003	-1.9145257762E+001	0.582	1.889	1.748
53.500	10.102	149.282	0.277	6.1142444956E+003	1.1917565842E+003	-2.0782171804E+001	0.582	1.870	1.722
54.204	10.174	149.479	0.299	6.0980992412E+003	1.1954605192E+003	-2.7991127790E+001	0.580	1.822	1.661
54.668	10.245	149.631	0.331	6.0835785031E+003	1.1975927873E+003	-3.2513789414E+001	0.579	1.786	1.617
55.372	10.345	149.865	0.326	6.0594093776E+003	1.2002475687E+003	-3.5626721000E+001	0.577	1.730	1.554
56.076	10.436	150.090	0.316	6.0333990130E+003	1.2017665620E+003	-3.6458800326E+001	0.574	1.678	1.498
56.176	10.447	150.120	0.317	6.0297852193E+003	1.2019020110E+003	-3.6944277558E+001	0.574	1.671	1.491
56.880	10.530	150.345	0.313	6.0010083082E+003	1.2024418012E+003	-4.2209558386E+001	0.571	1.620	1.441
57.584	10.604	150.561	0.308	5.9703339407E+003	1.2018464660E+003	-4.6920858350E+001	0.568	1.571	1.398
57.781	10.626	150.622	0.312	5.9608936570E+003	1.2014400289E+003	-4.8377437544E+001	0.567	1.557	1.386
58.486	10.685	150.842	0.303	5.9255309030E+003	1.1993686675E+003	-5.1898331311E+001	0.564	1.509	1.348
59.190	10.732	151.050	0.295	5.8877959447E+003	1.1957917841E+003	-5.7925617978E+001	0.560		

1.463	1.315						
59.240	10.736	151.065	0.292	5.8848503298E+003	1.1954663908E+003	-5.8106542278E+001	0.559
1.460	1.313						
59.500	10.745	151.140	0.294	5.8699370750E+003	1.1937392534E+003	-5.8595369796E+001	0.558
1.444	1.302						
60.204	10.772	151.349	0.300	5.8264537241E+003	1.1881558826E+003	-6.5369650046E+001	0.553
1.400	1.273						
60.651	10.794	151.486	0.327	5.7962423708E+003	1.1838754469E+003	-7.2634260565E+001	0.550
1.373	1.255						
61.355	10.830	151.724	0.344	5.7395731882E+003	1.1749460175E+003	-8.5109089533E+001	0.544
1.328	1.227						
62.012	10.869	151.954	0.354	5.6808251398E+003	1.1647552357E+003	-9.3742182905E+001	0.538
1.287	1.202						
62.500	10.889	152.130	0.368	5.6334991431E+003	1.1561479961E+003	-1.0075931874E+002	0.534
1.258	1.184						
63.204	10.926	152.392	0.370	5.5586620124E+003	1.1417484061E+003	-1.0905531943E+002	0.527
1.218	1.160						
63.433	10.936	152.476	0.349	5.5335044873E+003	1.1368003473E+003	-1.1200047782E+002	0.525
1.206	1.152						
64.137	10.930	152.718	0.344	5.4502088409E+003	1.1200190990E+003	-1.1871357451E+002	0.517
1.169	1.129						
64.810	10.924	152.950	0.354	5.3700471173E+003	1.1032940440E+003	-1.1936624291E+002	0.510
1.141	1.111						
65.514	10.909	153.206	0.364	5.2858107879E+003	1.0854304892E+003	-1.2298782756E+002	0.502
1.114	1.094						
66.000	10.898	153.383	0.368	5.2249572964E+003	1.0723149112E+003	-1.3070583008E+002	0.497
1.098	1.084						
66.251	10.896	153.477	0.388	5.1915154172E+003	1.0650530265E+003	-1.3271226123E+002	0.493
1.089	1.079						
66.955	10.880	153.753	0.393	5.0995880722E+003	1.0449854519E+003	-1.3030229630E+002	0.485
1.067	1.065						
67.659	10.865	154.030	0.393	5.0079873630E+003	1.0247589752E+003	-1.2722090717E+002	0.476
1.047	1.054						
67.774	10.862	154.075	0.370	4.9934299939E+003	1.0215182581E+003	-1.2788921542E+002	0.475
1.044	1.053						
68.478	10.811	154.333	0.364	4.8984725846E+003	1.0002149624E+003	-1.3731033963E+002	0.466
1.026	1.043						
69.182	10.757	154.588	0.364	4.8000312575E+003	9.7769070685E+002	-1.4282648038E+002	0.456
1.009	1.035						
69.488	10.735	154.700	0.383	4.7559300269E+003	9.6746242465E+002	-1.4781495621E+002	0.452
1.002	1.032						
70.193	10.670	154.975	0.401	4.6458889906E+003	9.4163781391E+002	-1.6805062831E+002	0.441
0.985	1.025						
70.500	10.652	155.106	0.417	4.5926317663E+003	9.2898297770E+002	-1.7240675348E+002	0.436
0.978	1.022						
70.964	10.619	155.297	0.410	4.5132020612E+003	9.0993274541E+002	-1.7231563848E+002	0.428
0.967	1.019						
71.668	10.529	155.585	0.416	4.3906671950E+003	8.8013988915E+002	-1.7921352736E+002	0.417
0.953	1.015						
72.361	10.451	155.878	0.425	4.2630013530E+003	8.4876206168E+002	-1.8681481215E+002	0.405
0.940	1.012						
73.065	10.331	156.179	0.422	4.1296698024E+003	8.1571342961E+002	-1.8865859784E+002	0.392
0.929	1.010						
73.678	10.221	156.434	0.419	4.0143436133E+003	7.8689559524E+002	-1.9127278060E+002	0.381
0.922	1.009						
74.000	10.146	156.571	0.454	3.9522408565E+003	7.7131140719E+002	-1.9970274800E+002	0.375
0.919	1.010						
74.704	10.013	156.900	0.472	3.8011976080E+003	7.3325762005E+002	-2.1852549052E+002	0.361
0.914	1.012						
75.082	9.946	157.081	0.483	3.7177488846E+003	7.1220837694E+002	-2.2161577801E+002	0.353
0.913	1.013						
75.787	9.784	157.423	0.492	3.5604759234E+003	6.7268990353E+002	-2.2597505351E+002	0.338
0.912	1.018						
76.401	9.651	157.730	0.500	3.4202371827E+003	6.3778395139E+002	-2.2779112120E+002	0.324
0.914	1.023						
77.105	9.458	158.082	0.519	3.2602190907E+003	5.9836845296E+002	-2.3406652148E+002	0.309
0.918	1.030						
77.781	9.298	158.446	0.538	3.0975991958E+003	5.5904393528E+002	-2.3912319009E+002	0.293
0.923	1.038						
78.485	9.094	158.825	0.535	2.9303089961E+003	5.1930832070E+002	-2.3322848875E+002	0.277
0.930	1.048						
79.189	8.884	159.199	0.530	2.7691017561E+003	4.8201929335E+002	-2.1616879928E+002	0.262
0.939	1.058						
79.219	8.875	159.213	0.523	2.7628054371E+003	4.8059421934E+002	-2.1581752768E+002	0.261
0.939	1.059						
79.923	8.629	159.583	0.515	2.6078121851E+003	4.4594446737E+002	-2.1258956386E+002	0.247
0.948	1.070						
80.500	8.416	159.874	0.519	2.4886609330E+003	4.2003282761E+002	-2.1409180000E+002	0.237
0.956	1.079						

80.821	8.310	160.048	0.527	2.4185686678E+003	4.0499092764E+002	-2.1391913041E+002	0.230
0.961	1.085						
81.525	8.057	160.414	0.532	2.2747552874E+003	3.7469734856E+002	-2.0568534290E+002	0.218
0.972	1.097						
82.229	7.821	160.797	0.540	2.1288651719E+003	3.4458942636E+002	-1.9583285159E+002	0.205
0.984	1.110						
82.361	7.773	160.866	0.541	2.1033076345E+003	3.3938053118E+002	-1.9473168994E+002	0.203
0.986	1.113						
83.066	7.535	161.250	0.565	1.9623322984E+003	3.1088665279E+002	-2.0348207320E+002	0.190
0.998	1.126						
83.770	7.324	161.662	0.582	1.8167073978E+003	2.8198465938E+002	-1.9706134781E+002	0.176
1.011	1.141						
83.855	7.297	161.710	0.565	1.8000155741E+003	2.7869997656E+002	-1.9543102221E+002	0.175
1.012	1.143						
84.559	7.068	162.108	0.572	1.6650276408E+003	2.5248144450E+002	-1.8944208033E+002	0.162
1.025	1.157						
85.264	6.850	162.516	0.577	1.5331903732E+003	2.2751049447E+002	-1.7738064932E+002	0.150
1.038	1.171						
85.328	6.828	162.551	0.558	1.5218697735E+003	2.2538629386E+002	-1.7611304986E+002	0.149
1.039	1.173						
86.032	6.591	162.944	0.573	1.4007260365E+003	2.0308332688E+002	-1.7212160858E+002	0.138
1.052	1.187						
86.736	6.374	163.358	0.585	1.2794400941E+003	1.8138299260E+002	-1.5841781026E+002	0.126
1.066	1.203						
86.779	6.359	163.381	0.577	1.2726967705E+003	1.8019077591E+002	-1.5787121889E+002	0.125
1.067	1.204						
87.483	6.133	163.789	0.584	1.1581304847E+003	1.6023616724E+002	-1.5945628165E+002	0.115
1.082	1.221						
88.187	5.913	164.204	0.587	1.0481059388E+003	1.4172365647E+002	-1.4369284154E+002	0.104
1.099	1.240						
88.233	5.897	164.229	0.589	1.0415625701E+003	1.4063921931E+002	-1.4330208556E+002	0.104
1.100	1.241						
88.938	5.676	164.646	0.593	9.3604484971E+002	1.2334945092E+002	-1.4572347483E+002	0.094
1.119	1.262						
89.642	5.457	165.065	0.592	8.3631410910E+002	1.0751860948E+002	-1.2975303646E+002	0.084
1.141	1.287						
89.690	5.440	165.092	0.597	8.3009765187E+002	1.0654504515E+002	-1.2938307462E+002	0.084
1.142	1.289						
90.394	5.220	165.514	0.600	7.3443325128E+002	9.1699527254E+001	-1.3141309061E+002	0.074
1.168	1.317						
91.000	5.032	165.878	0.596	6.5713376709E+002	8.0026810840E+001	-1.2075136872E+002	0.067
1.193	1.346						
91.157	4.980	165.969	0.598	6.3843386260E+002	7.7231862325E+001	-1.1937440945E+002	0.065
1.200	1.354						
91.861	4.759	166.394	0.600	5.5309975023E+002	6.4607065365E+001	-1.1641237397E+002	0.056
1.234	1.392						
92.566	4.534	166.814	0.593	4.7446947297E+002	5.3285917989E+001	-1.0127610501E+002	0.048
1.274	1.437						
92.635	4.508	166.853	0.609	4.6751654908E+002	5.2295236111E+001	-1.0088406547E+002	0.047
1.278	1.442						
93.339	4.290	167.286	0.598	3.9196589573E+002	4.1716815375E+001	-1.0062288491E+002	0.042
1.325	1.495						
94.043	4.047	167.695	0.578	3.2579132397E+002	3.2790532055E+001	-8.3737550525E+001	0.042
1.375	1.551						
94.096	4.027	167.723	0.581	3.2142599721E+002	3.2211132286E+001	-8.3776286216E+001	0.042
1.379	1.555						
94.800	3.781	168.136	0.575	2.5485899370E+002	2.3184434133E+001	-8.9090225286E+001	0.042
1.436	1.620						
95.505	3.520	168.533	0.560	1.9594428154E+002	1.5506549846E+001	-6.7798820700E+001	0.042
1.499	1.692						
95.547	3.501	168.554	0.553	1.9311804426E+002	1.5154474730E+001	-6.7237123613E+001	0.042
1.503	1.696						
96.251	3.229	168.946	0.545	1.4118782801E+002	8.9253450434E+000	-6.8647516985E+001	0.042
1.575	1.777						
96.955	2.940	169.322	0.531	9.6429454915E+001	4.1457562142E+000	-5.4503414696E+001	0.042
1.654	1.866						
96.993	2.923	169.340	0.522	9.4386469978E+001	3.9493555180E+000	-5.3895590477E+001	0.042
1.659	1.872						
97.697	2.621	169.709	0.535	5.8026663335E+001	1.1390173477E+000	-4.6388167073E+001	0.042
1.745	1.968						
98.000	2.502	169.879	0.577	4.4671040624E+001	5.8230545524E-001	-4.1837235601E+001	0.042
1.765	1.991						
98.443	2.340	170.139	0.577	2.7631003905E+001	1.9703739240E-001	-3.8767164790E+001	0.042
1.848	2.085						

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)
16.066	0.704	0.985	-44.345	-3.560	-3.505	100.271	98.742
16.771	0.704	0.985	-44.345	-10.679	-10.516	101.310	99.765
17.475	0.704	0.985	-44.345	-17.798	-17.526	104.743	103.145
18.179	0.704	0.985	-44.345	-24.917	-24.537	107.615	105.974
18.883	0.117	0.163	-44.345	-29.066	-4.740	112.029	18.268
19.000	0.704	0.985	-44.345	-33.383	-32.874	112.064	110.355
19.704	0.704	0.985	-44.345	-40.839	-40.216	113.685	111.951
20.408	0.704	0.985	-44.345	-48.295	-47.559	115.423	113.663
21.113	0.329	0.459	-44.345	-53.763	-24.703	113.292	52.055
21.441	0.059	0.081	-43.290	-55.663	-4.488	114.718	9.249
21.500	0.704	0.968	-43.290	-59.688	-57.749	114.753	111.025
22.204	0.704	0.968	-43.290	-67.139	-64.958	115.757	111.996
22.908	0.092	0.126	-43.290	-71.349	-8.971	117.091	14.722
23.000	0.704	0.968	-43.290	-75.873	-73.408	117.629	113.807
23.704	0.276	0.380	-43.290	-81.497	-30.942	118.796	45.103
23.981	0.704	0.931	-40.853	-85.890	-79.968	119.525	111.284
24.685	0.704	0.931	-40.853	-93.350	-86.914	121.594	113.211
25.389	0.111	0.147	-40.853	-97.668	-14.323	123.715	18.143
25.500	0.167	0.221	-40.853	-99.192	-21.955	123.597	27.357
25.667	0.704	0.888	-37.533	-100.917	-89.621	125.922	111.827
26.372	0.689	0.869	-37.533	-107.865	-93.711	128.321	111.482
27.061	0.704	0.839	-32.936	-107.392	-90.113	131.037	109.953
27.765	0.670	0.798	-32.936	-113.091	-90.277	132.687	105.920
28.435	0.565	0.645	-28.870	-108.542	-70.053	131.105	84.615
29.000	0.670	0.765	-28.870	-112.882	-86.309	132.015	100.938
29.670	0.704	0.774	-24.458	-103.712	-80.238	130.097	100.651
30.374	0.665	0.730	-24.458	-107.576	-78.536	125.857	91.882
31.038	0.462	0.493	-20.548	-95.276	-46.973	122.820	60.553
31.500	0.704	0.752	-20.548	-97.953	-73.670	122.140	91.860
32.204	0.342	0.365	-20.548	-100.433	-36.634	122.446	44.664
32.546	0.704	0.739	-17.655	-89.233	-65.947	119.384	88.230
33.250	0.704	0.739	-17.655	-91.917	-67.931	118.683	87.712
33.954	0.503	0.528	-17.655	-94.218	-49.741	116.864	61.696
34.457	0.543	0.564	-15.697	-85.686	-48.299	115.066	64.860
35.000	0.704	0.732	-15.697	-87.737	-64.181	114.745	83.938
35.704	0.309	0.321	-15.697	-89.431	-28.672	115.007	36.871
36.013	0.704	0.723	-12.978	-74.850	-54.094	111.902	80.872
36.717	0.283	0.290	-12.978	-76.109	-22.094	111.382	32.333
37.000	0.420	0.431	-12.978	-77.023	-33.162	112.069	48.251
37.420	0.704	0.714	-9.691	-56.933	-40.675	108.722	77.675
38.124	0.582	0.590	-9.691	-58.055	-34.260	108.920	64.277
38.705	0.704	0.708	-6.261	-34.932	-24.748	106.297	75.308
39.410	0.680	0.684	-6.261	-35.574	-24.331	106.607	72.914
40.090	0.704	0.705	-2.942	-11.377	-8.022	102.975	72.615
40.794	0.557	0.558	-2.942	-11.541	-6.435	102.672	57.246
41.351	0.704	0.704	0.452	14.614	10.292	99.618	70.157
42.055	0.651	0.651	0.452	14.808	9.637	99.684	64.872
42.706	0.704	0.705	3.374	38.128	26.898	97.859	69.036
43.410	0.704	0.705	3.374	38.580	27.217	98.159	69.247
44.114	0.032	0.032	3.374	38.816	1.250	98.213	3.163
44.146	0.354	0.355	5.646	57.074	20.286	97.155	34.532
44.500	0.704	0.708	5.646	57.553	40.729	97.367	68.904
45.204	0.646	0.649	5.646	58.187	37.764	97.364	63.190
45.850	0.704	0.708	6.286	64.026	45.363	97.369	68.986
46.554	0.704	0.708	6.286	64.725	45.858	97.474	69.060
47.259	0.154	0.155	6.286	65.151	10.107	97.691	15.156
47.413	0.587	0.592	7.009	71.501	42.303	97.433	57.645
48.000	0.704	0.710	7.009	72.121	51.173	97.431	69.131
48.704	0.195	0.196	7.009	72.520	14.217	97.487	19.111
48.899	0.704	0.711	7.768	79.266	56.340	97.616	69.382
49.603	0.704	0.711	7.768	79.915	56.801	98.040	69.683
50.307	0.032	0.033	7.768	80.255	2.614	98.338	3.203
50.340	0.704	0.712	8.548	87.176	62.082	98.134	69.886

51.044	0.704	0.712	8.548	87.844	62.558	98.227	69.952
51.748	0.032	0.032	8.548	88.193	2.829	98.435	3.158
51.780	0.704	0.714	9.307	94.976	67.778	98.305	70.154
52.484	0.704	0.714	9.307	95.658	68.265	98.629	70.385
53.188	0.020	0.020	9.307	96.008	1.925	98.793	1.981
53.208	0.292	0.297	10.051	102.502	30.394	98.713	29.270
53.500	0.704	0.715	10.051	102.949	73.631	98.860	70.706
54.204	0.464	0.471	10.051	103.454	48.703	99.003	46.608
54.668	0.704	0.717	10.761	110.027	78.873	99.128	71.059
55.372	0.704	0.717	10.761	110.634	79.308	99.501	71.327
56.076	0.099	0.101	10.761	110.980	11.218	99.684	10.076
56.176	0.704	0.718	11.408	116.853	83.951	99.813	71.709
56.880	0.704	0.718	11.408	117.454	84.383	100.207	71.992
57.584	0.197	0.201	11.408	117.838	23.710	100.504	20.222
57.781	0.704	0.722	12.818	130.217	94.048	100.803	72.803
58.486	0.704	0.722	12.818	130.791	94.462	101.386	73.225
59.190	0.051	0.052	12.818	131.098	6.800	101.756	5.278
59.240	0.260	0.268	14.415	144.571	38.759	102.023	27.352
59.500	0.704	0.727	14.415	144.918	105.374	102.411	74.466
60.204	0.446	0.461	14.415	145.328	66.993	102.916	47.442
60.651	0.704	0.733	16.114	159.536	116.946	104.265	76.431
61.355	0.657	0.684	16.114	159.940	109.355	105.219	71.941
62.012	0.488	0.513	17.774	173.308	88.848	106.466	54.581
62.500	0.704	0.740	17.774	173.440	128.265	107.498	79.499
63.204	0.229	0.240	17.774	173.472	41.677	107.931	25.931
63.433	0.704	0.747	19.448	186.068	138.966	109.438	81.734
64.137	0.673	0.714	19.448	185.967	132.707	109.845	78.386
64.810	0.704	0.755	21.064	197.382	148.957	110.733	83.566
65.514	0.486	0.520	21.064	197.150	102.593	111.428	57.985
66.000	0.251	0.268	21.064	197.033	52.896	112.265	30.139
66.251	0.704	0.762	22.516	206.748	157.615	112.717	85.930
66.955	0.704	0.762	22.516	206.457	157.393	112.818	86.007
67.659	0.115	0.124	22.516	206.287	25.646	112.593	13.998
67.774	0.704	0.769	23.718	213.811	164.465	114.053	87.731
68.478	0.704	0.769	23.718	213.370	164.126	114.859	88.350
69.182	0.306	0.334	23.718	213.055	71.196	115.532	38.607
69.488	0.704	0.782	25.767	224.940	175.902	118.111	92.362
70.193	0.307	0.341	25.767	224.422	76.626	120.326	41.084
70.500	0.464	0.515	25.767	223.889	115.338	120.280	61.963
70.964	0.704	0.799	28.208	235.872	188.497	122.231	97.680
71.668	0.693	0.786	28.208	234.344	184.165	123.809	97.298
72.361	0.704	0.820	30.821	244.625	200.605	126.049	103.366
73.065	0.613	0.714	30.821	242.741	173.323	126.087	90.029
73.678	0.322	0.385	33.286	250.693	96.523	128.024	49.292
74.000	0.704	0.842	33.286	248.671	209.492	131.274	110.592
74.704	0.378	0.452	33.286	246.440	111.469	132.220	59.805
75.082	0.704	0.866	35.577	250.921	217.265	133.499	115.592
75.787	0.614	0.755	35.577	247.742	187.119	133.920	101.149
76.401	0.704	0.891	37.770	249.370	222.165	134.185	119.547
77.105	0.676	0.855	37.770	245.560	209.934	135.542	115.878
77.781	0.704	0.914	39.635	244.605	223.678	134.968	123.421
78.485	0.704	0.914	39.635	240.281	219.724	132.815	121.452
79.189	0.029	0.038	39.635	238.030	9.025	130.248	4.938
79.219	0.704	0.935	41.144	237.277	221.894	130.754	122.278
79.923	0.577	0.766	41.144	233.016	178.586	128.063	98.149
80.500	0.321	0.426	41.144	229.988	98.040	129.289	55.114
80.821	0.704	0.938	41.308	226.566	212.409	126.908	118.979
81.525	0.704	0.938	41.308	221.664	207.814	126.744	118.824
82.229	0.132	0.176	41.308	218.754	38.422	124.697	21.902
82.361	0.704	0.940	41.481	215.954	203.000	125.329	117.812
83.066	0.704	0.940	41.481	211.010	198.353	125.692	118.153
83.770	0.085	0.114	41.481	208.239	23.685	124.131	14.119
83.855	0.704	0.943	41.657	205.566	193.762	123.324	116.243
84.559	0.704	0.943	41.657	200.579	189.062	122.214	115.196
85.264	0.064	0.086	41.657	197.859	16.987	120.747	10.367
85.328	0.704	0.945	41.837	195.224	184.531	119.855	113.290
86.032	0.704	0.945	41.837	190.194	179.777	119.318	112.783
86.736	0.043	0.057	41.837	187.526	10.771	117.466	6.747
86.779	0.704	0.948	42.009	184.928	175.273	117.776	111.627
87.483	0.704	0.948	42.009	179.856	170.465	116.491	110.409
88.187	0.046	0.062	42.009	177.155	10.919	114.855	7.079
88.233	0.704	0.950	42.181	174.512	165.847	115.411	109.681
88.938	0.704	0.950	42.181	169.398	160.987	114.111	108.445
89.642	0.048	0.065	42.181	166.665	10.843	112.676	7.331
89.690	0.704	0.953	42.349	163.980	156.257	113.240	107.906
90.394	0.606	0.820	42.349	159.185	130.479	112.102	91.887
91.000	0.157	0.213	42.349	156.377	33.257	111.169	23.643
91.157	0.704	0.955	42.515	153.176	146.347	111.265	106.305
91.861	0.704	0.955	42.515	147.840	141.250	110.102	105.194

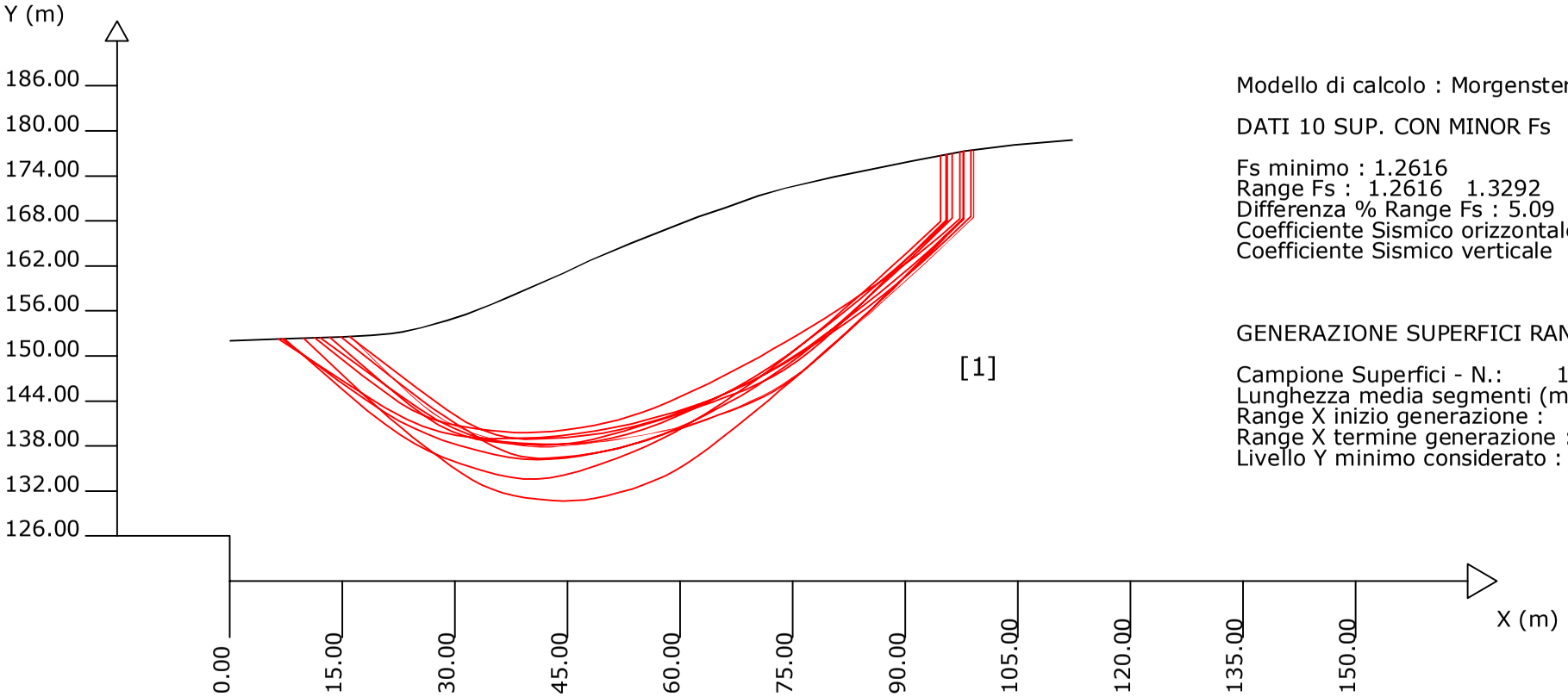
92.566	0.069	0.094	42.515	144.910	13.634	108.977	10.254
92.635	0.704	0.960	42.789	142.023	136.290	109.447	105.029
93.339	0.704	0.960	42.789	136.621	131.106	107.971	103.613
94.043	0.053	0.072	42.789	133.718	9.586	106.926	7.666
94.096	0.704	0.964	43.065	130.840	126.124	108.067	104.171
94.800	0.704	0.964	43.065	125.370	120.851	106.861	103.009
95.505	0.042	0.058	43.065	122.470	7.088	105.241	6.090
95.547	0.704	0.968	43.343	119.580	115.794	105.570	102.228
96.251	0.704	0.968	43.343	114.041	110.431	104.274	100.973
96.955	0.038	0.052	43.343	111.123	5.779	103.270	5.371
96.993	0.704	0.973	43.618	108.200	105.252	102.514	99.722
97.697	0.303	0.418	43.618	104.191	43.550	101.159	42.283
98.000	0.443	0.612	43.618	101.083	61.842	100.548	61.514
98.443	0.704	0.979	43.979	96.128	94.077	100.176	98.038

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 : 14/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Morgenstern - Price (1965)

DATI 10 SUP. CON MINOR Fs

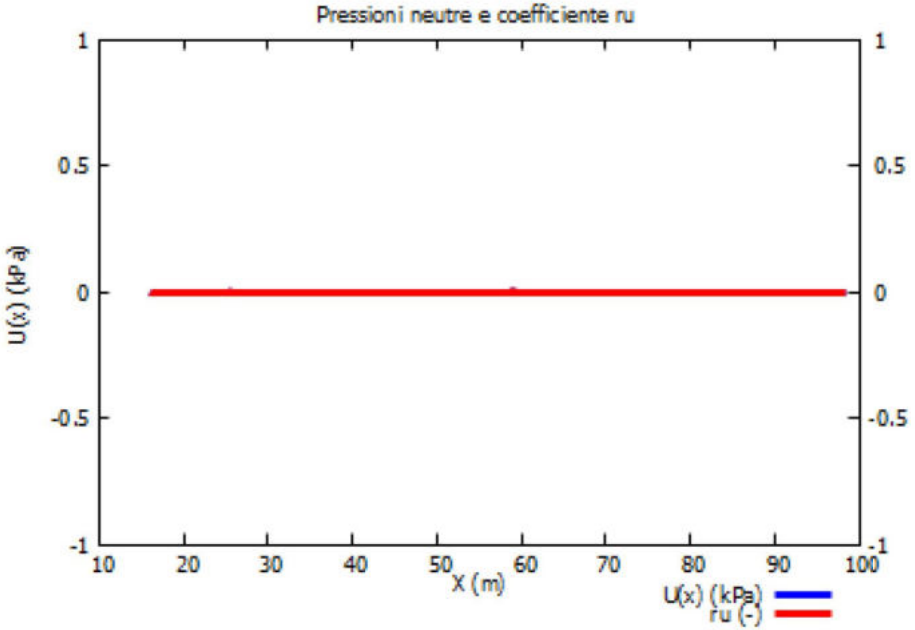
Fs minimo : 1.2616
Range Fs : 1.2616 1.3292
Differenza % Range Fs : 5.09
Coefficiente Sismico orizzontale - Kh: 0.0250
Coefficiente Sismico verticale - Kv: 0.0125

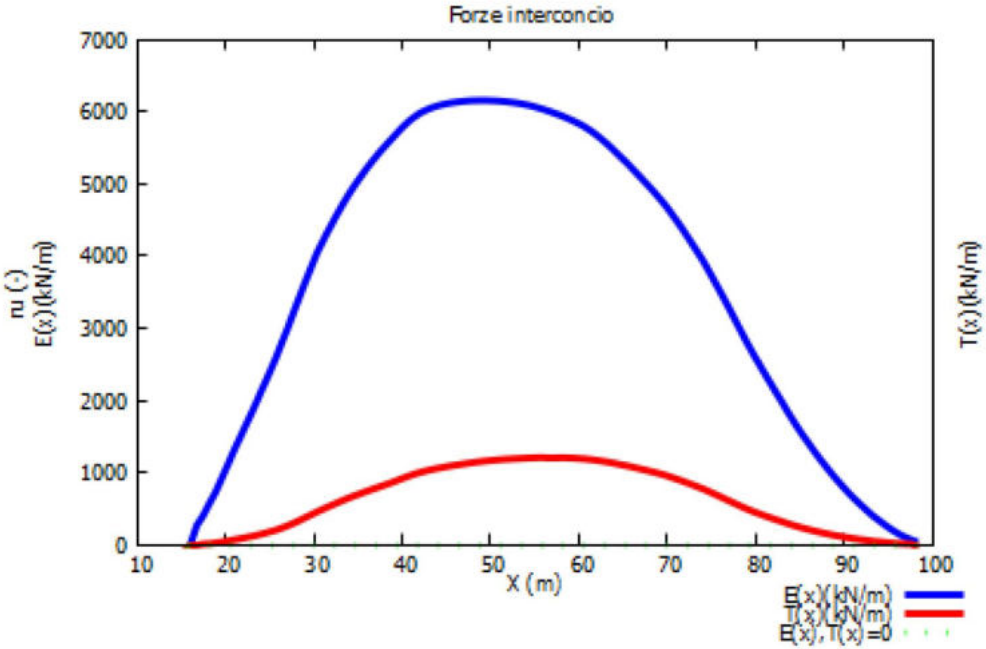
GENERAZIONE SUPERFICI RANDOM

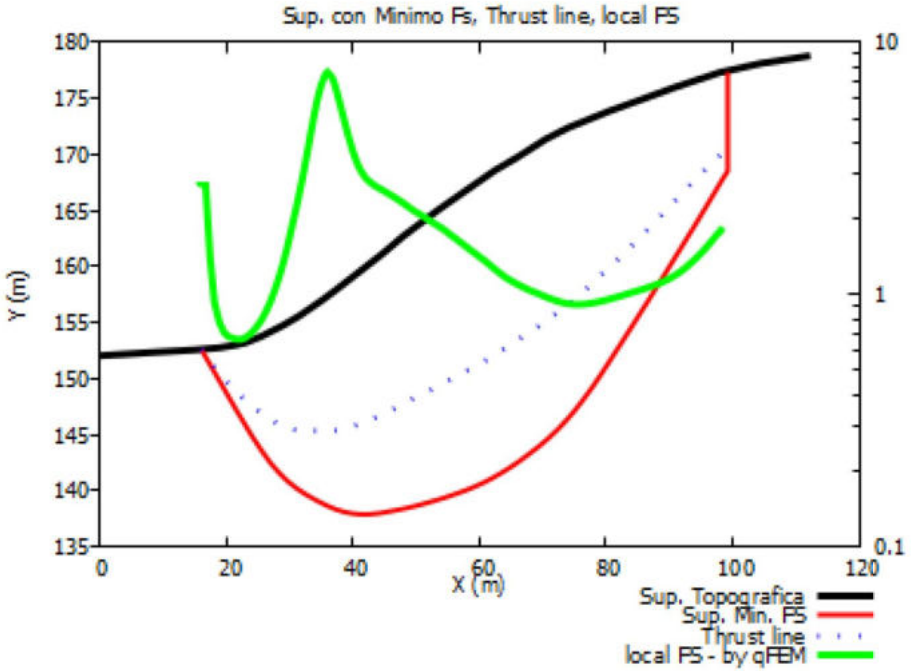
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 4.5
Range X inizio generazione : 2.2 - 103.4
Range X termine generazione : 13.5 - 110.1
Livello Y minimo considerato : 127.9

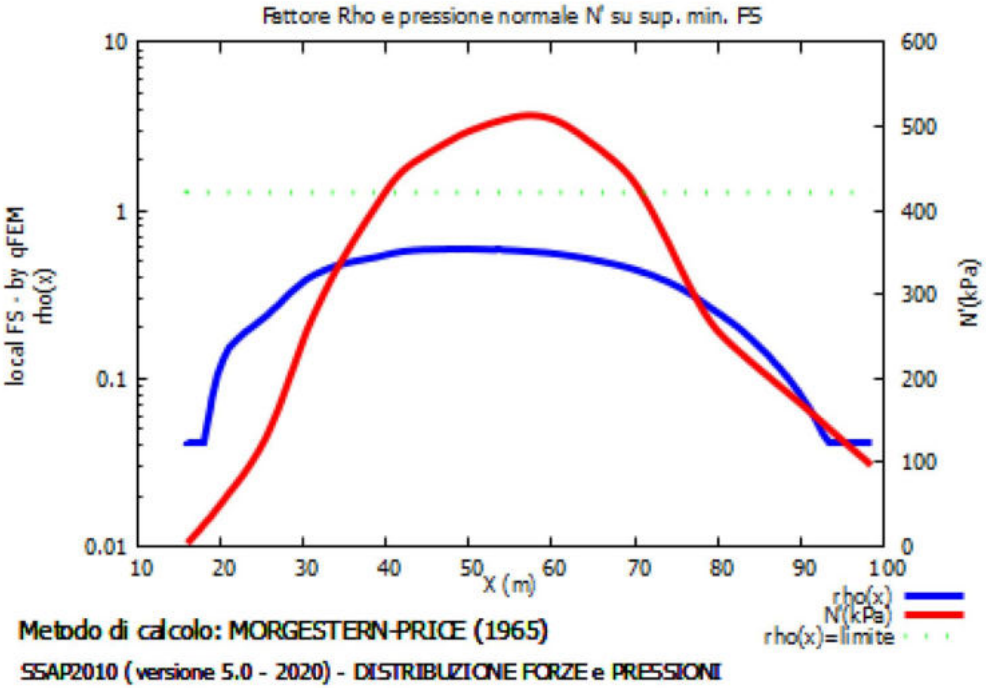
Parametri Geotecnici degli strati # ----------

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





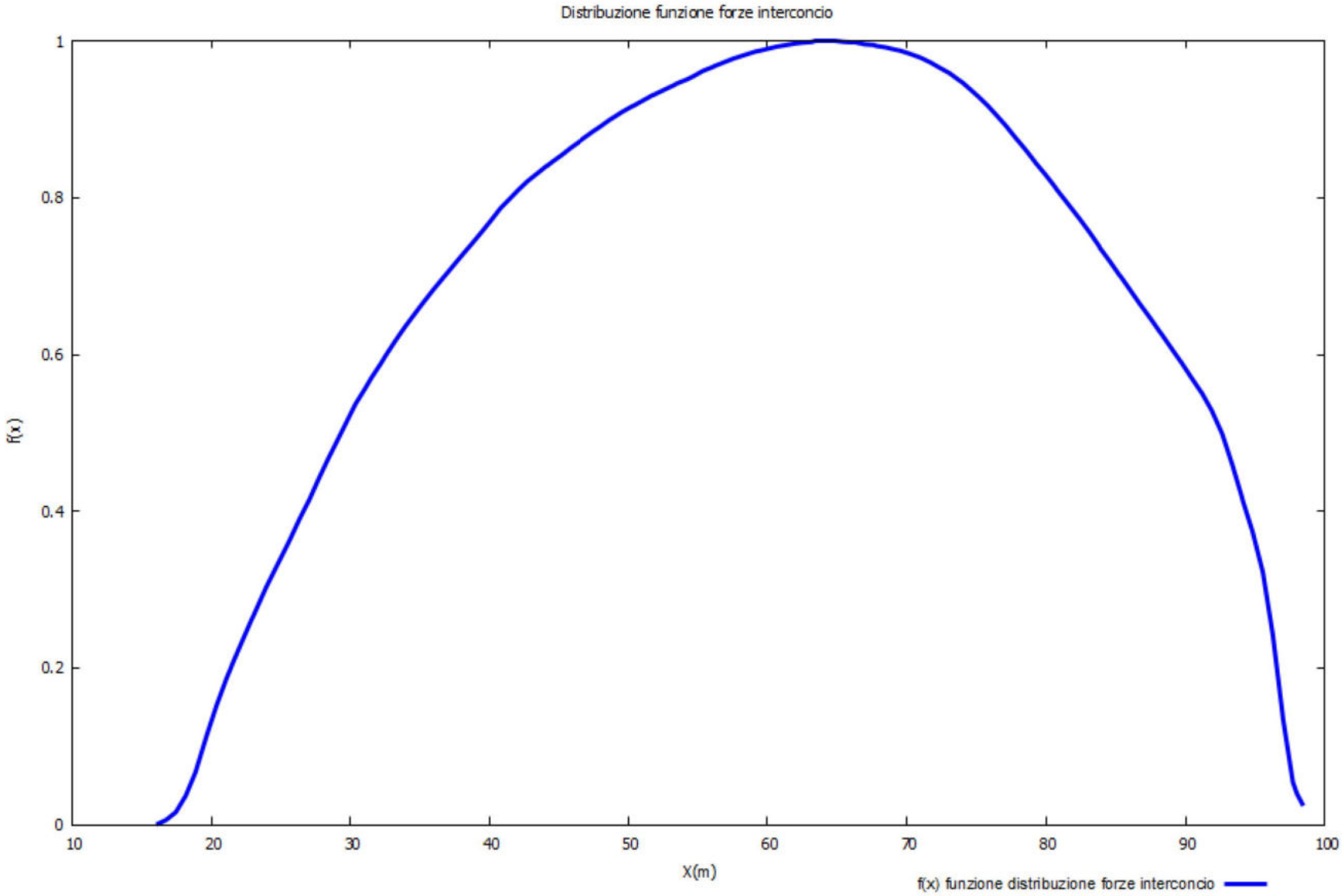


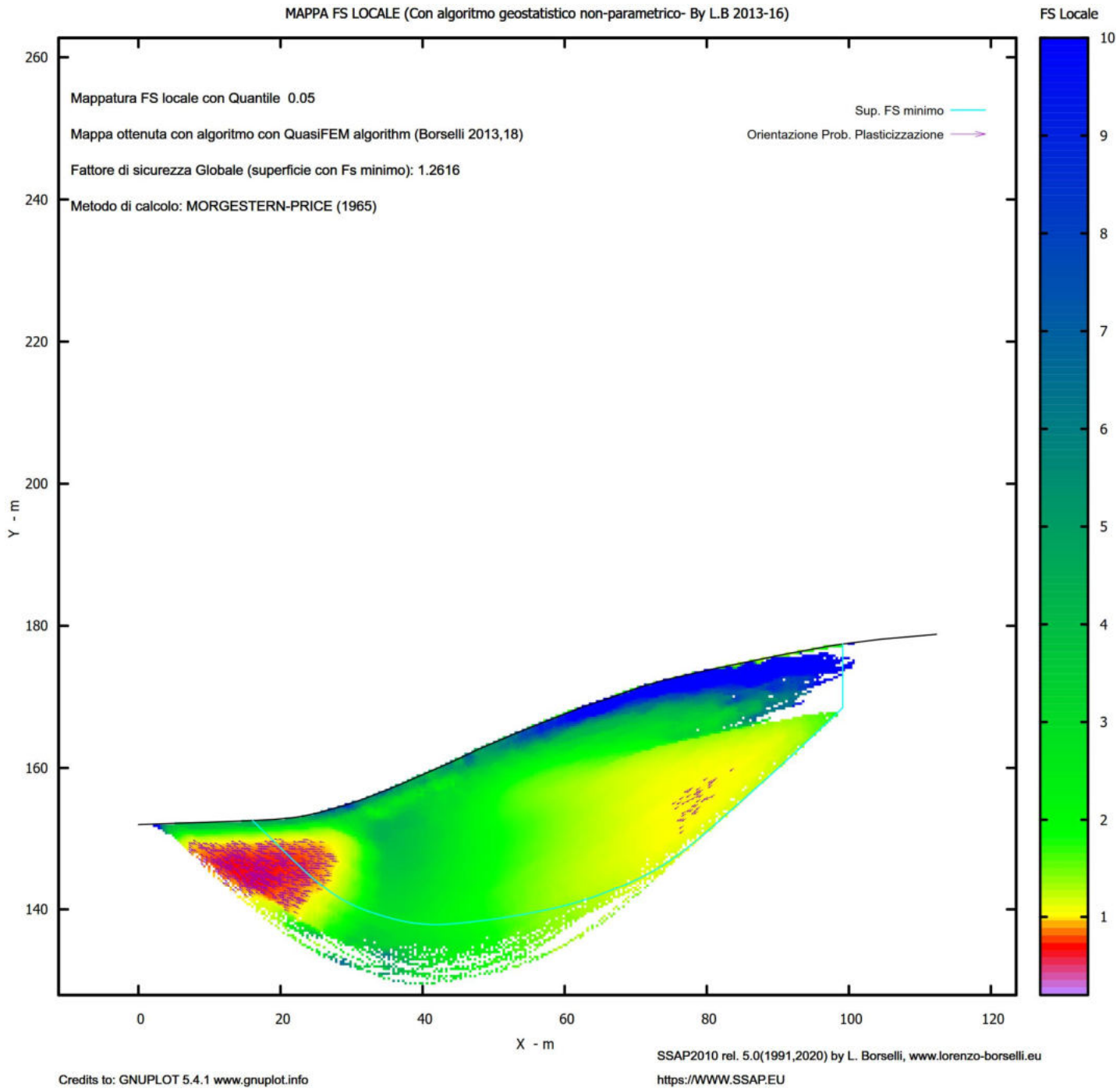


Metodo di calcolo: MORGESTERN-PRICE (1965)

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

14/11/21 11:36




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): 1.2616
Metodo di calcolo: MORGESTERN-PRICE (1965)
Sup. FS minimo
Orientazione Prob. Plasticizzazione
Y - m
X - m
260
240
220
200
180
160
140
0
20
40
60
80
100
120
10
9
8
7
6
5
4
3
2
1
SSAP2010 rel. 5.0(1991,2020) by L. Borselli, www.lorenzo-borselli.eu
https://WWW.SSAP.EU
Credits to: GNUPLOT 5.4.1 www.gnuplot.info

Report elaborazioni

```
-----------------------------------------------------------------
    SSAP 5.0 - 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\MIADONNA\VERIFICA1\NONDRENATA\BERSELLI\BERSELLI.txt
           Data: 14/11/2021
    Localita' :
    Descrizione:
 Modello pendio: VERIFICA1NONDRENATA.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  152.03     -       -       -       -       -       -
         8.00  152.31     -       -       -       -       -       -
        15.00  152.55     -       -       -       -       -       -
        19.00  152.74     -       -       -       -       -       -
        21.50  152.98     -       -       -       -       -       -
        23.00  153.18     -       -       -       -       -       -
        25.50  153.74     -       -       -       -       -       -
        29.00  154.74     -       -       -       -       -       -
        31.50  155.56     -       -       -       -       -       -
        35.00  156.92     -       -       -       -       -       -
        37.00  157.75     -       -       -       -       -       -
        44.50  161.03     -       -       -       -       -       -
        48.00  162.70     -       -       -       -       -       -
        53.50  165.03     -       -       -       -       -       -
        59.50  167.40     -       -       -       -       -       -
        62.50  168.57     -       -       -       -       -       -
        66.00  169.73     -       -       -       -       -       -
        70.50  171.35     -       -       -       -       -       -
        74.00  172.36     -       -       -       -       -       -
        80.50  173.85     -       -       -       -       -       -
        91.00  176.00     -       -       -       -       -       -
        98.00  177.30     -       -       -       -       -       -
       104.50  178.11     -       -       -       -       -       -
       112.34  178.80     -       -       -       -       -       -
  ## ASSENZA DI FALDA ##

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

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

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

  ------------ INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
  *** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
      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): 4.5 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 2.25 103.35
LIVELLO MINIMO CONSIDERATO (Ymin): 127.94
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 13.48 110.09

*** 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 : 0.0250
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0125
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) 1.2876 - Min. - X Y Lambda= 0.1728

X	Y
18.39	152.71
22.41	149.05
24.38	147.30
25.73	146.17
26.90	145.26
27.99	144.47
29.05	143.78
30.18	143.10
31.41	142.42
32.85	141.68
34.01	141.14
35.05	140.73
35.97	140.45
37.02	140.23
37.93	140.11
38.94	140.07
40.03	140.11
41.41	140.23
42.66	140.34
43.84	140.46
44.98	140.58
46.10	140.71
47.23	140.85
48.37	141.00
49.56	141.17
50.81	141.35
51.92	141.55
53.00	141.77
54.04	142.03
55.14	142.35
56.17	142.68
57.25	143.07
58.36	143.52
59.58	144.04
60.77	144.55
61.93	145.05
63.08	145.54
64.20	146.03
65.34	146.52
66.48	147.00
67.64	147.50
68.79	148.00
69.92	148.49
71.03	149.00
72.13	149.52
73.25	150.06
74.36	150.61
75.50	151.19
76.67	151.81
77.91	152.48
79.04	153.12
80.13	153.79

81.18	154.48
82.29	155.25
83.34	156.03
84.43	156.88
85.55	157.80
86.75	158.83
87.93	159.84
89.08	160.83
90.23	161.81
91.35	162.79
92.48	163.77
93.62	164.76
94.75	165.75
95.89	166.75
97.02	167.75
97.71	168.35
97.71	177.25

Fattore di sicurezza (FS) 1.2877 - N.2 -- X Y Lambda= 0.1662

9.94	152.38
13.82	148.69
15.76	146.87
17.13	145.64
18.33	144.59
19.42	143.68
20.52	142.81
21.68	141.93
22.92	141.01
24.33	140.02
25.44	139.30
26.43	138.74
27.31	138.35
28.32	138.01
29.17	137.83
30.14	137.73
31.21	137.71
32.60	137.77
33.86	137.84
35.04	137.90
36.18	137.97
37.28	138.05
38.39	138.13
39.49	138.22
40.61	138.32
41.73	138.42
42.86	138.52
43.98	138.63
45.10	138.73
46.22	138.83
47.35	138.94
48.49	139.04
49.65	139.15
50.85	139.26
51.94	139.39
53.01	139.54
54.04	139.73
55.13	139.96
56.18	140.21
57.28	140.51
58.44	140.86
59.75	141.29
60.88	141.70
61.96	142.13
62.97	142.60
64.05	143.15
65.06	143.71
66.12	144.35
67.22	145.07
68.44	145.91
69.61	146.72
70.76	147.52
71.89	148.30
73.00	149.08
74.12	149.86
75.24	150.65
76.37	151.45
77.51	152.25
78.63	153.05

79.73	153.86
80.82	154.68
81.93	155.52
83.02	156.37
84.12	157.24
85.23	158.14
86.36	159.07
87.50	160.00
88.62	160.92
89.75	161.85
90.86	162.76
91.98	163.68
93.11	164.61
94.25	165.54
95.39	166.48
96.50	167.41
97.59	168.36
97.59	177.22

Fattore di sicurezza (FS) 1.2900 - N.3 -- X Y Lambda= 0.1424

11.34	152.42
20.51	145.62
24.77	142.61
27.55	140.84
29.80	139.63
32.08	138.69
34.08	138.05
36.34	137.55
38.86	137.18
42.15	136.88
44.79	136.74
47.17	136.73
49.33	136.84
51.66	137.11
53.81	137.49
56.16	138.04
58.73	138.77
61.86	139.78
64.41	140.73
66.75	141.74
68.89	142.84
71.22	144.20
73.37	145.62
75.65	147.30
78.09	149.25
80.89	151.63
83.50	153.90
86.01	156.11
88.44	158.31
90.87	160.55
93.56	163.09
96.58	166.01
99.47	168.85
99.47	177.48

Fattore di sicurezza (FS) 1.2927 - N.4 -- X Y Lambda= 0.1578

9.68	152.37
19.17	145.54
23.49	142.59
26.26	140.92
28.45	139.85
30.72	139.05
32.65	138.60
34.87	138.33
37.39	138.24
40.75	138.32
43.50	138.46
45.97	138.70
48.24	139.02
50.63	139.49
52.87	140.03
55.26	140.73
57.82	141.58
60.81	142.67
63.39	143.71
65.82	144.79
68.11	145.91

70.51	147.22
72.79	148.57
75.18	150.09
77.68	151.79
80.48	153.80
83.07	155.72
85.56	157.63
87.97	159.55
90.42	161.57
93.11	163.88
96.15	166.58
98.00	168.27
98.00	177.30

Fattore di sicurezza (FS) 1.2928 - N.5 -- X Y Lambda= 0.1683

14.12	152.52
18.57	148.53
20.80	146.56
22.36	145.23
23.74	144.11
25.00	143.12
26.26	142.19
27.58	141.24
29.02	140.26
30.66	139.18
31.93	138.41
33.06	137.84
34.05	137.45
35.19	137.14
36.15	137.00
37.25	136.96
38.47	137.04
40.09	137.23
41.55	137.42
42.90	137.60
44.21	137.77
45.48	137.96
46.77	138.15
48.08	138.35
49.43	138.56
50.86	138.79
52.12	139.04
53.32	139.34
54.47	139.67
55.70	140.09
56.85	140.53
58.07	141.06
59.34	141.67
60.78	142.40
62.13	143.11
63.43	143.81
64.69	144.51
65.96	145.23
67.22	145.97
68.49	146.73
69.79	147.52
71.14	148.37
72.43	149.20
73.70	150.05
74.94	150.90
76.20	151.79
77.44	152.70
78.70	153.65
79.99	154.65
81.34	155.72
82.64	156.77
83.91	157.82
85.17	158.88
86.44	159.97
87.70	161.06
88.96	162.18
90.24	163.34
91.54	164.54
92.84	165.73
94.13	166.92
95.41	168.11
95.41	176.82

Fattore di sicurezza (FS) 1.2977 - N.6 -- X Y Lambda= 0.1658

X	Y
18.10	152.70
26.92	145.78
30.90	142.79
33.43	141.13
35.40	140.08
37.47	139.31
39.20	138.88
41.23	138.64
43.60	138.59
46.84	138.71
49.38	138.90
51.61	139.20
53.62	139.60
55.78	140.19
57.76	140.86
59.89	141.73
62.20	142.81
64.96	144.21
67.40	145.52
69.70	146.83
71.89	148.15
74.13	149.57
76.30	151.03
78.52	152.60
80.81	154.29
83.28	156.18
85.63	158.01
87.93	159.84
90.19	161.67
92.46	163.54
94.98	165.68
97.80	168.12
98.00	168.29
98.00	177.30

Fattore di sicurezza (FS) 1.3012 - N.7 -- X Y Lambda= 0.1676

X	Y
12.65	152.47
16.49	148.82
18.47	146.95
19.87	145.64
21.13	144.47
22.25	143.45
23.40	142.41
24.60	141.34
25.88	140.21
27.28	138.98
28.39	138.09
29.37	137.40
30.24	136.90
31.25	136.46
32.08	136.21
33.05	136.04
34.15	135.97
35.65	135.97
36.93	136.00
38.10	136.04
39.20	136.11
40.31	136.20
41.38	136.32
42.49	136.46
43.64	136.64
44.89	136.85
46.04	137.07
47.15	137.30
48.23	137.55
49.34	137.83
50.43	138.13
51.54	138.46
52.69	138.82
53.94	139.24
55.08	139.65
56.19	140.07
57.27	140.51
58.37	140.99
59.45	141.49
60.57	142.04

61.72	142.63
62.98	143.31
64.13	143.96
65.23	144.62
66.30	145.30
67.41	146.04
68.47	146.80
69.56	147.61
70.69	148.48
71.89	149.46
73.06	150.41
74.20	151.35
75.33	152.29
76.45	153.23
77.57	154.18
78.70	155.14
79.83	156.12
80.98	157.12
82.11	158.12
83.24	159.12
84.36	160.12
85.48	161.13
86.61	162.15
87.73	163.18
88.86	164.23
90.01	165.30
91.14	166.37
92.27	167.44
92.27	176.24

Fattore di sicurezza (FS) 1.3013 - N.8 -- X Y Lambda= 0.1633

18.89	152.73
25.87	147.21
29.08	144.77
31.17	143.36
32.84	142.41
34.55	141.67
36.02	141.19
37.69	140.82
39.57	140.57
42.05	140.38
44.07	140.29
45.89	140.29
47.57	140.37
49.34	140.55
50.99	140.80
52.75	141.15
54.62	141.60
56.81	142.21
58.75	142.79
60.58	143.40
62.34	144.04
64.14	144.74
65.89	145.49
67.71	146.31
69.62	147.23
71.73	148.31
73.61	149.33
75.40	150.38
77.13	151.46
78.92	152.67
80.64	153.91
82.43	155.27
84.27	156.75
86.30	158.45
88.21	160.09
90.07	161.72
91.90	163.35
93.73	165.01
95.77	166.91
97.11	168.19
97.11	177.14

Fattore di sicurezza (FS) 1.3098 - N.9 -- X Y Lambda= 0.1627

18.10	152.70
22.42	149.04
24.55	147.27

26.03	146.11
27.31	145.16
28.51	144.33
29.68	143.59
30.91	142.85
32.23	142.11
33.77	141.30
35.01	140.71
36.14	140.25
37.16	139.92
38.30	139.64
39.30	139.48
40.43	139.40
41.66	139.39
43.21	139.46
44.54	139.55
45.77	139.67
46.93	139.82
48.12	140.02
49.26	140.24
50.44	140.52
51.66	140.83
53.00	141.22
54.28	141.60
55.51	141.98
56.73	142.36
57.94	142.76
59.15	143.16
60.37	143.59
61.61	144.03
62.90	144.50
64.13	144.96
65.34	145.44
66.54	145.93
67.75	146.44
68.96	146.96
70.19	147.52
71.48	148.12
72.86	148.78
74.07	149.42
75.24	150.09
76.35	150.79
77.54	151.60
78.66	152.43
79.82	153.36
81.03	154.38
82.37	155.57
83.66	156.73
84.91	157.86
86.15	158.98
87.37	160.10
88.59	161.22
89.82	162.35
91.05	163.49
92.28	164.65
93.52	165.81
94.74	166.97
95.96	168.13
95.96	176.92

Fattore di sicurezza (FS) 1.3109 - N.10 -- X Y Lambda= 0.1614

14.39	152.53
20.29	146.99
23.22	144.28
25.27	142.48
27.05	140.99
28.70	139.69
30.33	138.47
32.07	137.24
33.98	135.98
36.19	134.57
37.89	133.59
39.36	132.89
40.61	132.45
42.11	132.12
43.34	132.01
44.81	132.08
46.52	132.32

48.87	132.79
50.76	133.23
52.45	133.70
54.00	134.21
55.62	134.84
57.14	135.51
58.74	136.30
60.44	137.22
62.40	138.35
64.16	139.42
65.84	140.48
67.46	141.56
69.12	142.72
70.72	143.89
72.37	145.14
74.05	146.48
75.86	147.95
77.58	149.39
79.27	150.83
80.93	152.26
82.60	153.73
84.25	155.22
85.92	156.73
87.60	158.29
89.31	159.91
91.02	161.53
92.71	163.13
94.40	164.74
96.08	166.34
97.98	168.15
98.71	168.86
98.71	177.39

---------- 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	1.288	10219.5	7936.8	1489.0	Surplus
2	1.288	11418.1	8866.9	1664.5	Surplus
3	1.290	11727.5	9090.9	1727.5	Surplus
4	1.293	11249.9	8702.6	1677.0	Surplus
5	1.293	11063.9	8558.1	1650.0	Surplus
6	1.298	10717.0	8258.4	1632.8	Surplus
7	1.301	11145.3	8565.4	1723.4	Surplus
8	1.301	10143.9	7795.3	1569.1	Surplus
9	1.310	10268.5	7840.0	1644.5	Surplus
10	1.311	12933.8	9866.6	2080.5	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 1489.0

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)
18.391	0.609	-42.34	3.60	0.00	0.00	0.00	100.00
19.000	0.685	-42.34	12.89	0.00	0.00	0.00	100.00
19.685	0.685	-42.34	22.46	0.00	0.00	0.00	100.00
20.370	0.685	-42.34	32.04	0.00	0.00	0.00	100.00
21.056	0.444	-42.34	25.90	0.00	0.00	0.00	100.00
21.500	0.685	-42.34	48.00	0.00	0.00	0.00	100.00
22.185	0.224	-42.34	17.88	0.00	0.00	0.00	100.00
22.410	0.590	-41.58	52.05	0.00	0.00	0.00	100.00
23.000	0.685	-41.58	69.86	0.00	0.00	0.00	100.00
23.685	0.685	-41.58	80.42	0.00	0.00	0.00	100.00
24.370	0.009	-41.58	1.10	0.00	0.00	0.00	100.00

24.379	0.685	-39.97	90.89	0.00	0.00	0.00	100.00
25.064	0.436	-39.97	63.05	0.00	0.00	0.00	100.00
25.500	0.232	-39.97	35.32	0.00	0.00	0.00	100.00
25.732	0.685	-38.04	111.06	0.00	0.00	0.00	100.00
26.417	0.479	-38.04	83.71	0.00	0.00	0.00	100.00
26.897	0.685	-35.49	127.99	0.00	0.00	0.00	100.00
27.582	0.413	-35.49	81.72	0.00	0.00	0.00	100.00
27.995	0.685	-33.28	142.94	0.00	0.00	0.00	100.00
28.680	0.320	-33.28	69.83	0.00	0.00	0.00	100.00
29.000	0.050	-33.28	11.18	0.00	0.00	0.00	100.00
29.050	0.685	-31.03	156.70	0.00	0.00	0.00	100.00
29.736	0.445	-31.03	106.39	0.00	0.00	0.00	100.00
30.180	0.685	-28.93	171.04	0.00	0.00	0.00	100.00
30.865	0.540	-28.93	140.68	0.00	0.00	0.00	100.00
31.405	0.095	-27.23	25.22	0.00	0.00	0.00	100.00
31.500	0.685	-27.23	187.23	0.00	0.00	0.00	100.00
32.185	0.667	-27.23	190.66	0.00	0.00	0.00	100.00
32.853	0.685	-24.91	203.94	0.00	0.00	0.00	100.00
33.538	0.470	-24.91	144.50	0.00	0.00	0.00	100.00
34.008	0.685	-21.45	217.27	0.00	0.00	0.00	100.00
34.693	0.307	-21.45	99.84	0.00	0.00	0.00	100.00
35.000	0.046	-21.45	15.06	0.00	0.00	0.00	100.00
35.046	0.685	-16.91	228.25	0.00	0.00	0.00	100.00
35.731	0.243	-16.91	82.68	0.00	0.00	0.00	100.00
35.974	0.685	-12.11	237.08	0.00	0.00	0.00	100.00
36.660	0.340	-12.11	120.02	0.00	0.00	0.00	100.00
37.000	0.020	-12.11	7.10	0.00	0.00	0.00	100.00
37.020	0.685	-7.29	245.92	0.00	0.00	0.00	100.00
37.705	0.224	-7.29	81.55	0.00	0.00	0.00	100.00
37.929	0.685	-2.22	252.62	0.00	0.00	0.00	100.00
38.614	0.324	-2.22	121.10	0.00	0.00	0.00	100.00
38.939	0.685	1.93	258.95	0.00	0.00	0.00	100.00
39.624	0.411	1.93	157.20	0.00	0.00	0.00	100.00
40.035	0.685	4.88	264.84	0.00	0.00	0.00	100.00
40.720	0.685	4.88	268.18	0.00	0.00	0.00	100.00
41.405	0.000	4.88	0.14	0.00	0.00	0.00	100.00
41.405	0.685	5.26	271.50	0.00	0.00	0.00	100.00
42.091	0.568	5.26	227.47	0.00	0.00	0.00	100.00
42.658	0.685	5.69	277.47	0.00	0.00	0.00	100.00
43.344	0.493	5.69	201.81	0.00	0.00	0.00	100.00
43.837	0.663	6.13	273.73	0.00	0.00	0.00	100.00
44.500	0.479	6.13	199.80	0.00	0.00	0.00	100.00
44.979	0.685	6.60	288.60	0.00	0.00	0.00	100.00
45.664	0.437	6.60	185.84	0.00	0.00	0.00	100.00
46.101	0.685	7.04	294.19	0.00	0.00	0.00	100.00
46.787	0.441	7.04	191.23	0.00	0.00	0.00	100.00
47.228	0.685	7.48	299.68	0.00	0.00	0.00	100.00
47.913	0.087	7.48	38.30	0.00	0.00	0.00	100.00
48.000	0.374	7.48	165.19	0.00	0.00	0.00	100.00
48.374	0.685	7.91	304.61	0.00	0.00	0.00	100.00
49.059	0.499	7.91	223.48	0.00	0.00	0.00	100.00
49.558	0.685	8.30	309.25	0.00	0.00	0.00	100.00
50.243	0.563	8.30	256.00	0.00	0.00	0.00	100.00
50.806	0.685	9.98	313.92	0.00	0.00	0.00	100.00
51.491	0.434	9.98	199.90	0.00	0.00	0.00	100.00
51.925	0.685	11.92	317.60	0.00	0.00	0.00	100.00
52.610	0.394	11.92	183.70	0.00	0.00	0.00	100.00
53.004	0.496	14.01	231.69	0.00	0.00	0.00	100.00
53.500	0.540	14.01	253.38	0.00	0.00	0.00	100.00
54.040	0.685	16.04	322.57	0.00	0.00	0.00	100.00
54.725	0.411	16.04	193.82	0.00	0.00	0.00	100.00
55.136	0.685	18.01	324.03	0.00	0.00	0.00	100.00
55.821	0.351	18.01	166.07	0.00	0.00	0.00	100.00
56.172	0.685	19.98	324.85	0.00	0.00	0.00	100.00
56.857	0.390	19.98	185.18	0.00	0.00	0.00	100.00
57.247	0.685	21.73	325.15	0.00	0.00	0.00	100.00
57.932	0.425	21.73	201.51	0.00	0.00	0.00	100.00
58.357	0.685	23.22	324.95	0.00	0.00	0.00	100.00
59.042	0.458	23.22	216.99	0.00	0.00	0.00	100.00
59.500	0.078	23.22	36.81	0.00	0.00	0.00	100.00
59.578	0.685	23.23	324.34	0.00	0.00	0.00	100.00
60.263	0.504	23.23	238.34	0.00	0.00	0.00	100.00
60.767	0.685	23.23	323.70	0.00	0.00	0.00	100.00
61.452	0.474	23.23	223.80	0.00	0.00	0.00	100.00
61.926	0.574	23.23	270.57	0.00	0.00	0.00	100.00
62.500	0.576	23.23	270.95	0.00	0.00	0.00	100.00
63.076	0.685	23.23	321.70	0.00	0.00	0.00	100.00
63.761	0.443	23.23	207.63	0.00	0.00	0.00	100.00
64.204	0.685	23.23	320.17	0.00	0.00	0.00	100.00

64.889	0.455	23.23	212.01	0.00	0.00	0.00	100.00
65.344	0.656	23.23	305.07	0.00	0.00	0.00	100.00
66.000	0.485	23.23	224.93	0.00	0.00	0.00	100.00
66.485	0.685	23.24	317.40	0.00	0.00	0.00	100.00
67.170	0.467	23.24	215.80	0.00	0.00	0.00	100.00
67.637	0.685	23.24	316.29	0.00	0.00	0.00	100.00
68.322	0.472	23.24	217.40	0.00	0.00	0.00	100.00
68.794	0.685	23.86	315.11	0.00	0.00	0.00	100.00
69.479	0.438	23.86	200.96	0.00	0.00	0.00	100.00
69.917	0.583	24.51	267.25	0.00	0.00	0.00	100.00
70.500	0.528	24.51	241.28	0.00	0.00	0.00	100.00
71.028	0.685	25.17	311.35	0.00	0.00	0.00	100.00
71.714	0.416	25.17	188.26	0.00	0.00	0.00	100.00
72.130	0.685	25.82	308.51	0.00	0.00	0.00	100.00
72.815	0.433	25.82	194.21	0.00	0.00	0.00	100.00
73.248	0.685	26.48	305.42	0.00	0.00	0.00	100.00
73.934	0.066	26.48	29.50	0.00	0.00	0.00	100.00
74.000	0.361	26.48	160.14	0.00	0.00	0.00	100.00
74.361	0.685	27.12	301.53	0.00	0.00	0.00	100.00
75.047	0.450	27.12	196.60	0.00	0.00	0.00	100.00
75.497	0.685	27.73	297.01	0.00	0.00	0.00	100.00
76.182	0.486	27.73	209.09	0.00	0.00	0.00	100.00
76.668	0.685	28.29	292.13	0.00	0.00	0.00	100.00
77.353	0.557	28.29	235.21	0.00	0.00	0.00	100.00
77.910	0.685	29.80	286.64	0.00	0.00	0.00	100.00
78.595	0.442	29.80	183.32	0.00	0.00	0.00	100.00
79.038	0.685	31.47	281.08	0.00	0.00	0.00	100.00
79.723	0.407	31.47	165.25	0.00	0.00	0.00	100.00
80.130	0.370	33.21	149.14	0.00	0.00	0.00	100.00
80.500	0.684	33.21	272.44	0.00	0.00	0.00	100.00
81.184	0.685	34.86	268.31	0.00	0.00	0.00	100.00
81.869	0.417	34.86	161.10	0.00	0.00	0.00	100.00
82.287	0.685	36.45	260.59	0.00	0.00	0.00	100.00
82.972	0.371	36.45	138.90	0.00	0.00	0.00	100.00
83.343	0.685	37.98	252.56	0.00	0.00	0.00	100.00
84.028	0.403	37.98	145.84	0.00	0.00	0.00	100.00
84.430	0.685	39.35	243.68	0.00	0.00	0.00	100.00
85.116	0.432	39.35	150.76	0.00	0.00	0.00	100.00
85.548	0.685	40.53	233.98	0.00	0.00	0.00	100.00
86.233	0.521	40.53	173.82	0.00	0.00	0.00	100.00
86.754	0.685	40.62	223.08	0.00	0.00	0.00	100.00
87.439	0.492	40.62	156.34	0.00	0.00	0.00	100.00
87.931	0.685	40.71	212.41	0.00	0.00	0.00	100.00
88.617	0.466	40.71	141.04	0.00	0.00	0.00	100.00
89.083	0.685	40.80	201.92	0.00	0.00	0.00	100.00
89.768	0.457	40.80	131.20	0.00	0.00	0.00	100.00
90.225	0.685	40.89	191.47	0.00	0.00	0.00	100.00
90.910	0.090	40.89	24.57	0.00	0.00	0.00	100.00
91.000	0.352	40.89	95.60	0.00	0.00	0.00	100.00
91.352	0.685	40.97	180.94	0.00	0.00	0.00	100.00
92.038	0.447	40.97	114.45	0.00	0.00	0.00	100.00
92.484	0.685	41.06	170.20	0.00	0.00	0.00	100.00
93.169	0.446	41.06	107.22	0.00	0.00	0.00	100.00
93.615	0.685	41.15	159.43	0.00	0.00	0.00	100.00
94.300	0.451	41.15	101.33	0.00	0.00	0.00	100.00
94.751	0.685	41.24	148.57	0.00	0.00	0.00	100.00
95.436	0.451	41.24	94.16	0.00	0.00	0.00	100.00
95.887	0.685	41.39	137.66	0.00	0.00	0.00	100.00
96.572	0.448	41.39	86.37	0.00	0.00	0.00	100.00
97.020	0.685	41.55	126.71	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	ht	yt	yt'	E(x)	T(x)	E'	rho(x)	FS_qFEM	FS_srmFEM

(m)	(m)	(m)	(--)	(kN/m)	(kN/m)	(kN)	(--)	(--)	(--)
18.391	0.000	152.711	-0.662	0.0000000000E+000	0.0000000000E+000	2.0622972001E+001	0.043	2.779	3.062
19.000	0.146	152.303	-0.662	3.2028529844E+001	2.9501482057E-002	8.4616569407E+001	0.043	2.779	3.062
19.685	0.323	151.855	-0.678	1.1468405155E+002	5.8597748804E-001	1.6146528501E+002	0.043	1.429	1.574
20.370	0.466	151.373	-0.689	2.5329188205E+002	3.4312156652E+000	2.1036924641E+002	0.043	1.019	1.122
21.056	0.628	150.911	-0.641	4.0296276520E+002	9.0901426905E+000	2.1469157326E+002	0.044	0.881	0.968
21.500	0.772	150.650	-0.606	4.9730747909E+002	1.3798342748E+001	2.2563972422E+002	0.057	0.847	0.930
22.185	0.973	150.227	-0.601	6.6604322347E+002	2.3838029664E+001	2.3741414496E+002	0.080	0.825	0.903
22.410	1.054	150.103	-0.533	7.1865580440E+002	2.7277460662E+001	2.3556967250E+002	0.087	0.823	0.899
23.000	1.267	149.792	-0.504	8.5939375493E+002	3.7323298022E+001	2.3228441480E+002	0.103	0.827	0.899
23.685	1.542	149.460	-0.474	1.0137306090E+003	4.8798738594E+001	2.2680451503E+002	0.116	0.829	0.894
24.370	1.833	149.143	-0.463	1.1701944777E+003	6.1391225510E+001	2.6473811113E+002	0.128	0.840	0.898
24.379	1.836	149.138	-0.457	1.1725300438E+003	6.1597229046E+001	2.6501711604E+002	0.128	0.840	0.898
25.064	2.098	148.825	-0.447	1.3440582394E+003	7.7450907414E+001	2.5233291193E+002	0.144	0.868	0.917
25.500	2.275	148.637	-0.432	1.4545444216E+003	8.8527789102E+001	2.5995472481E+002	0.155	0.892	0.933
25.732	2.369	148.537	-0.410	1.5157252258E+003	9.4943971843E+001	2.6222832998E+002	0.160	0.907	0.942
26.417	2.629	148.261	-0.399	1.6931420097E+003	1.1468747214E+002	2.6897646125E+002	0.176	0.958	0.974
26.897	2.816	148.073	-0.372	1.8253939303E+003	1.3103569225E+002	2.7434697202E+002	0.190	1.002	1.000
27.582	3.060	147.828	-0.342	2.0117520627E+003	1.5625731997E+002	2.6309850270E+002	0.210	1.076	1.040
27.995	3.224	147.698	-0.304	2.1181863082E+003	1.7170748827E+002	2.5852855332E+002	0.222	1.125	1.065
28.680	3.470	147.494	-0.292	2.2962178814E+003	1.9968994263E+002	2.6251595408E+002	0.242	1.220	1.109
29.000	3.590	147.404	-0.280	2.3806318260E+003	2.1409218848E+002	2.6705394573E+002	0.252	1.272	1.132
29.050	3.609	147.390	-0.243	2.3941260062E+003	2.1642809686E+002	2.6663389407E+002	0.254	1.281	1.135
29.736	3.857	147.226	-0.232	2.5680865982E+003	2.4918030578E+002	2.5574894765E+002	0.276	1.407	1.184
30.180	4.027	147.128	-0.209	2.6823106715E+003	2.7231624584E+002	2.6517142921E+002	0.292	1.506	1.217
30.865	4.267	146.990	-0.192	2.8726781918E+003	3.1534011839E+002	2.8050285560E+002	0.322	1.714	1.278
31.405	4.469	146.893	-0.177	3.0252628902E+003	3.5216366260E+002	2.7675633968E+002	0.346	1.929	1.331
31.500	4.502	146.878	-0.148	3.0513915918E+003	3.5870040303E+002	2.7538589030E+002	0.350	1.972	1.341
32.185	4.755	146.777	-0.139	3.2383722894E+003	4.0702157421E+002	2.8696611392E+002	0.380	2.337	1.416
32.853	5.011	146.690	-0.115	3.4390716534E+003	4.6179502984E+002	2.9380972487E+002	0.413	2.854	1.506
33.538	5.261	146.622	-0.085	3.6355546265E+003	5.1779466429E+002	2.6289598975E+002	0.445	3.545	1.607
34.008	5.448	146.591	-0.045	3.7513594660E+003	5.5190092735E+002	2.3335438878E+002	0.462	4.052	1.674
34.693	5.696	146.569	-0.025	3.8980768161E+003	5.9711947178E+002	1.9865046727E+002	0.483	4.703	1.769
35.000	5.813	146.566	-0.009	3.9569787586E+003	6.1581805613E+002	1.7172284738E+002	0.490	4.939	1.811
35.046	5.831	146.566	0.016	3.9647322857E+003	6.1834726528E+002	1.6900782983E+002	0.491	4.961	1.817
35.731	6.051	146.577	0.021	4.0833307717E+003	6.5785901982E+002	1.5906953167E+002	0.507	5.117	1.910
35.974	6.133	146.585	0.048	4.1208162665E+003	6.7076325512E+002	1.4959988593E+002	0.512	5.082	1.942
36.660	6.316	146.622	0.065	4.2146518270E+003	7.0470631727E+002	1.3148816638E+002	0.524	4.773	2.028
37.000	6.419	146.652	0.089	4.2584906627E+003	7.2176403685E+002	1.0775455866E+002	0.531	4.543	2.073
37.020	6.425	146.654	0.109	4.2606219296E+003	7.2262865715E+002	1.0660066522E+002	0.531		

4.528 2.075
37.705 6.588 146.729 0.114 4.3355731573E+003 7.5394611000E+002 1.0039160905E+002 0.542
4.049 2.161
37.929 6.645 146.757 0.145 4.3573999012E+003 7.6366046957E+002 9.7362272318E+001 0.545
3.902 2.188
38.614 6.775 146.861 0.159 4.4239259842E+003 7.9465708652E+002 9.1391371285E+001 0.557
3.503 2.276
38.939 6.845 146.918 0.195 4.4526780457E+003 8.0899946113E+002 8.7158608044E+001 0.562
3.339 2.317
39.624 6.961 147.057 0.210 4.5101741449E+003 8.3954596245E+002 7.4753049808E+001 0.575
3.040 2.406
40.035 7.038 147.148 0.234 4.5386445320E+003 8.5607196583E+002 6.5506339004E+001 0.581
2.910 2.451
40.720 7.146 147.314 0.250 4.5792452814E+003 8.8155181200E+002 5.3999754637E+001 0.591
2.740 2.516
41.405 7.264 147.491 0.259 4.6126428947E+003 9.0428935334E+002 5.0662381773E+001 0.599
2.620 2.563
41.405 7.264 147.491 0.269 4.6126614063E+003 9.0430208656E+002 5.0657668473E+001 0.599
2.620 2.563
42.091 7.385 147.676 0.276 4.6399999206E+003 9.2399276725E+002 3.6536214634E+001 0.604
2.533 2.584
42.658 7.494 147.837 0.285 4.6591615866E+003 9.3858095536E+002 3.1201159045E+001 0.608
2.475 2.582
43.344 7.622 148.032 0.300 4.6784334030E+003 9.5374117691E+002 2.7542021628E+001 0.611
2.411 2.556
43.837 7.730 148.190 0.314 4.6918161203E+003 9.6453548394E+002 2.5660157636E+001 0.612
2.361 2.518
44.500 7.864 148.395 0.308 4.7075265758E+003 9.7742040594E+002 2.2119654520E+001 0.614
2.298 2.457
44.979 7.959 148.542 0.303 4.7175805994E+003 9.8593534466E+002 2.0086246335E+001 0.614
2.254 2.407
45.664 8.087 148.748 0.302 4.7304688156E+003 9.9726524020E+002 1.7734491927E+001 0.614
2.197 2.329
46.101 8.168 148.880 0.286 4.7379183289E+003 1.0041334384E+003 1.5591468519E+001 0.613
2.162 2.277
46.787 8.273 149.070 0.274 4.7470357763E+003 1.0132630875E+003 1.1761183530E+001 0.612
2.113 2.198
47.228 8.338 149.189 0.268 4.7517860211E+003 1.0185965719E+003 9.9087021203E+000 0.611
2.083 2.148
47.913 8.431 149.372 0.268 4.7576631944E+003 1.0261624094E+003 7.3279031594E+000 0.608
2.036 2.070
48.000 8.443 149.396 0.277 4.7582872092E+003 1.0271029850E+003 6.8876602404E+000 0.608
2.029 2.059
48.374 8.498 149.500 0.283 4.7604116012E+003 1.0309343510E+003 4.6964903166E+000 0.607
2.002 2.016
49.059 8.599 149.696 0.293 4.7623984490E+003 1.0374218136E+003 1.0075495209E+000 0.606
1.947 1.934
49.558 8.680 149.847 0.300 4.7622137928E+003 1.0417778948E+003 -1.9242427319E+000 0.604
1.903 1.875
50.243 8.785 150.052 0.311 4.7594328600E+003 1.0468251556E+003 -7.1820648879E+000 0.602
1.842 1.798
50.806 8.886 150.234 0.325 4.7539469318E+003 1.0502927784E+003 -1.2480202928E+001 0.600
1.786 1.735
51.491 8.989 150.458 0.331 4.7431163893E+003 1.0531732451E+003 -1.9562248535E+001 0.597
1.718 1.664
51.925 9.059 150.605 0.344 4.7336026145E+003 1.0542561930E+003 -2.4868447166E+001 0.595
1.673 1.622
52.610 9.153 150.843 0.344 4.7133919761E+003 1.0544572391E+003 -3.2915227193E+001 0.591
1.605 1.560
53.004 9.203 150.976 0.325 4.6996371324E+003 1.0537328623E+003 -3.7043790702E+001 0.589
1.568 1.529
53.500 9.236 151.132 0.328 4.6799358289E+003 1.0517488258E+003 -4.3978656445E+001 0.585
1.527 1.496
54.040 9.283 151.315 0.334 4.6537064885E+003 1.0483503338E+003 -5.1099241137E+001 0.582
1.481 1.462
54.725 9.313 151.542 0.332 4.6165008535E+003 1.0426617279E+003 -6.5731216992E+001 0.577
1.430 1.424
55.136 9.332 151.678 0.346 4.5866946627E+003 1.0375499505E+003 -7.3232031064E+001 0.573
1.399 1.401
55.821 9.351 151.920 0.353 4.5357747421E+003 1.0283146639E+003 -7.9214246519E+001 0.566
1.353 1.368
56.172 9.361 152.044 0.368 4.5071224531E+003 1.0229088446E+003 -8.2620050638E+001 0.563
1.331 1.352
56.857 9.369 152.302 0.376 4.4493086921E+003 1.0116912328E+003 -8.7399899950E+001 0.556
1.295 1.325
57.247 9.374 152.449 0.390 4.4145237601E+003 1.0047439466E+003 -9.1171430347E+001 0.552
1.276 1.311
57.932 9.373 152.721 0.397 4.3495894839E+003 9.9152544650E+002 -9.4714171488E+001 0.545
1.247 1.288

58.357	9.373	152.889	0.407	4.3093823847E+003	9.8317987415E+002	-9.4802039514E+001	0.540
1.232	1.275						
59.042	9.362	153.173	0.399	4.2442907669E+003	9.6942919434E+002	-9.8168831160E+001	0.533
1.213	1.257						
59.500	9.339	153.346	0.380	4.1983674489E+003	9.5952105282E+002	-1.0344532252E+002	0.528
1.200	1.245						
59.578	9.336	153.376	0.372	4.1902867134E+003	9.5775154639E+002	-1.0359097214E+002	0.527
1.199	1.243						
60.263	9.295	153.629	0.382	4.1216675452E+003	9.4253247344E+002	-1.0528097034E+002	0.519
1.184	1.226						
60.767	9.280	153.830	0.392	4.0667050642E+003	9.3006324563E+002	-1.0830342960E+002	0.513
1.174	1.214						
61.452	9.251	154.096	0.396	3.9931995586E+003	9.1300210862E+002	-1.1095506336E+002	0.504
1.162	1.198						
61.926	9.241	154.289	0.399	3.9393819603E+003	9.0026894926E+002	-1.1169964517E+002	0.498
1.155	1.186						
62.500	9.220	154.514	0.404	3.8765391283E+003	8.8513095313E+002	-1.1333851027E+002	0.490
1.146	1.173						
63.076	9.213	154.754	0.413	3.8091030086E+003	8.6865102170E+002	-1.1619390090E+002	0.482
1.138	1.159						
63.761	9.199	155.034	0.415	3.7302826746E+003	8.4911574019E+002	-1.1775109998E+002	0.472
1.128	1.143						
64.204	9.197	155.223	0.400	3.6773065013E+003	8.3589796811E+002	-1.1506286234E+002	0.466
1.121	1.132						
64.889	9.166	155.486	0.387	3.6031750333E+003	8.1727972723E+002	-1.0912500884E+002	0.457
1.112	1.117						
65.344	9.148	155.664	0.388	3.5532632717E+003	8.0470248181E+002	-1.0903603127E+002	0.451
1.106	1.108						
66.000	9.120	155.917	0.390	3.4824050436E+003	7.8680599431E+002	-1.0966049162E+002	0.442
1.097	1.094						
66.485	9.104	156.109	0.388	3.4286640929E+003	7.7320081594E+002	-1.0914570296E+002	0.435
1.090	1.084						
67.170	9.072	156.371	0.385	3.3555557927E+003	7.5467094342E+002	-1.0809513887E+002	0.425
1.081	1.072						
67.637	9.053	156.553	0.385	3.3046682057E+003	7.4174736528E+002	-1.0824939555E+002	0.419
1.074	1.063						
68.322	9.021	156.815	0.389	3.2312990319E+003	7.2307929682E+002	-1.1053906679E+002	0.409
1.064	1.052						
68.794	9.007	157.003	0.398	3.1780239805E+003	7.0946955448E+002	-1.1298499311E+002	0.402
1.057	1.045						
69.479	8.976	157.275	0.410	3.1005450880E+003	6.8960741981E+002	-1.2006993583E+002	0.391
1.047	1.035						
69.917	8.970	157.464	0.412	3.0460154400E+003	6.7559881066E+002	-1.2106222129E+002	0.384
1.040	1.029						
70.500	8.937	157.696	0.399	2.9780816063E+003	6.5815571494E+002	-1.1789690786E+002	0.375
1.032	1.023						
71.028	8.908	157.908	0.386	2.9150766401E+003	6.4202776871E+002	-1.1645126614E+002	0.367
1.024	1.017						
71.714	8.842	158.164	0.376	2.8377506672E+003	6.2230821393E+002	-1.1473228090E+002	0.358
1.017	1.012						
72.130	8.804	158.321	0.362	2.7895316149E+003	6.1004941792E+002	-1.1337276423E+002	0.352
1.012	1.010						
72.815	8.713	158.562	0.352	2.7146708596E+003	5.9107321398E+002	-1.0995837241E+002	0.343
1.006	1.007						
73.248	8.656	158.715	0.340	2.6668168602E+003	5.7897549136E+002	-1.0851825667E+002	0.338
1.003	1.005						
73.934	8.542	158.942	0.332	2.5945025805E+003	5.6077452920E+002	-1.0718106378E+002	0.329
0.998	1.004						
74.000	8.531	158.965	0.345	2.5873724059E+003	5.5898240212E+002	-1.0797912153E+002	0.328
0.998	1.004						
74.361	8.477	159.090	0.342	2.5470853273E+003	5.4886412148E+002	-1.1105635569E+002	0.324
0.995	1.003						
75.047	8.359	159.323	0.349	2.4715127069E+003	5.2991784871E+002	-1.1493438941E+002	0.315
0.991	1.003						
75.497	8.291	159.486	0.376	2.4184132359E+003	5.1658514451E+002	-1.2091983943E+002	0.309
0.989	1.003						
76.182	8.194	159.750	0.391	2.3324961997E+003	4.9498695660E+002	-1.2821472272E+002	0.299
0.984	1.004						
76.668	8.133	159.944	0.396	2.2691738024E+003	4.7905768155E+002	-1.2949232636E+002	0.292
0.981	1.005						
77.353	8.034	160.214	0.410	2.1811479848E+003	4.5694881433E+002	-1.3459097839E+002	0.281
0.976	1.006						
77.910	7.973	160.452	0.429	2.1034476580E+003	4.3752440740E+002	-1.3952105507E+002	0.271
0.972	1.008						
78.595	7.875	160.747	0.432	2.0078866853E+003	4.1380261882E+002	-1.4007556576E+002	0.259
0.967	1.011						
79.038	7.814	160.939	0.418	1.9457531801E+003	3.9855110139E+002	-1.3649890823E+002	0.252
0.964	1.013						
79.723	7.673	161.217	0.410	1.8564388293E+003	3.7694727130E+002	-1.3200314388E+002	0.241

0.960	1.017							
80.130	7.594	161.387	0.413	1.8023122437E+003	3.6402676540E+002	-1.3104244790E+002	0.235	
0.959	1.020							
80.500	7.503	161.538	0.427	1.7544508785E+003	3.5273103239E+002	-1.3203317305E+002	0.229	
0.958	1.023							
81.184	7.354	161.838	0.436	1.6606106729E+003	3.3086713811E+002	-1.3568873675E+002	0.218	
0.957	1.029							
81.869	7.174	162.135	0.446	1.5686276360E+003	3.0979673170E+002	-1.3860727110E+002	0.208	
0.958	1.036							
82.287	7.077	162.329	0.459	1.5096854385E+003	2.9644190026E+002	-1.3942715844E+002	0.201	
0.959	1.042							
82.972	6.884	162.641	0.469	1.4162181631E+003	2.7549692835E+002	-1.4122135297E+002	0.191	
0.963	1.051							
83.343	6.792	162.824	0.488	1.3628896544E+003	2.6362481091E+002	-1.4213594440E+002	0.184	
0.966	1.057							
84.028	6.590	163.157	0.496	1.2676377581E+003	2.4257088726E+002	-1.4142806146E+002	0.173	
0.973	1.069							
84.430	6.483	163.364	0.518	1.2101318298E+003	2.2993202602E+002	-1.4194047235E+002	0.167	
0.979	1.077							
85.116	6.277	163.720	0.518	1.1139313027E+003	2.0892697746E+002	-1.3601114737E+002	0.155	
0.990	1.092							
85.548	6.145	163.942	0.528	1.0563231159E+003	1.9646896224E+002	-1.3371167278E+002	0.148	
0.999	1.102							
86.233	5.927	164.310	0.576	9.6419489627E+002	1.7668884361E+002	-1.4328184845E+002	0.137	
1.015	1.121							
86.754	5.808	164.637	0.609	8.8603113259E+002	1.6012437282E+002	-1.4416153328E+002	0.126	
1.031	1.140							
87.439	5.628	165.044	0.600	7.9250769461E+002	1.4054423270E+002	-1.3545373510E+002	0.114	
1.054	1.166							
87.931	5.505	165.343	0.580	7.2623952001E+002	1.2687980434E+002	-1.2836761924E+002	0.105	
1.073	1.187							
88.617	5.300	165.727	0.563	6.4433350963E+002	1.1030868666E+002	-1.1740510208E+002	0.094	
1.100	1.216							
89.083	5.162	165.991	0.538	5.9024457444E+002	9.9572051558E+001	-1.1049161162E+002	0.087	
1.120	1.238							
89.768	4.927	166.347	0.518	5.2003318876E+002	8.5916981744E+001	-9.9679552145E+001	0.077	
1.149	1.271							
90.225	4.768	166.583	0.491	4.7533034238E+002	7.7365365260E+001	-9.3201937240E+001	0.071	
1.171	1.294							
90.910	4.500	166.908	0.475	4.1621140956E+002	6.6276049937E+001	-8.5661572777E+001	0.063	
1.203	1.330							
91.000	4.465	166.951	0.474	4.0854625046E+002	6.4846341447E+001	-8.4650591441E+001	0.062	
1.208	1.335							
91.352	4.327	167.117	0.468	3.8000055683E+002	5.9609313725E+001	-7.9588122971E+001	0.058	
1.226	1.355							
92.038	4.051	167.437	0.477	3.2733898931E+002	5.0080702373E+001	-7.6592626302E+001	0.050	
1.264	1.397							
92.484	3.884	167.658	0.491	2.9320670509E+002	4.4013264877E+001	-7.5587788241E+001	0.045	
1.292	1.427							
93.169	3.621	167.992	0.492	2.4228979477E+002	3.5005806945E+001	-7.4430380733E+001	0.043	
1.338	1.478							
93.615	3.454	168.213	0.547	2.0907951033E+002	2.9113703818E+001	-7.7405907223E+001	0.043	
1.376	1.520							
94.300	3.253	168.611	0.542	1.5298991802E+002	1.9143113935E+001	-6.9614087889E+001	0.043	
1.442	1.593							
94.751	3.078	168.829	0.497	1.2524122346E+002	1.4280449337E+001	-5.9551884332E+001	0.043	
1.488	1.643							
95.436	2.823	169.175	0.496	8.6525027691E+001	7.9363151636E+000	-4.9323284884E+001	0.043	
1.557	1.719							
95.887	2.645	169.393	0.568	6.6422472766E+001	5.2954537878E+000	-4.4787417711E+001	0.043	
1.609	1.775							
96.572	2.469	169.820	0.571	3.5538324322E+001	2.3808535167E+000	-3.4595781413E+001	0.043	
1.693	1.867							
97.020	2.293	170.039	0.571	2.3115846208E+001	1.5845547434E+000	-3.0115389679E+001	0.043	
1.740	1.918							

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 (m)	dx (m)	dl (m)	alpha (°)	TauStress (kPa)	TauF (kN/m)	TauStrength (kPa)	TauS (kN/m)
18.391	0.609	0.824	-42.343	-2.861	-2.356	100.031	82.377
19.000	0.685	0.927	-42.343	-9.106	-8.441	100.521	93.183
19.685	0.685	0.927	-42.343	-15.873	-14.714	102.662	95.168
20.370	0.685	0.927	-42.343	-22.640	-20.988	105.294	97.609
21.056	0.444	0.601	-42.343	-28.219	-16.970	106.790	64.219
21.500	0.685	0.927	-42.343	-33.923	-31.447	109.393	101.408
22.185	0.224	0.304	-42.343	-38.581	-11.710	109.828	33.336
22.410	0.590	0.789	-41.576	-42.529	-33.569	110.875	87.516
23.000	0.685	0.916	-41.576	-49.191	-45.054	110.705	101.396
23.685	0.685	0.916	-41.576	-56.628	-51.866	111.748	102.350
24.370	0.009	0.012	-41.576	-60.395	-0.711	114.952	1.353
24.379	0.685	0.894	-39.975	-63.362	-56.652	114.668	102.524
25.064	0.436	0.569	-39.975	-69.120	-39.296	116.117	66.015
25.500	0.232	0.303	-39.975	-72.622	-22.016	117.507	35.624
25.732	0.685	0.870	-38.039	-76.153	-66.250	118.006	102.661
26.417	0.479	0.608	-38.039	-82.069	-49.931	121.319	73.812
26.897	0.685	0.841	-35.487	-85.200	-71.695	122.404	103.001
27.582	0.413	0.507	-35.487	-90.265	-45.778	122.771	62.264
27.995	0.685	0.820	-33.281	-92.054	-75.447	124.123	101.730
28.680	0.320	0.383	-33.281	-96.286	-36.860	126.582	48.457
29.000	0.050	0.060	-33.281	-97.854	-5.903	127.359	7.683
29.050	0.685	0.800	-31.029	-96.823	-77.418	127.186	101.696
29.736	0.445	0.519	-31.029	-101.324	-52.563	129.600	67.232
30.180	0.685	0.783	-28.934	-100.918	-79.008	134.233	105.091
30.865	0.540	0.617	-28.934	-105.335	-64.985	137.182	84.632
31.405	0.095	0.107	-27.231	-103.038	-10.981	136.137	14.509
31.500	0.685	0.771	-27.231	-105.776	-81.509	136.945	105.526
32.185	0.667	0.751	-27.231	-110.565	-83.000	142.987	107.340
32.853	0.685	0.755	-24.906	-107.570	-81.262	140.196	105.909
33.538	0.470	0.518	-24.906	-111.175	-57.577	135.710	70.284
34.008	0.685	0.736	-21.453	-101.072	-74.406	128.925	94.911
34.693	0.307	0.330	-21.453	-103.575	-34.192	126.673	41.817
35.000	0.046	0.049	-21.453	-104.469	-5.158	124.124	6.128
35.046	0.685	0.716	-16.911	-85.087	-60.935	120.665	86.413
35.731	0.243	0.254	-16.911	-86.814	-22.074	119.008	30.260
35.974	0.685	0.701	-12.110	-62.708	-43.944	113.084	79.246
36.660	0.340	0.348	-12.110	-63.893	-22.246	113.234	39.426
37.000	0.020	0.020	-12.110	-64.310	-1.316	111.413	2.280
37.020	0.685	0.691	-7.287	-36.326	-25.092	107.404	74.190
37.705	0.224	0.226	-7.287	-36.852	-8.321	107.026	24.167
37.929	0.685	0.686	-2.215	-5.036	-3.453	102.250	70.111
38.614	0.324	0.324	-2.215	-5.102	-1.655	102.200	33.155
38.939	0.685	0.686	1.930	22.160	15.192	98.068	67.231
39.624	0.411	0.411	1.930	22.423	9.223	98.257	40.415
40.035	0.685	0.688	4.885	42.389	29.150	95.937	65.973
40.720	0.685	0.688	4.885	42.924	29.518	96.375	66.274
41.405	0.000	0.000	4.885	43.192	0.016	96.193	0.035
41.405	0.685	0.688	5.260	45.995	31.648	96.622	66.483
42.091	0.568	0.570	5.260	46.504	26.515	96.980	55.296
42.658	0.685	0.689	5.686	49.952	34.395	97.191	66.922
43.344	0.493	0.496	5.686	50.449	25.017	97.223	48.212
43.837	0.663	0.667	6.131	54.049	36.038	97.343	64.904
44.500	0.479	0.482	6.131	54.574	26.305	97.571	47.029
44.979	0.685	0.690	6.597	58.460	40.322	97.570	67.298
45.664	0.437	0.440	6.597	59.030	25.966	97.690	42.971
46.101	0.685	0.690	7.045	62.833	43.379	97.912	67.597
46.787	0.441	0.445	7.045	63.423	28.197	98.106	43.617
47.228	0.685	0.691	7.482	67.215	46.449	98.164	67.837
47.913	0.087	0.088	7.482	67.630	5.937	98.204	8.621
48.000	0.374	0.377	7.482	67.847	25.604	98.298	37.096
48.374	0.685	0.692	7.905	71.468	49.438	98.339	68.026
49.059	0.499	0.504	7.905	72.017	36.271	98.468	49.594
49.558	0.685	0.692	8.297	75.501	52.278	98.646	68.304
50.243	0.563	0.569	8.297	76.088	43.275	98.867	56.231
50.806	0.685	0.696	9.976	89.277	62.109	99.076	68.927
51.491	0.434	0.440	9.976	89.824	39.550	99.451	43.789
51.925	0.685	0.700	11.915	104.735	73.342	99.924	69.973
52.610	0.394	0.403	11.915	105.260	42.420	100.478	40.493
53.004	0.496	0.511	14.009	120.829	61.707	101.211	51.688
53.500	0.540	0.557	14.009	121.261	67.484	101.903	56.711
54.040	0.685	0.713	16.038	135.875	96.868	102.838	73.316
54.725	0.411	0.427	16.038	136.219	58.205	104.256	44.547

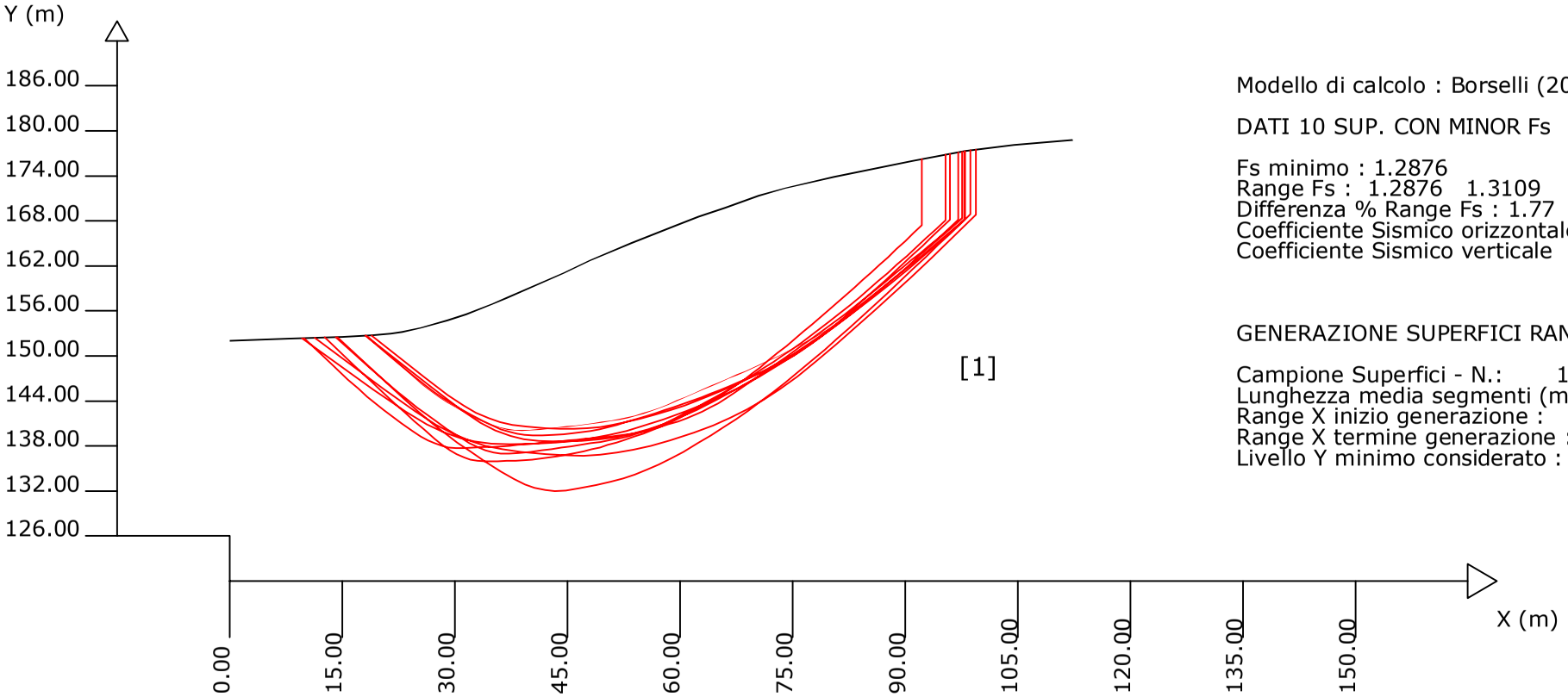
55.136	0.685	0.720	18.014	149.773	107.910	105.104	75.727
55.821	0.351	0.369	18.014	150.004	55.305	105.838	39.021
56.172	0.685	0.729	19.978	162.705	118.619	106.769	77.839
56.857	0.390	0.415	19.978	162.822	67.620	107.359	44.586
57.247	0.685	0.738	21.732	173.459	127.943	108.544	80.062
57.932	0.425	0.457	21.732	173.444	79.292	108.703	49.695
58.357	0.685	0.746	23.223	181.870	135.600	109.364	81.540
59.042	0.458	0.498	23.223	181.719	90.550	110.095	54.860
59.500	0.078	0.085	23.223	181.646	15.361	110.624	9.355
59.578	0.685	0.746	23.225	181.541	135.356	110.364	82.287
60.263	0.504	0.548	23.225	181.360	99.463	111.545	61.174
60.767	0.685	0.746	23.227	181.190	135.096	111.619	83.224
61.452	0.474	0.516	23.227	181.014	93.402	112.531	58.065
61.926	0.574	0.624	23.229	180.865	112.932	112.312	70.128
62.500	0.576	0.626	23.229	180.559	113.090	113.362	71.003
63.076	0.685	0.746	23.231	180.091	134.281	113.306	84.484
63.761	0.443	0.482	23.231	179.662	86.669	113.916	54.953
64.204	0.685	0.746	23.233	179.244	133.651	112.682	84.020
64.889	0.455	0.495	23.233	178.811	88.501	112.907	55.882
65.344	0.656	0.714	23.235	178.399	127.358	112.734	80.480
66.000	0.485	0.527	23.235	178.019	93.901	113.102	59.659
66.485	0.685	0.746	23.237	177.714	132.514	112.624	83.979
67.170	0.467	0.508	23.237	177.404	90.097	112.927	57.351
67.637	0.685	0.746	23.239	177.104	132.061	112.719	84.051
68.322	0.472	0.513	23.239	176.792	90.774	113.466	58.259
68.794	0.685	0.749	23.865	179.773	134.691	113.810	85.270
69.479	0.438	0.479	23.865	179.407	85.899	115.241	55.177
69.917	0.583	0.641	24.512	182.384	116.956	114.531	73.444
70.500	0.528	0.581	24.512	181.802	105.591	114.834	66.696
71.028	0.685	0.757	25.171	184.225	139.470	114.265	86.505
71.714	0.416	0.460	25.171	183.405	84.330	114.601	52.694
72.130	0.685	0.761	25.819	185.653	141.311	113.981	86.757
72.815	0.433	0.482	25.819	184.741	88.957	114.089	54.937
73.248	0.685	0.765	26.479	186.827	143.011	113.651	86.997
73.934	0.066	0.074	26.479	186.159	13.815	113.864	8.450
74.000	0.361	0.404	26.479	185.687	74.984	114.385	46.191
74.361	0.685	0.770	27.122	187.282	144.174	114.447	88.104
75.047	0.450	0.506	27.122	185.898	94.004	115.477	58.394
75.497	0.685	0.774	27.734	187.046	144.794	116.718	90.353
76.182	0.486	0.549	27.734	185.528	101.930	117.373	64.486
76.668	0.685	0.778	28.292	186.205	144.890	117.340	91.305
77.353	0.557	0.632	28.292	184.508	116.659	118.748	75.081
77.910	0.685	0.790	29.798	188.286	148.665	119.224	94.135
78.595	0.442	0.510	29.798	186.522	95.076	119.145	60.732
79.038	0.685	0.803	31.469	190.124	152.732	118.077	94.854
79.723	0.407	0.477	31.469	188.162	89.792	118.199	56.405
80.130	0.370	0.442	33.208	191.642	84.799	118.002	52.214
80.500	0.684	0.818	33.208	189.401	154.910	118.851	97.208
81.184	0.685	0.835	34.864	190.259	158.877	118.572	99.014
81.869	0.417	0.509	34.864	187.591	95.396	119.329	60.682
82.287	0.685	0.852	36.445	187.897	160.043	118.809	101.196
82.972	0.371	0.461	36.445	185.078	85.310	119.701	55.175
83.343	0.685	0.869	37.981	184.528	160.404	119.192	103.609
84.028	0.403	0.511	37.981	181.352	92.625	119.608	61.089
84.430	0.685	0.886	39.352	179.699	159.229	119.354	105.758
85.116	0.432	0.559	39.352	176.182	98.511	118.191	66.086
85.548	0.685	0.902	40.534	173.604	156.507	118.360	106.703
86.233	0.521	0.686	40.534	169.566	116.265	120.216	82.427
86.754	0.685	0.903	40.619	165.582	149.464	118.183	106.679
87.439	0.492	0.648	40.619	161.624	104.749	117.673	76.264
87.931	0.685	0.904	40.707	157.717	142.554	115.396	104.301
88.617	0.466	0.615	40.707	153.828	94.660	114.652	70.552
89.083	0.685	0.905	40.796	149.986	135.747	112.692	101.994
89.768	0.457	0.604	40.796	146.111	88.203	111.917	67.561
90.225	0.685	0.906	40.886	142.280	128.949	110.312	99.977
90.910	0.090	0.118	40.886	139.640	16.544	110.171	13.052
91.000	0.352	0.466	40.886	138.099	64.382	109.468	51.034
91.352	0.685	0.908	40.975	134.499	122.060	108.865	98.796
92.038	0.447	0.592	40.975	130.514	77.210	108.659	64.281
92.484	0.685	0.909	41.062	126.562	115.010	108.384	98.490
93.169	0.446	0.591	41.062	122.563	72.454	108.430	64.099
93.615	0.685	0.910	41.149	118.594	107.911	109.284	99.440
94.300	0.451	0.599	41.149	114.560	68.582	106.882	63.986
94.751	0.685	0.911	41.236	110.552	100.727	105.910	96.497
95.436	0.451	0.599	41.236	106.501	63.836	103.739	62.181
95.887	0.685	0.913	41.392	102.490	93.606	102.717	93.813
96.572	0.448	0.597	41.392	98.420	58.730	101.136	60.351
97.020	0.685	0.916	41.548	94.382	86.409	101.478	92.905

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 : 14/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Borselli (2016)

DATI 10 SUP. CON MINOR Fs

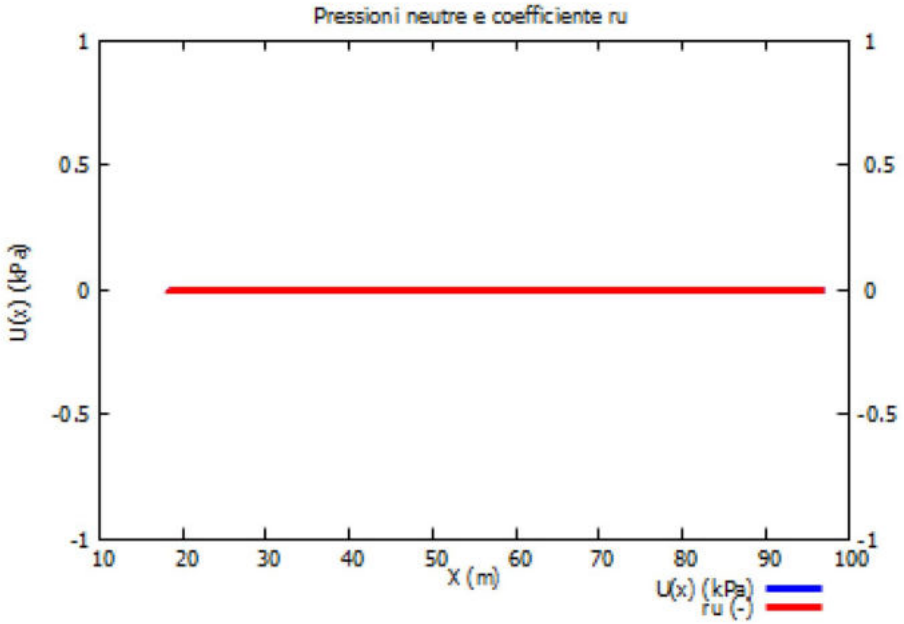
Fs minimo : 1.2876
Range Fs : 1.2876 1.3109
Differenza % Range Fs : 1.77
Coefficiente Sismico orizzontale - Kh: 0.0250
Coefficiente Sismico verticale - Kv: 0.0125

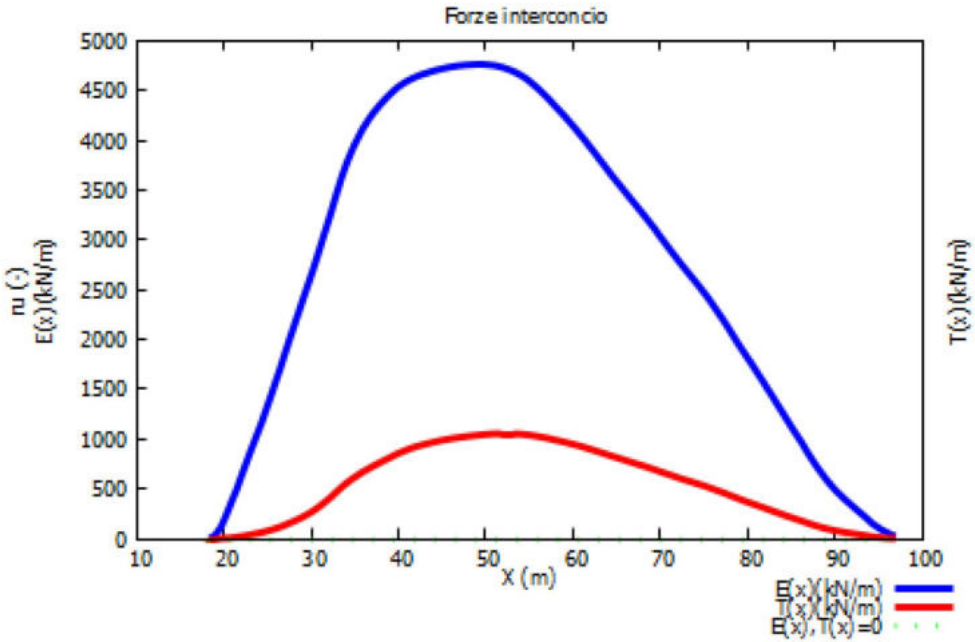
GENERAZIONE SUPERFICI RANDOM

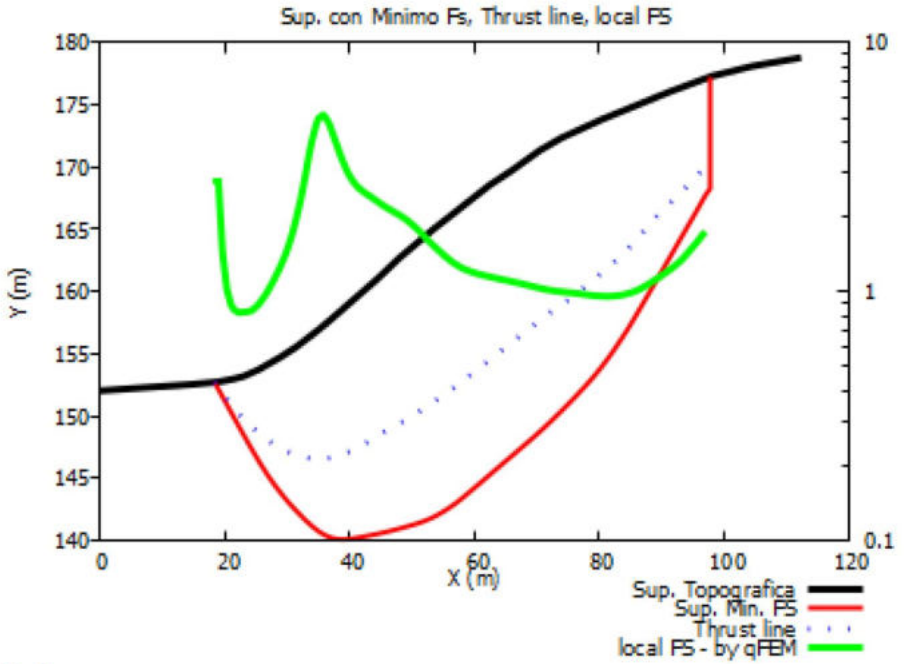
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 4.5
Range X inizio generazione : 2.2 - 103.4
Range X termine generazione : 13.5 - 110.1
Livello Y minimo considerato : 127.9

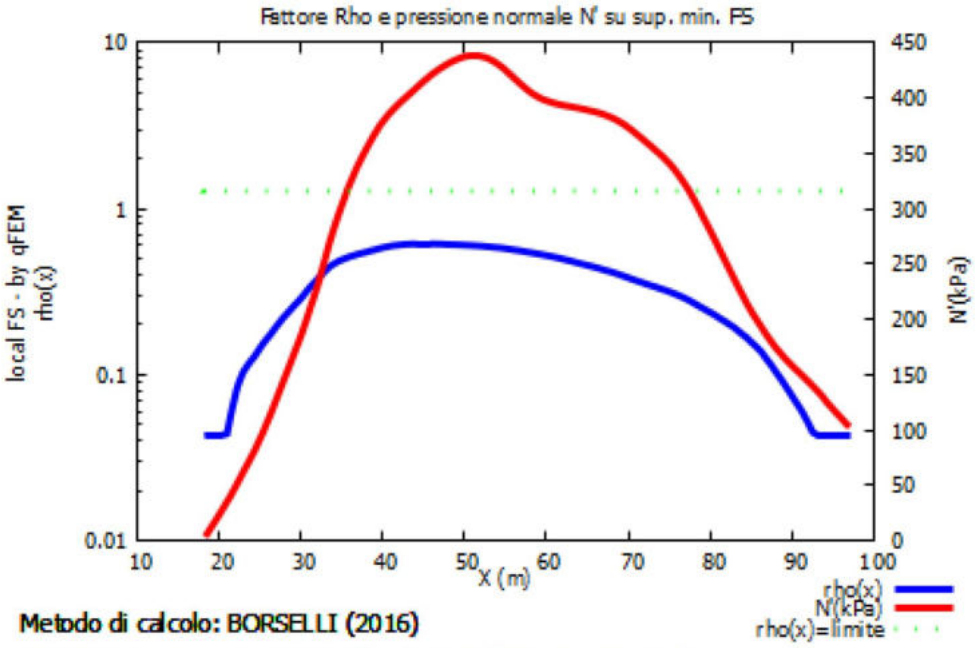
Parametri Geotecnici degli strati # ----------

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





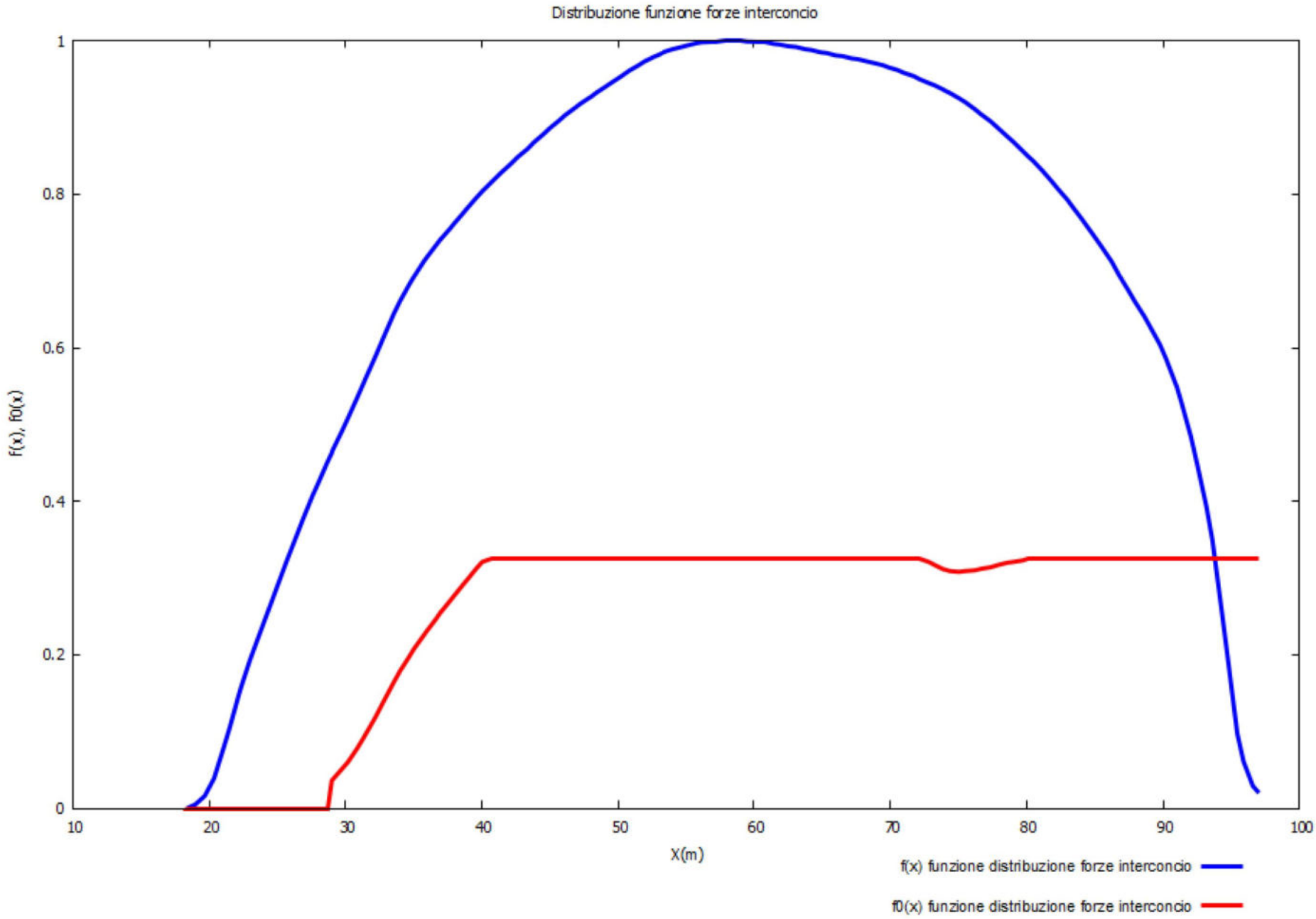


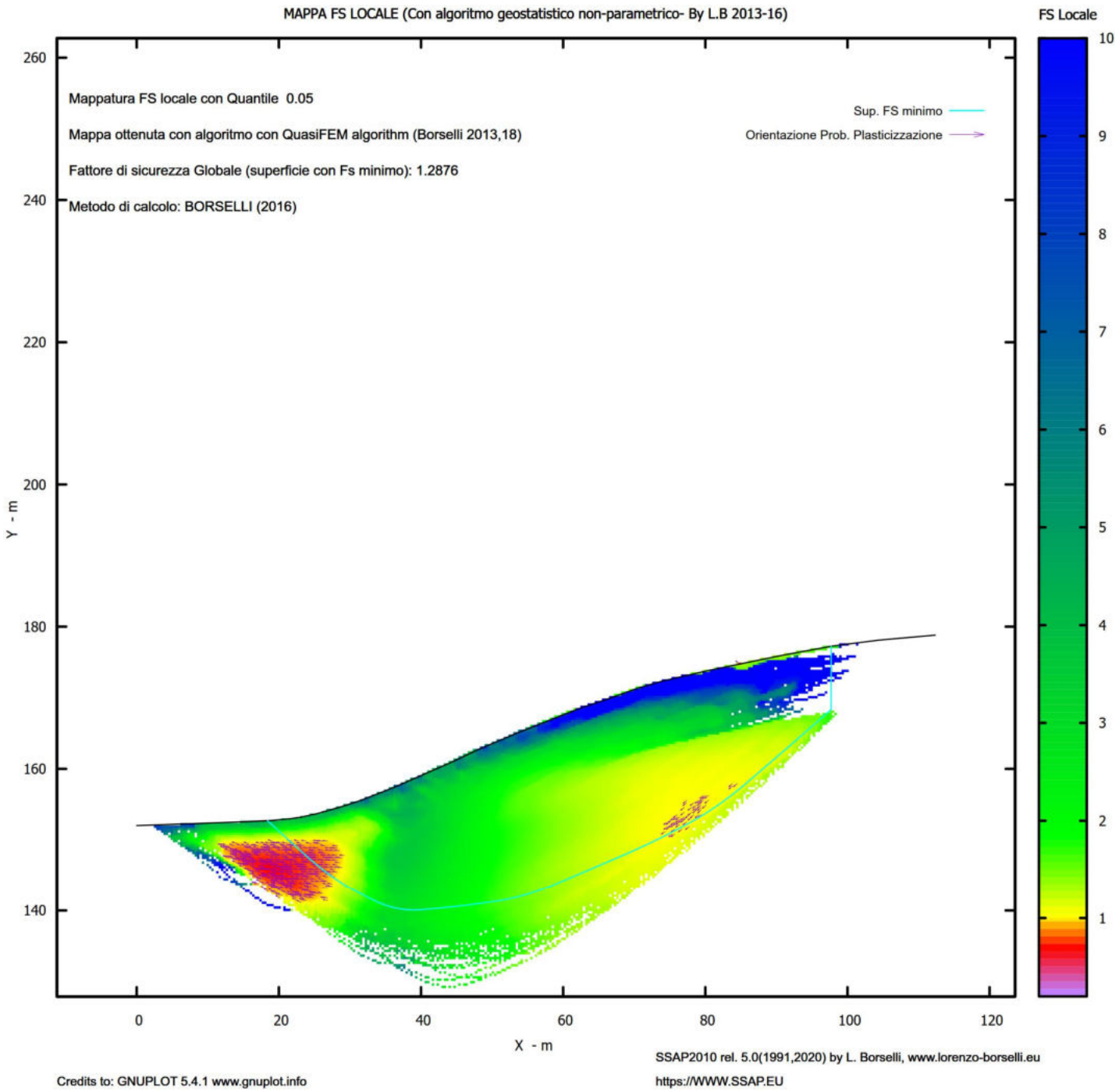


Metodo di calcolo: BORSELLI (2016)

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

14/11/21 11:41

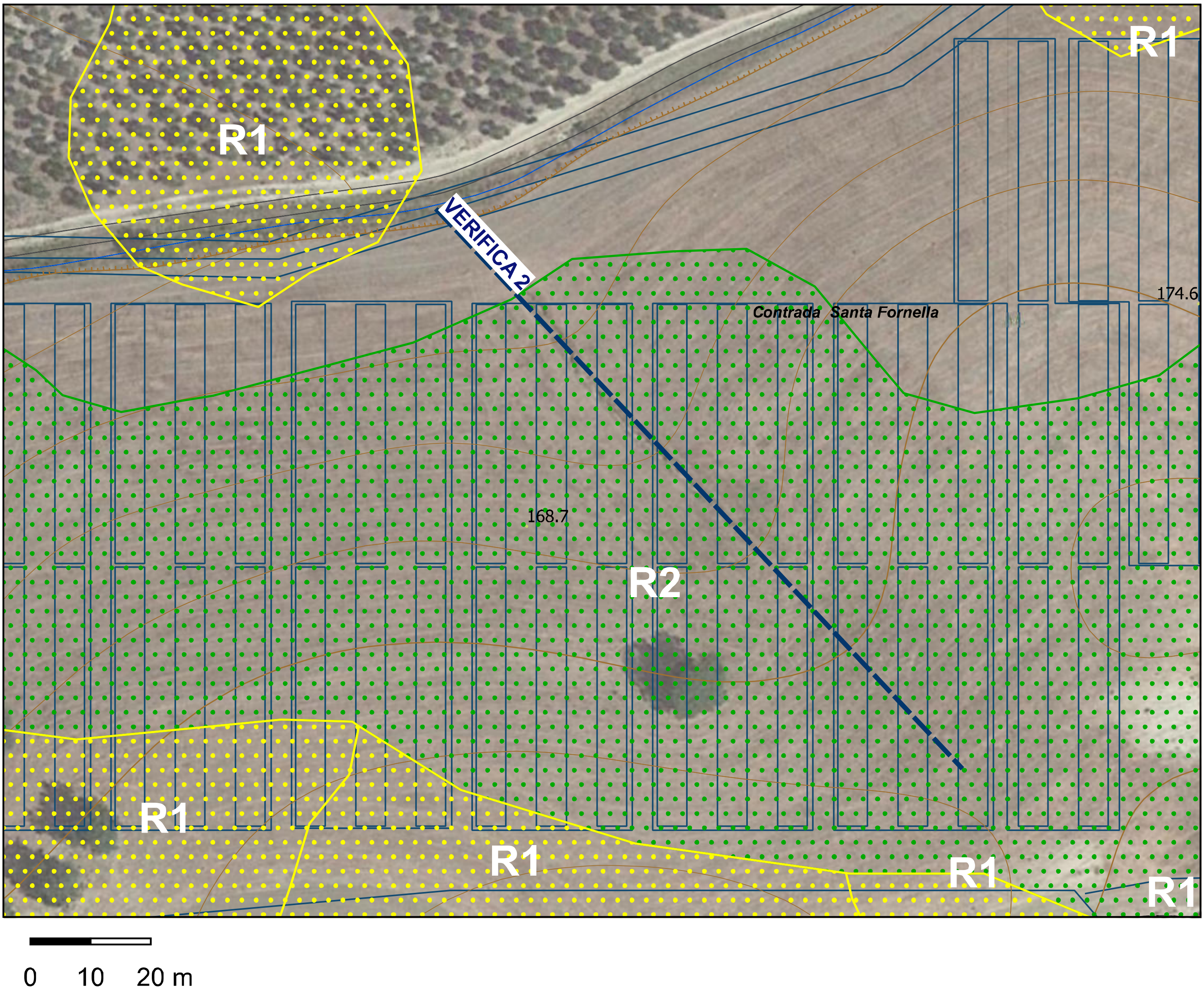

Distribuzione funzione forze interconcio
f(x), f0(x)
X(m)
0
0.2
0.4
0.6
0.8
1
10
20
30
40
50
60
70
80
90
100
f(x) funzione distribuzione forze interconcio
f0(x) funzione distribuzione forze interconcio

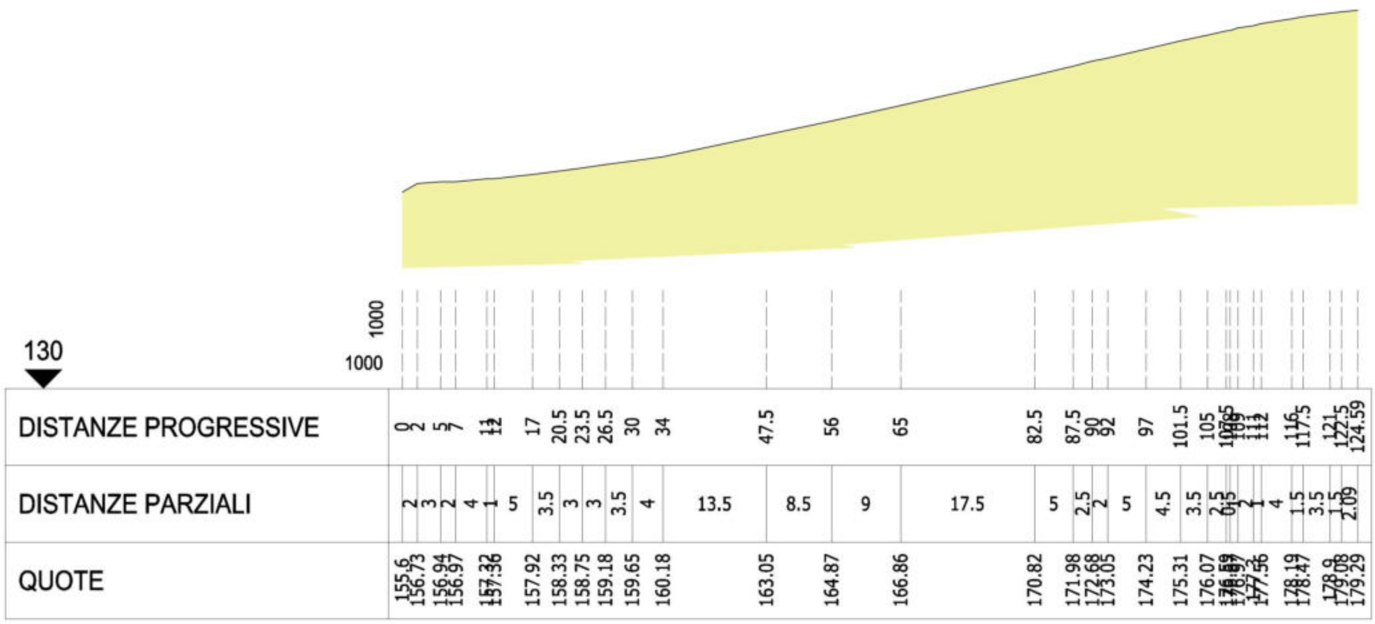

MAPPA FS LOCALE (Con algoritmo geostatistico non-parametrico- By L.B 2013-16)
FS Locale
Mappatura FS locale con Quantile 0.05
Mappa ottenuta con algoritmo con QuasiFEM algorithm (Borselli 2013,18)
Fattore di sicurezza Globale (superficie con Fs minimo): 1.2876
Metodo di calcolo: BORSELLI (2016)
Sup. FS minimo
Orientazione Prob. Plasticizzazione
Y - m
X - m
260
240
220
200
180
160
140
0
20
40
60
80
100
120
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





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\MIADONNA\VERIFICA 2\DRENATA\MORG\MORG.txt
Data: 14/11/2021
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	155.60	-	-	-	-	-	-
2.00	156.73	-	-	-	-	-	-
5.00	156.94	-	-	-	-	-	-
7.00	156.97	-	-	-	-	-	-
11.00	157.32	-	-	-	-	-	-
12.00	157.36	-	-	-	-	-	-
17.00	157.92	-	-	-	-	-	-
20.50	158.33	-	-	-	-	-	-
23.50	158.75	-	-	-	-	-	-
26.50	159.18	-	-	-	-	-	-
30.00	159.65	-	-	-	-	-	-
34.00	160.18	-	-	-	-	-	-
47.50	163.05	-	-	-	-	-	-
56.00	164.87	-	-	-	-	-	-
65.00	166.86	-	-	-	-	-	-
82.50	170.82	-	-	-	-	-	-
87.50	171.98	-	-	-	-	-	-
90.00	172.68	-	-	-	-	-	-
92.00	173.05	-	-	-	-	-	-
97.00	174.23	-	-	-	-	-	-
101.50	175.31	-	-	-	-	-	-
105.00	176.07	-	-	-	-	-	-
107.50	176.60	-	-	-	-	-	-
108.00	176.67	-	-	-	-	-	-
109.00	176.97	-	-	-	-	-	-
111.00	177.30	-	-	-	-	-	-
112.00	177.56	-	-	-	-	-	-
116.00	178.19	-	-	-	-	-	-
117.50	178.47	-	-	-	-	-	-
121.00	178.90	-	-	-	-	-	-
122.50	179.08	-	-	-	-	-	-
124.59	179.29	-	-	-	-	-	-

ASSENZA DI FALDA

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

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

LEGENDA: fi`_____ Angolo di attrito interno efficace(in gradi)
C` _____ Coesione efficace (in Kpa)
Cu _____ Resistenza al taglio Non drenata (in Kpa)
Gamm _____ Peso di volume terreno fuori falda (in KN/m^3)
Gamm_sat __ Peso di volume terreno immerso (in KN/m^3)
STR_IDX ___ Indice di resistenza (usato in solo in 'SNIFF SEARCH) (adimensionale)

---- SOLO Per AMMASSI ROCCIOSI FRATTURATI - Parametri Criterio di Rottura di Hoek (2002)-
sigci _____ Resistenza Compressione Uniassiale Roccia Intatta (in MPa)
GSI _____ Geological Strenght Index ammasso(adimensionale)
mi _____ Indice litologico ammasso(adimensionale)
D _____ Fattore di disturbo ammasso(adimensionale)
Fattore di riduzione NTC2018: gammaPHI=1.25 e gammaC=1.25 - DISATTIVATO (solo per ROCCE)
Uso CRITERIO DI ROTTURA Hoek et al.(2002,2006) - non-lineare - Generalizzato, secondo Lei et al.(2016)

---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
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): 5.0 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 2.49 114.62
LIVELLO MINIMO CONSIDERATO (Ymin): 134.28
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 14.95 122.10

*** 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 : 0.0250
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0125
COEFFICIENTE c=Kv/Kh UTILIZZATO : 0.5000
FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00

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

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

Fattore di sicurezza (FS) 2.7111 - Min. - X Y Lambda= 0.2480
20.67 158.35
27.36 154.48
30.41 152.81
32.39 151.87
33.96 151.28
35.58 150.88
36.96 150.66
38.51 150.58
40.19 150.62
42.32 150.78
44.30 150.94
46.16 151.09
47.97 151.24
49.73 151.39
51.50 151.54
53.28 151.69
55.08 151.84
56.89 152.00
58.64 152.17
60.37 152.37
62.07 152.59
63.81 152.83
65.53 153.10
67.27 153.40
69.07 153.73
70.97 154.11
72.74 154.49
74.47 154.89
76.16 155.32
77.90 155.80
79.59 156.30
81.33 156.85
83.12 157.45
85.04 158.12
86.83 158.79
88.56 159.47

90.25 160.17
91.98 160.93
93.68 161.71
95.42 162.56
97.23 163.47
99.17 164.49
100.95 165.48
102.68 166.49
104.34 167.52
106.07 168.65
107.94 169.95
110.07 171.52
113.14 173.87
115.36 175.61
115.36 178.09

Fattore di sicurezza (FS) 2.7244 - N.2 -- X Y Lambda= 0.2567
32.58 159.99
39.18 156.53
42.18 155.04
44.12 154.23
45.66 153.74
47.25 153.42
48.61 153.29
50.13 153.28
51.80 153.41
53.92 153.69
55.87 153.96
57.69 154.22
59.45 154.48
61.17 154.75
62.90 155.03
64.65 155.32
66.44 155.63
68.30 155.96
70.02 156.30
71.69 156.68
73.32 157.10
75.02 157.57
76.65 158.07
78.33 158.63
80.05 159.25
81.90 159.96
83.70 160.66
85.45 161.35
87.17 162.05
88.90 162.75
90.63 163.47
92.38 164.20
94.18 164.97
96.05 165.78
97.77 166.58
99.43 167.41
101.05 168.27
102.74 169.24
104.56 170.36
106.65 171.74
109.67 173.83
110.94 174.73
110.94 177.29

Fattore di sicurezza (FS) 2.7344 - N.3 -- X Y Lambda= 0.2468
32.82 160.02
40.79 156.82
44.49 155.44
46.92 154.68
48.91 154.21
50.91 153.93
52.68 153.82
54.62 153.84
56.73 154.00
59.32 154.32
61.64 154.64

63.83 154.98
65.93 155.33
68.03 155.73
70.09 156.15
72.20 156.62
74.35 157.13
76.63 157.70
78.80 158.27
80.92 158.86
83.01 159.47
85.11 160.11
87.22 160.79
89.37 161.50
91.62 162.28
94.04 163.15
96.15 163.99
98.18 164.90
100.10 165.86
102.16 167.01
104.33 168.36
106.86 170.09
110.58 172.80
113.95 175.34
113.95 177.87

Fattore di sicurezza (FS) 2.7365 - N.4 -- X Y Lambda= 0.2523
32.09 159.93
38.81 156.84
42.01 155.45
44.16 154.61
45.97 154.02
47.73 153.57
49.36 153.25
51.12 153.00
53.02 152.84
55.30 152.72
57.23 152.68
59.03 152.72
60.71 152.82
62.49 153.02
64.15 153.27
65.89 153.60
67.70 154.03
69.75 154.57
71.70 155.10
73.58 155.61
75.44 156.13
77.28 156.65
79.12 157.19
80.99 157.73
82.90 158.30
84.87 158.89
86.69 159.49
88.47 160.12
90.21 160.78
92.01 161.53
93.76 162.30
95.56 163.14
97.43 164.07
99.46 165.13
101.35 166.15
103.18 167.19
104.96 168.23
106.78 169.35
108.76 170.63
111.02 172.14
114.24 174.36
115.58 175.31
115.58 178.12

Fattore di sicurezza (FS) 2.7439 - N.5 -- X Y Lambda= 0.2477
22.56 158.62
29.86 154.85

33.28 153.18
35.54 152.20
37.41 151.54
39.26 151.06
40.92 150.75
42.74 150.54
44.70 150.44
47.12 150.42
49.24 150.45
51.23 150.52
53.12 150.64
55.05 150.80
56.92 151.01
58.85 151.27
60.85 151.59
63.03 151.98
65.04 152.37
66.99 152.79
68.88 153.24
70.82 153.74
72.71 154.27
74.65 154.85
76.64 155.49
78.78 156.21
80.78 156.92
82.73 157.64
84.64 158.39
86.58 159.18
88.50 160.00
90.46 160.88
92.50 161.83
94.69 162.88
96.66 163.89
98.57 164.94
100.41 166.03
102.33 167.24
104.40 168.65
106.77 170.37
110.20 172.99
112.71 174.94
112.71 177.67

Fattore di sicurezza (FS) 2.7449 - N.6 -- X Y Lambda= 0.2524
34.19 160.22
38.35 158.29
40.35 157.41
41.71 156.87
42.86 156.47
43.96 156.17
44.98 155.93
46.07 155.74
47.20 155.60
48.51 155.48
49.74 155.37
50.91 155.29
52.05 155.21
53.19 155.15
54.32 155.10
55.48 155.07
56.66 155.04
57.90 155.02
59.05 155.03
60.18 155.06
61.27 155.11
62.40 155.19
63.49 155.29
64.61 155.43
65.77 155.58
67.01 155.78
68.19 155.97
69.34 156.18
70.48 156.39
71.62 156.62
72.75 156.86

73.89 157.11
75.06 157.38
76.28 157.68
77.44 157.97
78.58 158.28
79.69 158.60
80.83 158.95
81.94 159.31
83.07 159.68
84.21 160.09
85.39 160.52
86.57 160.96
87.74 161.38
88.90 161.81
90.05 162.23
91.21 162.66
92.38 163.09
93.58 163.53
94.79 163.98
95.93 164.42
97.04 164.89
98.12 165.37
99.25 165.91
100.34 166.47
101.47 167.07
102.64 167.73
103.92 168.48
105.09 169.20
106.23 169.93
107.33 170.67
108.46 171.47
109.69 172.39
111.10 173.48
113.11 175.10
113.11 177.73

Fattore di sicurezza (FS) 2.7475 - N.7 -- X Y Lambda= 0.2447
35.44 160.49
43.35 157.07
46.99 155.60
49.36 154.79
51.28 154.31
53.23 154.03
54.94 153.92
56.82 153.96
58.86 154.15
61.40 154.51
63.72 154.85
65.90 155.19
68.02 155.54
70.10 155.90
72.19 156.28
74.29 156.68
76.45 157.10
78.70 157.56
80.80 158.03
82.84 158.54
84.84 159.08
86.90 159.69
88.92 160.33
91.02 161.05
93.22 161.85
95.65 162.78
97.76 163.67
99.76 164.62
101.66 165.63
103.69 166.82
105.82 168.22
108.32 170.00
111.97 172.79
115.21 175.34
115.21 178.07

Fattore di sicurezza (FS) 2.7480 - N.8 -- X Y Lambda= 0.2436

X	Y
32.17	159.94
40.11	156.41
43.76	154.88
46.15	154.04
48.08	153.53
50.04	153.22
51.76	153.08
53.66	153.09
55.74	153.25
58.31	153.57
60.63	153.88
62.81	154.21
64.90	154.55
66.98	154.93
69.03	155.33
71.12	155.77
73.25	156.25
75.50	156.78
77.64	157.32
79.73	157.87
81.78	158.44
83.86	159.06
85.94	159.70
88.08	160.40
90.32	161.15
92.76	162.01
94.84	162.84
96.82	163.74
98.68	164.71
100.71	165.90
102.81	167.31
105.30	169.14
108.97	172.05
112.64	175.06
112.64	177.66

Fattore di sicurezza (FS) 2.7492 - N.9 -- X Y Lambda= 0.2499

X	Y
31.05	159.79
39.35	155.60
43.13	153.80
45.58	152.82
47.54	152.22
49.55	151.85
51.27	151.68
53.21	151.69
55.32	151.85
58.00	152.20
60.44	152.54
62.72	152.88
64.93	153.22
67.10	153.57
69.27	153.95
71.48	154.35
73.77	154.78
76.19	155.25
78.35	155.74
80.43	156.29
82.43	156.90
84.54	157.63
86.56	158.41
88.67	159.31
90.90	160.34
93.41	161.59
95.67	162.77
97.82	163.97
99.90	165.20
102.04	166.54
104.35	168.09
106.99	169.96
110.80	172.79
113.99	175.21
113.99	177.87

Fattore di sicurezza (FS) 2.7504 - N.10 -- X Y Lambda= 0.2567

X	Y
26.92	159.24
35.41	155.88
39.43	154.39
42.13	153.52
44.39	152.93
46.60	152.52
48.63	152.26
50.83	152.12
53.21	152.08
56.08	152.15
58.53	152.29
60.81	152.49
62.94	152.78
65.18	153.17
67.29	153.62
69.51	154.19
71.82	154.88
74.43	155.73
76.87	156.55
79.21	157.38
81.49	158.22
83.78	159.09
86.05	159.99
88.37	160.95
90.75	161.96
93.27	163.07
95.60	164.14
97.86	165.26
100.07	166.40
102.35	167.65
104.82	169.10
107.64	170.83
111.69	173.43
114.80	175.48
114.80	178.00

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

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	2.711	11963.4	4412.7	7109.5	Surplus
2	2.724	8535.2	3132.9	5089.0	Surplus
3	2.734	9030.0	3302.4	5397.4	Surplus
4	2.737	10057.8	3675.4	6014.9	Surplus
5	2.744	11589.2	4223.7	6943.1	Surplus
6	2.745	8532.2	3108.3	5113.0	Surplus
7	2.748	9288.9	3380.8	5570.0	Surplus
8	2.748	9445.6	3437.2	5664.7	Surplus
9	2.749	10584.9	3850.1	6349.7	Surplus
10	2.750	10349.8	3763.0	6210.5	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 5089.0

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)
20.674	0.740	-30.10	3.99	0.00	0.00	26.00	19.50
21.415	0.740	-30.10	11.98	0.00	0.00	26.00	19.50

22.155	0.740	-30.10	19.97	0.00	0.00	26.00	19.50
22.895	0.605	-30.10	22.24	0.00	0.00	26.00	19.50
23.500	0.740	-30.10	34.50	0.00	0.00	26.00	19.50
24.240	0.740	-30.10	42.52	0.00	0.00	26.00	19.50
24.981	0.740	-30.10	50.54	0.00	0.00	26.00	19.50
25.721	0.740	-30.10	58.57	0.00	0.00	26.00	19.50
26.461	0.039	-30.10	3.30	0.00	0.00	26.00	19.50
26.500	0.740	-30.10	66.96	0.00	0.00	26.00	19.50
27.240	0.120	-30.10	11.58	0.00	0.00	26.00	19.50
27.360	0.740	-28.72	75.99	0.00	0.00	26.00	19.50
28.100	0.740	-28.72	83.56	0.00	0.00	26.00	19.50
28.841	0.740	-28.72	91.13	0.00	0.00	26.00	19.50
29.581	0.419	-28.72	54.95	0.00	0.00	26.00	19.50
30.000	0.414	-28.72	56.72	0.00	0.00	26.00	19.50
30.414	0.740	-25.33	106.79	0.00	0.00	26.00	19.50
31.155	0.740	-25.33	113.51	0.00	0.00	26.00	19.50
31.895	0.496	-25.33	79.86	0.00	0.00	26.00	19.50
32.391	0.740	-20.50	124.19	0.00	0.00	26.00	19.50
33.132	0.740	-20.50	129.81	0.00	0.00	26.00	19.50
33.872	0.092	-20.50	16.53	0.00	0.00	26.00	19.50
33.964	0.036	-14.06	6.52	0.00	0.00	26.00	19.50
34.000	0.740	-14.06	136.10	0.00	0.00	26.00	19.50
34.740	0.740	-14.06	141.23	0.00	0.00	26.00	19.50
35.481	0.103	-14.06	20.12	0.00	0.00	26.00	19.50
35.584	0.740	-8.80	146.56	0.00	0.00	26.00	19.50
36.324	0.641	-8.80	130.14	0.00	0.00	26.00	19.50
36.965	0.740	-3.19	153.61	0.00	0.00	26.00	19.50
37.705	0.740	-3.19	156.59	0.00	0.00	26.00	19.50
38.445	0.065	-3.19	13.90	0.00	0.00	26.00	19.50
38.511	0.740	1.34	159.39	0.00	0.00	26.00	19.50
39.251	0.740	1.34	161.49	0.00	0.00	26.00	19.50
39.991	0.203	1.34	44.60	0.00	0.00	26.00	19.50
40.194	0.740	4.51	163.85	0.00	0.00	26.00	19.50
40.934	0.740	4.51	165.34	0.00	0.00	26.00	19.50
41.674	0.650	4.51	146.51	0.00	0.00	26.00	19.50
42.325	0.740	4.57	168.12	0.00	0.00	26.00	19.50
43.065	0.740	4.57	169.59	0.00	0.00	26.00	19.50
43.805	0.495	4.57	114.28	0.00	0.00	26.00	19.50
44.301	0.740	4.62	172.04	0.00	0.00	26.00	19.50
45.041	0.740	4.62	173.51	0.00	0.00	26.00	19.50
45.781	0.380	4.62	89.54	0.00	0.00	26.00	19.50
46.161	0.740	4.68	175.71	0.00	0.00	26.00	19.50
46.901	0.599	4.68	143.20	0.00	0.00	26.00	19.50
47.500	0.475	4.68	114.18	0.00	0.00	26.00	19.50
47.975	0.740	4.74	179.28	0.00	0.00	26.00	19.50
48.715	0.740	4.74	180.74	0.00	0.00	26.00	19.50
49.455	0.275	4.74	67.53	0.00	0.00	26.00	19.50
49.730	0.740	4.80	182.73	0.00	0.00	26.00	19.50
50.471	0.740	4.80	184.17	0.00	0.00	26.00	19.50
51.211	0.291	4.80	72.88	0.00	0.00	26.00	19.50
51.502	0.740	4.86	186.18	0.00	0.00	26.00	19.50
52.242	0.740	4.86	187.61	0.00	0.00	26.00	19.50
52.983	0.296	4.86	75.44	0.00	0.00	26.00	19.50
53.279	0.740	4.91	189.61	0.00	0.00	26.00	19.50
54.019	0.740	4.91	191.04	0.00	0.00	26.00	19.50
54.759	0.318	4.91	82.52	0.00	0.00	26.00	19.50
55.078	0.740	4.97	193.06	0.00	0.00	26.00	19.50
55.818	0.182	4.97	47.74	0.00	0.00	26.00	19.50
56.000	0.740	4.97	194.86	0.00	0.00	26.00	19.50
56.740	0.155	4.97	40.86	0.00	0.00	26.00	19.50
56.895	0.740	5.71	196.59	0.00	0.00	26.00	19.50
57.635	0.740	5.71	197.93	0.00	0.00	26.00	19.50
58.375	0.268	5.71	71.91	0.00	0.00	26.00	19.50
58.643	0.740	6.49	199.69	0.00	0.00	26.00	19.50
59.383	0.740	6.49	200.88	0.00	0.00	26.00	19.50
60.124	0.245	6.49	66.81	0.00	0.00	26.00	19.50
60.369	0.740	7.29	202.39	0.00	0.00	26.00	19.50
61.109	0.740	7.29	203.42	0.00	0.00	26.00	19.50
61.849	0.223	7.29	61.46	0.00	0.00	26.00	19.50
62.072	0.740	8.09	204.69	0.00	0.00	26.00	19.50
62.813	0.740	8.09	205.56	0.00	0.00	26.00	19.50
63.553	0.257	8.09	71.63	0.00	0.00	26.00	19.50
63.810	0.740	8.90	206.66	0.00	0.00	26.00	19.50
64.550	0.450	8.90	125.84	0.00	0.00	26.00	19.50
65.000	0.525	8.90	147.33	0.00	0.00	26.00	19.50

65.525	0.740	9.70	208.31	0.00	0.00	26.00	19.50
66.265	0.740	9.70	208.93	0.00	0.00	26.00	19.50
67.006	0.268	9.70	75.83	0.00	0.00	26.00	19.50
67.274	0.740	10.46	209.69	0.00	0.00	26.00	19.50
68.014	0.740	10.46	210.15	0.00	0.00	26.00	19.50
68.754	0.315	10.46	89.45	0.00	0.00	26.00	19.50
69.069	0.740	11.16	210.74	0.00	0.00	26.00	19.50
69.809	0.740	11.16	211.06	0.00	0.00	26.00	19.50
70.549	0.419	11.16	119.53	0.00	0.00	26.00	19.50
70.968	0.740	12.12	211.47	0.00	0.00	26.00	19.50
71.709	0.740	12.12	211.59	0.00	0.00	26.00	19.50
72.449	0.296	12.12	84.56	0.00	0.00	26.00	19.50
72.745	0.740	13.17	211.67	0.00	0.00	26.00	19.50
73.485	0.740	13.17	211.58	0.00	0.00	26.00	19.50
74.225	0.250	13.17	71.29	0.00	0.00	26.00	19.50
74.475	0.740	14.27	211.35	0.00	0.00	26.00	19.50
75.215	0.740	14.27	211.04	0.00	0.00	26.00	19.50
75.955	0.209	14.27	59.51	0.00	0.00	26.00	19.50
76.164	0.740	15.36	210.53	0.00	0.00	26.00	19.50
76.904	0.740	15.36	209.99	0.00	0.00	26.00	19.50
77.645	0.250	15.36	70.93	0.00	0.00	26.00	19.50
77.895	0.740	16.44	209.16	0.00	0.00	26.00	19.50
78.635	0.740	16.44	208.40	0.00	0.00	26.00	19.50
79.376	0.213	16.44	59.92	0.00	0.00	26.00	19.50
79.589	0.740	17.50	207.30	0.00	0.00	26.00	19.50
80.329	0.740	17.50	206.32	0.00	0.00	26.00	19.50
81.070	0.257	17.50	71.31	0.00	0.00	26.00	19.50
81.326	0.740	18.50	204.88	0.00	0.00	26.00	19.50
82.067	0.433	18.50	119.39	0.00	0.00	26.00	19.50
82.500	0.618	18.50	169.46	0.00	0.00	26.00	19.50
83.118	0.740	19.39	201.96	0.00	0.00	26.00	19.50
83.858	0.740	19.39	200.63	0.00	0.00	26.00	19.50
84.598	0.441	19.39	119.00	0.00	0.00	26.00	19.50
85.040	0.740	20.37	198.40	0.00	0.00	26.00	19.50
85.780	0.740	20.37	196.85	0.00	0.00	26.00	19.50
86.520	0.307	20.37	81.12	0.00	0.00	26.00	19.50
86.827	0.673	21.45	176.95	0.00	0.00	26.00	19.50
87.500	0.740	21.45	193.19	0.00	0.00	26.00	19.50
88.240	0.322	21.45	83.55	0.00	0.00	26.00	19.50
88.562	0.740	22.58	191.26	0.00	0.00	26.00	19.50
89.302	0.698	22.58	178.90	0.00	0.00	26.00	19.50
90.000	0.253	22.58	64.39	0.00	0.00	26.00	19.50
90.253	0.740	23.68	186.81	0.00	0.00	26.00	19.50
90.993	0.740	23.68	183.99	0.00	0.00	26.00	19.50
91.733	0.250	23.68	61.55	0.00	0.00	26.00	19.50
91.983	0.017	24.78	4.07	0.00	0.00	26.00	19.50
92.000	0.740	24.78	180.32	0.00	0.00	26.00	19.50
92.740	0.740	24.78	177.81	0.00	0.00	26.00	19.50
93.481	0.199	24.78	47.33	0.00	0.00	26.00	19.50
93.679	0.740	25.85	174.51	0.00	0.00	26.00	19.50
94.420	0.740	25.85	171.75	0.00	0.00	26.00	19.50
95.160	0.262	25.85	60.17	0.00	0.00	26.00	19.50
95.422	0.740	26.84	167.90	0.00	0.00	26.00	19.50
96.162	0.740	26.84	164.90	0.00	0.00	26.00	19.50
96.903	0.097	26.84	21.45	0.00	0.00	26.00	19.50
97.000	0.226	26.84	49.69	0.00	0.00	26.00	19.50
97.226	0.740	27.72	160.52	0.00	0.00	26.00	19.50
97.967	0.740	27.72	157.36	0.00	0.00	26.00	19.50
98.707	0.465	27.72	97.26	0.00	0.00	26.00	19.50
99.172	0.740	28.97	152.04	0.00	0.00	26.00	19.50
99.912	0.740	28.97	148.56	0.00	0.00	26.00	19.50
100.653	0.300	28.97	59.28	0.00	0.00	26.00	19.50
100.953	0.547	30.35	106.41	0.00	0.00	26.00	19.50
101.500	0.740	30.35	140.53	0.00	0.00	26.00	19.50
102.240	0.435	30.35	80.65	0.00	0.00	26.00	19.50
102.675	0.740	31.79	133.85	0.00	0.00	26.00	19.50
103.415	0.740	31.79	129.38	0.00	0.00	26.00	19.50
104.156	0.187	31.79	32.05	0.00	0.00	26.00	19.50
104.343	0.657	33.18	109.91	0.00	0.00	26.00	19.50
105.000	0.740	33.18	119.26	0.00	0.00	26.00	19.50
105.740	0.329	33.18	51.42	0.00	0.00	26.00	19.50
106.069	0.740	34.93	111.93	0.00	0.00	26.00	19.50
106.810	0.690	34.93	99.54	0.00	0.00	26.00	19.50
107.500	0.436	34.93	60.32	0.00	0.00	26.00	19.50
107.936	0.064	36.28	8.64	0.00	0.00	26.00	19.50

108.000	0.740	36.28	97.57	0.00	0.00	26.00	19.50
108.740	0.260	36.28	33.09	0.00	0.00	26.00	19.50
109.000	0.740	36.28	90.32	0.00	0.00	26.00	19.50
109.740	0.332	36.28	38.43	0.00	0.00	26.00	19.50
110.072	0.740	37.46	81.00	0.00	0.00	26.00	19.50
110.812	0.188	37.46	19.47	0.00	0.00	26.00	19.50
111.000	0.740	37.46	73.16	0.00	0.00	26.00	19.50
111.740	0.260	37.46	24.34	0.00	0.00	26.00	19.50
112.000	0.740	37.46	65.01	0.00	0.00	26.00	19.50
112.740	0.402	37.46	32.44	0.00	0.00	26.00	19.50
113.142	0.740	38.05	54.50	0.00	0.00	26.00	19.50
113.882	0.740	38.05	47.56	0.00	0.00	26.00	19.50
114.622	0.740	38.05	40.62	0.00	0.00	26.00	19.50

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

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TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X	ht	yt	yt'	E(x)	T(x)	E'	rho(x)	FS_qFEM	FS_srmFEM		
(m)	(m)	(m)	(--)	(kN/m)	(kN/m)	(kN)	(--)	(--)	(--)		
20.674	0.000	158.354	-0.413	0.0000000000E+000	0.0000000000E+000	4.2490208932E-001	0.090	23.407	23.407		
21.415	0.134	158.059	-0.413	2.4084203294E+000	3.5815416337E-003	6.0818786336E+000	0.090	23.407	23.407		
22.155	0.248	157.744	-0.398	9.0045881464E+000	9.3531938132E-002	1.2460374522E+001	0.090	18.450	18.181		
22.895	0.402	157.469	-0.360	2.0856756358E+001	5.4383928614E-001	1.9890145244E+001	0.090	26.914	16.500		
23.500	0.543	157.259	-0.404	3.4803757187E+001	1.5319201996E+000	2.9624117635E+001	0.090	40.584	12.860		
24.240	0.638	156.925	-0.409	6.2681612538E+001	4.7912615970E+000	4.0629334417E+001	0.161	50.000	9.110		
24.981	0.796	156.654	-0.346	9.4957937355E+001	8.5850767260E+000	5.1082039953E+001	0.218	50.000	7.577		
25.721	0.984	156.413	-0.308	1.3831165371E+002	1.3864227889E+001	6.2093170406E+001	0.272	50.000	6.650		
26.461	1.199	156.198	-0.289	1.8689062130E+002	2.0078310796E+001	5.8866765213E+001	0.315	50.000	6.046		
26.500	1.211	156.188	-0.282	1.8916552943E+002	2.0369447298E+001	5.8934416578E+001	0.317	50.000	6.023		
27.240	1.430	155.979	-0.279	2.3874814137E+002	2.6797019636E+001	6.8117395555E+001	0.348	50.000	5.602		
27.360	1.469	155.948	-0.267	2.4693046055E+002	2.7877102065E+001	6.9769839307E+001	0.353	50.000	5.544		
28.100	1.676	155.749	-0.281	3.0529551755E+002	3.5837829423E+001	9.1318518228E+001	0.385	41.614	5.200		
28.841	1.864	155.532	-0.285	3.8213303468E+002	4.7081899523E+001	1.0761968265E+002	0.425	27.762	4.876		
29.581	2.065	155.327	-0.272	4.6463294881E+002	5.9663075940E+001	1.1356060849E+002	0.462	19.628	4.616		
30.000	2.185	155.217	-0.261	5.1272636031E+002	6.7222322146E+001	1.1945797117E+002	0.481	16.663	4.495		
30.414	2.304	155.110	-0.248	5.6415457743E+002	7.5598535586E+001	1.2416296941E+002	0.500	14.024	4.381		
31.155	2.475	154.930	-0.233	6.5614712519E+002	9.0956921081E+001	1.2466927027E+002	0.532	10.927	4.211		
31.895	2.661	154.765	-0.209	7.4873495151E+002	1.0692197965E+002	1.2037569984E+002	0.560	8.852	4.071		
32.391	2.802	154.671	-0.168	8.0691134683E+002	1.1733485402E+002	1.1371098218E+002	0.577	7.835	3.996		
33.132	2.965	154.558	-0.132	8.8720575132E+002	1.3240127781E+002	1.0227705420E+002	0.600	6.691	3.903		
33.872	3.160	154.476	-0.108	9.5833869443E+002	1.4651643804E+002	8.8082159687E+001	0.621	5.840	3.827		
33.964	3.187	154.468	-0.085	9.6635517708E+002	1.4815890422E+002	8.6328363979E+001	0.623	5.750	3.819		
34.000	3.193	154.465	-0.071	9.6946652654E+002	1.4880123432E+002	8.6134479605E+001	0.624	5.716	3.816		
34.740	3.326	154.413	-0.059	1.0348056998E+003	1.6266716754E+002	8.7541260029E+001	0.644	5.093	3.749		
35.481	3.476	154.378	-0.045	1.0990766421E+003	1.7697446648E+002	8.3399216574E+001	0.664	4.584	3.684		
35.584	3.499	154.375	-0.011	1.1076444726E+003	1.7894352622E+002	8.1645075917E+001	0.666	4.521	3.675		
36.324	3.607	154.369	0.002	1.1613131858E+003	1.9180446768E+002	7.0321387787E+001	0.684	4.160	3.617		
36.965	3.716	154.378	0.026	1.2051630547E+003	2.0285324605E+002	6.6417073113E+001	0.700	3.900	3.567		
37.705	3.783	154.404	0.046	1.2526021180E+003	2.1543907599E+002	6.0666886580E+001	0.719	3.656	3.509		
38.445	3.866	154.446	0.058	1.2949840394E+003	2.2736269560E+002	5.5157725205E+001	0.736	3.466	3.452		
38.511	3.874	154.450	0.083	1.2985601790E+003	2.2840104201E+002	5.4877108064E+001	0.738	3.451	3.447		
39.251	3.919	154.513	0.092	1.3383703654E+003	2.4041467775E+002	4.9626756432E+001	0.757	3.295	3.387		
39.991	3.976	154.587	0.101	1.3720355851E+003	2.5123187731E+002	3.9119422714E+001	0.773	3.182	3.332		
40.194	3.992	154.608	0.120	1.3796154248E+003	2.5380187773E+002	3.7347506279E+001	0.777	3.158	3.318		
40.934	4.026	154.700	0.128	1.4071805123E+003	2.6350507883E+002	3.4849558452E+001	0.793	3.076	3.264		
41.674	4.066	154.798	0.137	1.4312122981E+003	2.7234673449E+002	3.1212472837E+001	0.808	3.014	3.215		
42.325	4.106	154.891	0.147	1.4508008274E+003	2.7974938447E+002	2.9756716806E+001	0.820	2.968	3.174		
43.065	4.159	155.002	0.153	1.4725285213E+003	2.8802547257E+002	2.8968620286E+001	0.833	2.922	3.129		
43.805	4.215	155.118	0.159	1.4936906169E+003	2.9607233305E+002	2.8879932957E+001	0.845	2.880	3.087		
44.301	4.257	155.199	0.158	1.5080906520E+003	3.0148399180E+002	2.8011918586E+001	0.853	2.855	3.061		
45.041	4.311	155.312	0.152	1.5276496839E+003	3.0872228358E+002	2.6137207634E+001	0.863	2.823	3.027		
45.781	4.363	155.425	0.150	1.5467883644E+003	3.1572229608E+002	2.5161413105E+001	0.872	2.795	2.995		
46.161	4.388	155.480	0.145	1.5562056821E+003	3.1910921421E+002	2.4682074761E+001	0.877	2.783	2.981		

46.901	4.434	155.586	0.143	1.5742975683E+003	3.2558434101E+002	2.4166225291E+001	0.885	2.762	2.955
47.500	4.469	155.671	0.146	1.5886364248E+003	3.3070154201E+002	2.4856651049E+001	0.891	2.746	2.934
47.975	4.502	155.743	0.148	1.6007776895E+003	3.3504599070E+002	2.5207517066E+001	0.897	2.734	2.918
48.715	4.548	155.851	0.145	1.6190094427E+003	3.4157829232E+002	2.4522535222E+001	0.905	2.718	2.894
49.455	4.594	155.958	0.146	1.6370847820E+003	3.4808114459E+002	2.5135014327E+001	0.912	2.702	2.870
49.730	4.613	155.999	0.149	1.6440718005E+003	3.5061253775E+002	2.5298640325E+001	0.915	2.696	2.861
50.471	4.661	156.109	0.152	1.6625942689E+003	3.5735407035E+002	2.5576762414E+001	0.923	2.682	2.837
51.211	4.714	156.225	0.160	1.6819397399E+003	3.6443506652E+002	2.7931863233E+001	0.931	2.668	2.812
51.502	4.739	156.275	0.160	1.6902841459E+003	3.6749333183E+002	2.7902758755E+001	0.935	2.662	2.801
52.242	4.792	156.390	0.154	1.7095533283E+003	3.7457718654E+002	2.5687730254E+001	0.943	2.649	2.776
52.983	4.842	156.503	0.155	1.7283163799E+003	3.8147554287E+002	2.6143110748E+001	0.951	2.637	2.752
53.279	4.865	156.551	0.153	1.7361518794E+003	3.8435227051E+002	2.5867380365E+001	0.954	2.632	2.742
54.019	4.911	156.661	0.148	1.7542005049E+003	3.9097190080E+002	2.4039206363E+001	0.961	2.620	2.719
54.759	4.957	156.770	0.152	1.7717433743E+003	3.9740601860E+002	2.4867320789E+001	0.968	2.608	2.697
55.078	4.981	156.822	0.149	1.7798132056E+003	4.0037549672E+002	2.4425851517E+001	0.971	2.603	2.687
55.818	5.023	156.928	0.144	1.7962686796E+003	4.0642996756E+002	2.1834419179E+001	0.977	2.591	2.666
56.000	5.034	156.955	0.150	1.8002295701E+003	4.0789161137E+002	2.1788285190E+001	0.978	2.588	2.661
56.740	5.081	157.066	0.152	1.8165121439E+003	4.1395445768E+002	2.2327436069E+001	0.984	2.574	2.640
56.895	5.092	157.091	0.152	1.8199731197E+003	4.1525478307E+002	2.2045096273E+001	0.985	2.571	2.635
57.635	5.130	157.202	0.155	1.8350454117E+003	4.2098759581E+002	2.0339441701E+001	0.991	2.557	2.614
58.375	5.174	157.321	0.164	1.8500868899E+003	4.2682320940E+002	2.0774901873E+001	0.997	2.541	2.593
58.643	5.194	157.367	0.167	1.8556929585E+003	4.2903269606E+002	2.0300001805E+001	0.999	2.535	2.585
59.383	5.232	157.489	0.172	1.8694107776E+003	4.3457268245E+002	1.8501835756E+001	1.005	2.519	2.564
60.124	5.281	157.622	0.182	1.8830860422E+003	4.4025662975E+002	1.8277200939E+001	1.011	2.501	2.541
60.369	5.298	157.668	0.181	1.8875526735E+003	4.4213952177E+002	1.7663042704E+001	1.013	2.495	2.534
61.109	5.336	157.800	0.182	1.8994009632E+003	4.4728268486E+002	1.5346013288E+001	1.019	2.477	2.513
61.849	5.378	157.937	0.185	1.9102733718E+003	4.5216755636E+002	1.3355796129E+001	1.024	2.460	2.492
62.072	5.390	157.978	0.182	1.9131615872E+003	4.5350948476E+002	1.2663083383E+001	1.026	2.454	2.486
62.813	5.420	158.113	0.181	1.9218184450E+003	4.5764164867E+002	1.0738655564E+001	1.030	2.438	2.467
63.553	5.448	158.246	0.184	1.9290608145E+003	4.6127903805E+002	9.2329267913E+000	1.035	2.422	2.449
63.810	5.461	158.296	0.188	1.9313865872E+003	4.6249933705E+002	8.6756995225E+000	1.036	2.416	2.443
64.550	5.483	158.434	0.186	1.9370292983E+003	4.6560428797E+002	6.8290760676E+000	1.040	2.400	2.426
65.000	5.496	158.517	0.190	1.9398825709E+003	4.6727447297E+002	5.8245186520E+000	1.042	2.391	2.416
65.525	5.515	158.619	0.196	1.9426199818E+003	4.6904266231E+002	4.7141454544E+000	1.044	2.381	2.405
66.265	5.535	158.765	0.196	1.9455881524E+003	4.7122463792E+002	3.2220367029E+000	1.047	2.367	2.390
67.006	5.553	158.909	0.200	1.9473904015E+003	4.7295782219E+002	1.5402509468E+000	1.049	2.353	2.375
67.274	5.565	158.967	0.210	1.9477165570E+003	4.7349456833E+002	9.1771613502E-001	1.050	2.348	2.370
68.014	5.582	159.121	0.208	1.9477856986E+003	4.7463526066E+002	-6.5708626406E-001	1.052	2.335	2.356
68.754	5.599	159.274	0.214	1.9467437011E+003	4.7533708075E+002	-2.5954072702E+000	1.054	2.322	2.343
69.069	5.613	159.346	0.221	1.9457683369E+003	4.7547746681E+002	-3.4118071469E+000	1.054	2.316	2.337
69.809	5.627	159.507	0.213	1.9426999034E+003	4.7544324507E+002	-4.9094313806E+000	1.055	2.304	2.325
70.549	5.636	159.662	0.209	1.9384996277E+003	4.7496600776E+002	-7.0719727188E+000	1.055	2.292	2.314
70.968	5.641	159.749	0.216	1.9352070348E+003	4.7436447955E+002	-8.2034714484E+000	1.055	2.285	2.308
71.709	5.644	159.912	0.219	1.9286883663E+003	4.7299897407E+002	-9.7773864553E+000	1.055	2.273	2.298
72.449	5.648	160.074	0.219	1.9207310244E+003	4.7111900374E+002	-1.2034809212E+001	1.054	2.262	2.290
72.745	5.649	160.139	0.228	1.9170201118E+003	4.7018956384E+002	-1.2739295009E+001	1.053	2.257	2.286
73.485	5.647	160.310	0.231	1.9072357647E+003	4.6760584230E+002	-1.4376838333E+001	1.052	2.246	2.280
74.225	5.644	160.481	0.231	1.8957343355E+003	4.6443806132E+002	-1.6755802624E+001	1.049	2.236	2.274
74.475	5.644	160.538	0.240	1.8914511379E+003	4.6323615318E+002	-1.7309319416E+001	1.049	2.232	2.272
75.215	5.635	160.718	0.243	1.8783242064E+003	4.5947736982E+002	-1.8958172155E+001	1.046	2.223	2.268
75.955	5.627	160.898	0.243	1.8633824206E+003	4.5512141872E+002	-2.1717242020E+001	1.043	2.215	2.265
76.164	5.625	160.949	0.253	1.8587541122E+003	4.5376211338E+002	-2.2252056409E+001	1.042	2.212	2.264
76.904	5.610	161.138	0.255	1.8420137704E+003	4.4879895539E+002	-2.4019048894E+001	1.038	2.205	2.263
77.645	5.596	161.327	0.254	1.8231924616E+003	4.4315956007E+002	-2.6348223118E+001	1.034	2.199	2.263
77.895	5.590	161.390	0.249	1.8165142391E+003	4.4114893995E+002	-2.6748996392E+001	1.032	2.197	2.263
78.635	5.555	161.574	0.246	1.7965194417E+003	4.3510413984E+002	-2.7515449698E+001	1.028	2.192	2.264
79.376	5.519	161.755	0.250	1.7757759562E+003	4.2878397980E+002	-3.0648868543E+001	1.023	2.188	2.266
79.589	5.512	161.812	0.259	1.7690754258E+003	4.2672484155E+002	-3.1360667396E+001	1.021	2.187	2.266
80.329	5.469	162.002	0.256	1.7459766757E+003	4.1960226893E+002	-3.1599464205E+001	1.015	2.184	2.269
81.070	5.424	162.191	0.260	1.7222905131E+003	4.1223297168E+002	-3.4603390939E+001	1.009	2.183	2.272
81.326	5.414	162.261	0.276	1.7131758266E+003	4.0937007851E+002	-3.5721367392E+001	1.006	2.182	2.273
82.067	5.371	162.465	0.274	1.6862753220E+003	4.0086405591E+002	-3.6494782063E+001	0.999	2.182	2.277
82.500	5.344	162.583	0.283	1.6704183073E+003	3.9581131927E+002	-3.7894021566E+001	0.994	2.182	2.279
83.118	5.316	162.763	0.293	1.6458613128E+003	3.8792499557E+002	-4.0418272432E+001	0.986	2.183	2.282
83.858	5.274	162.981	0.296	1.6153542404E+003	3.7806794051E+002	-4.1680130387E+001	0.976	2.184	2.285
84.598	5.234	163.201	0.311	1.5841513658E+003	3.6794994388E+002	-4.5798015417E+001	0.966	2.186	2.289
85.040	5.226	163.349	0.315	1.5629761059E+003	3.6109603124E+002	-4.6610339131E+001	0.958	2.188	2.291
85.780	5.176	163.574	0.313	1.5301633501E+003	3.5049626371E+002	-4.5895691140E+001	0.947	2.191	2.295
86.520	5.139	163.811	0.332	1.4950247669E+003	3.3924573846E+002	-5.1895847755E+001	0.934	2.194	2.301
86.827	5.135	163.921	0.338	1.4785415050E+003	3.3402960825E+002	-5.2521646205E+001	0.928	2.196	2.304
87.500	5.091	164.142	0.328	1.4449785591E+003	3.2350815952E+002	-5.0020885545E+001	0.917	2.201	2.311
88.240	5.043	164.384	0.324	1.4078243418E+003	3.1202621107E+002	-4.9546962481E+001	0.903	2.208	2.321
88.562	5.018	164.486	0.314	1.3919765393E+003	3.0720594406E+002	-4.9166073707E+001	0.897	2.211	2.326
89.302	4.942	164.718	0.313	1.3557531966E+003	2.9632453476E+002	-4.9382595049E+001	0.884	2.219	2.338
90.000	4.871	164.937	0.317	1.3209989440E+003	2.8605447123E+002	-5.1560039612E+001	0.871	2.229	2.352

90.253	4.848	165.019	0.309	1.3078117570E+003	2.8219341032E+002	-5.1354506687E+001	0.867	2.233	2.357
90.993	4.748	165.243	0.312	1.2716173436E+003	2.7175105002E+002	-5.0461106478E+001	0.855	2.245	2.375
91.733	4.660	165.481	0.326	1.2331010453E+003	2.6079461329E+002	-5.4930928674E+001	0.843	2.259	2.395
91.983	4.636	165.567	0.344	1.2191129246E+003	2.5685279630E+002	-5.5697770072E+001	0.838	2.265	2.403
92.000	4.634	165.572	0.332	1.2181884307E+003	2.5659265348E+002	-5.5648195745E+001	0.838	2.266	2.403
92.740	4.539	165.818	0.330	1.1781612638E+003	2.4542894520E+002	-5.3651405877E+001	0.824	2.284	2.427
93.481	4.439	166.060	0.332	1.1387542884E+003	2.3455570228E+002	-5.6065823473E+001	0.810	2.303	2.452
93.679	4.417	166.130	0.342	1.1274550198E+003	2.3145907580E+002	-5.6468707006E+001	0.806	2.309	2.459
94.420	4.310	166.382	0.340	1.0866394093E+003	2.2033534839E+002	-5.4994227806E+001	0.791	2.330	2.485
95.160	4.203	166.634	0.347	1.0460327485E+003	2.0935312215E+002	-5.7363419810E+001	0.776	2.352	2.512
95.422	4.172	166.729	0.370	1.0307604821E+003	2.0524701388E+002	-5.8468080319E+001	0.770	2.361	2.522
96.162	4.073	167.005	0.371	9.8702702102E+002	1.9355871039E+002	-5.8595816512E+001	0.752	2.384	2.549
96.903	3.972	167.278	0.370	9.4400584150E+002	1.8215214287E+002	-5.7791361446E+001	0.734	2.407	2.575
97.000	3.958	167.314	0.395	9.3838638827E+002	1.8066995769E+002	-5.9382295430E+001	0.731	2.410	2.578
97.226	3.936	167.406	0.387	9.2408853149E+002	1.7691179785E+002	-6.2139762008E+001	0.725	2.417	2.586
97.967	3.829	167.688	0.377	8.8060922004E+002	1.6557075761E+002	-5.7812104576E+001	0.706	2.437	2.608
98.707	3.717	167.965	0.395	8.3849422372E+002	1.5471122804E+002	-6.1504464415E+001	0.686	2.455	2.627
99.172	3.671	168.164	0.414	8.0853482861E+002	1.4707000554E+002	-6.2712852298E+001	0.671	2.466	2.638
99.912	3.561	168.463	0.416	7.6410172402E+002	1.3588101368E+002	-6.1309567483E+001	0.648	2.480	2.652
100.653	3.468	168.780	0.432	7.1776231606E+002	1.2439278468E+002	-6.3566534016E+001	0.623	2.493	2.664
100.953	3.434	168.913	0.430	6.9855409982E+002	1.1968982854E+002	-6.2743770001E+001	0.612	2.498	2.668
101.500	3.345	169.144	0.434	6.6544005569E+002	1.1171349761E+002	-6.1324427989E+001	0.594	2.505	2.674
102.240	3.239	169.472	0.469	6.1924555630E+002	1.0076970270E+002	-6.7782235488E+001	0.567	2.514	2.681
102.675	3.208	169.696	0.475	5.8839362603E+002	9.3675315295E+001	-6.7153720574E+001	0.547	2.520	2.687
103.415	3.084	170.030	0.459	5.4345642451E+002	8.3704590191E+001	-6.0853913234E+001	0.520	2.530	2.694
104.156	2.970	170.375	0.470	4.9829573707E+002	7.4021525784E+001	-6.2379866436E+001	0.491	2.542	2.705
104.343	2.945	170.466	0.475	4.8653993891E+002	7.1553683442E+001	-6.1960778483E+001	0.484	2.545	2.708
105.000	2.825	170.776	0.479	4.4760615995E+002	6.3651456320E+001	-5.9228008947E+001	0.458	2.559	2.721
105.740	2.701	171.136	0.483	4.0379737478E+002	5.5099342779E+001	-5.7382652301E+001	0.428	2.579	2.739
106.069	2.642	171.292	0.494	3.8518424628E+002	5.1561212756E+001	-5.6905454360E+001	0.415	2.588	2.749
106.810	2.498	171.665	0.485	3.4252372587E+002	4.3763830288E+001	-5.4243778564E+001	0.384	2.614	2.774
107.500	2.337	171.986	0.474	3.0724794016E+002	3.7608533776E+001	-5.1293786035E+001	0.357	2.639	2.798
107.936	2.245	172.198	0.482	2.8481784280E+002	3.3830759778E+001	-4.6652466142E+001	0.340	2.655	2.812
108.000	2.226	172.227	0.455	2.8188500173E+002	3.3349007016E+001	-4.5930332391E+001	0.338	2.657	2.814
108.740	2.021	172.564	0.456	2.4808948279E+002	2.7955056464E+001	-4.4814560598E+001	0.310	2.679	2.832
109.000	1.948	172.683	0.467	2.3652659040E+002	2.6149049321E+001	-4.4378348754E+001	0.299	2.686	2.837
109.740	1.754	173.032	0.468	2.0397440724E+002	2.1258975704E+001	-4.4034333477E+001	0.271	2.718	2.866
110.072	1.663	173.184	0.478	1.8935442297E+002	1.9036261941E+001	-4.4118751281E+001	0.255	2.732	2.878
110.812	1.456	173.545	0.488	1.5660032131E+002	1.4291192491E+001	-4.2726433476E+001	0.218	2.761	2.899
111.000	1.405	173.637	0.553	1.4865562600E+002	1.3191762442E+001	-4.3206469392E+001	0.209	2.768	2.902
111.740	1.259	174.058	0.556	1.1414414445E+002	8.5502334242E+000	-4.1219148675E+001	0.157	2.775	2.892
112.000	1.195	174.193	0.537	1.0393079303E+002	7.2421158149E+000	-3.8957585425E+001	0.141	2.765	2.874
112.740	1.030	174.595	0.559	7.5865451227E+001	3.8831185368E+000	-3.7240331322E+001	0.090	2.665	2.735
113.142	0.958	174.831	0.582	6.1058286284E+001	2.3296929116E+000	-3.5024866510E+001	0.090	2.554	2.603
113.882	0.807	175.260	0.638	3.7656651690E+001	6.9445840475E-001	-3.1164191492E+001	0.090	2.206	2.205
114.622	0.743	175.775	0.638	1.4917821107E+001	6.6461251126E-002	-2.5434054462E+001	0.090	1.878	1.835

LEGENDA SIMBOLI

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

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TABELLA SFORZI DI TAGLIO DISTRIBUITI LUNGO SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	dl (m)	alpha (°)	TauStress (kPa)	TauF (kN/m)	TauStrength (kPa)	TauS (kN/m)
20.674	0.740	0.856	-30.101	-2.240	-1.916	21.505	18.401
21.415	0.740	0.856	-30.101	-6.719	-5.749	25.681	21.974
22.155	0.740	0.856	-30.101	-11.198	-9.582	30.427	26.035
22.895	0.605	0.699	-30.101	-15.267	-10.673	35.637	24.914
23.500	0.740	0.856	-30.101	-19.347	-16.555	43.545	37.260
24.240	0.740	0.856	-30.101	-23.847	-20.405	48.672	41.647
24.981	0.740	0.856	-30.101	-28.347	-24.256	55.779	47.728
25.721	0.740	0.856	-30.101	-32.847	-28.106	61.739	52.829
26.461	0.039	0.045	-30.101	-35.215	-1.583	62.455	2.807

26.500	0.740	0.856	-30.101	-37.555	-32.135	66.384	56.803
27.240	0.120	0.138	-30.101	-40.137	-5.558	69.200	9.582
27.360	0.740	0.844	-28.718	-41.283	-34.848	74.855	63.186
28.100	0.740	0.844	-28.718	-45.396	-38.319	85.475	72.150
28.841	0.740	0.844	-28.718	-49.509	-41.791	92.105	77.746
29.581	0.419	0.478	-28.718	-52.729	-25.197	96.732	46.224
30.000	0.414	0.473	-28.718	-55.041	-26.008	102.220	48.300
30.414	0.740	0.819	-25.325	-52.830	-43.267	107.681	88.190
31.155	0.740	0.819	-25.325	-56.155	-45.991	112.528	92.159
31.895	0.496	0.549	-25.325	-58.933	-32.356	114.741	62.997
32.391	0.740	0.790	-20.501	-51.354	-40.587	118.768	93.866
33.132	0.740	0.790	-20.501	-53.678	-42.424	120.354	95.120
33.872	0.092	0.098	-20.501	-54.984	-5.404	120.584	11.851
33.964	0.036	0.037	-14.056	-38.223	-1.425	122.234	4.557
34.000	0.740	0.763	-14.056	-38.988	-29.753	124.966	95.365
34.740	0.740	0.763	-14.056	-40.460	-30.876	128.826	98.311
35.481	0.103	0.107	-14.056	-41.299	-4.399	130.356	13.885
35.584	0.740	0.749	-8.799	-25.093	-18.797	129.560	97.053
36.324	0.641	0.648	-8.799	-25.744	-16.691	131.902	85.520
36.965	0.740	0.741	-3.189	-6.352	-4.710	131.361	97.395
37.705	0.740	0.741	-3.189	-6.476	-4.801	132.750	98.425
38.445	0.065	0.065	-3.189	-6.543	-0.426	133.723	8.712
38.511	0.740	0.740	1.345	10.431	7.724	131.273	97.205
39.251	0.740	0.740	1.345	10.569	7.826	131.969	97.721
39.991	0.203	0.203	1.345	10.656	2.162	132.027	26.781
40.194	0.740	0.743	4.515	22.868	16.981	130.139	96.639
40.934	0.740	0.743	4.515	23.075	17.135	130.792	97.124
41.674	0.650	0.653	4.515	23.269	15.183	131.549	85.838
42.325	0.740	0.743	4.565	23.660	17.571	132.356	98.293
43.065	0.740	0.743	4.565	23.868	17.725	133.235	98.945
43.805	0.495	0.497	4.565	24.041	11.944	134.054	66.602
44.301	0.740	0.743	4.622	24.439	18.151	134.496	99.890
45.041	0.740	0.743	4.622	24.647	18.305	135.366	100.535
45.781	0.380	0.381	4.622	24.804	9.447	135.946	51.777
46.161	0.740	0.743	4.680	25.197	18.715	136.571	101.439
46.901	0.599	0.601	4.680	25.385	15.252	137.375	82.538
47.500	0.475	0.476	4.680	25.537	12.162	138.226	65.830
47.975	0.740	0.743	4.742	25.964	19.287	138.872	103.157
48.715	0.740	0.743	4.742	26.175	19.443	139.812	103.855
49.455	0.275	0.276	4.742	26.320	7.264	140.573	38.799
49.730	0.740	0.743	4.799	26.707	19.840	141.148	104.857
50.471	0.740	0.743	4.799	26.918	19.997	142.209	105.645
51.211	0.291	0.292	4.799	27.066	7.913	143.107	41.842
51.502	0.740	0.743	4.856	27.457	20.399	143.471	106.591
52.242	0.740	0.743	4.856	27.669	20.556	144.343	107.239
52.983	0.296	0.297	4.856	27.817	8.266	145.099	43.119
53.279	0.740	0.743	4.913	28.212	20.962	145.504	108.111
54.019	0.740	0.743	4.913	28.424	21.119	146.369	108.754
54.759	0.318	0.319	4.913	28.575	9.123	147.195	46.993
55.078	0.740	0.743	4.969	28.974	21.530	147.516	109.615
55.818	0.182	0.183	4.969	29.106	5.324	148.051	27.079
56.000	0.740	0.743	4.969	29.244	21.730	148.692	110.489
56.740	0.155	0.155	4.969	29.379	4.557	149.336	23.164
56.895	0.740	0.744	5.708	32.853	24.442	149.082	110.913
57.635	0.740	0.744	5.708	33.078	24.609	149.987	111.586
58.375	0.268	0.269	5.708	33.231	8.941	150.662	40.536
58.643	0.740	0.745	6.488	36.941	27.523	150.340	112.011
59.383	0.740	0.745	6.488	37.161	27.687	151.148	112.613
60.124	0.245	0.247	6.488	37.308	9.209	151.662	37.435
60.369	0.740	0.746	7.293	41.147	30.709	151.236	112.870
61.109	0.740	0.746	7.293	41.358	30.866	151.856	113.332
61.849	0.223	0.225	7.293	41.494	9.326	152.210	34.211
62.072	0.740	0.748	8.089	45.297	33.869	151.777	113.487
62.813	0.740	0.748	8.089	45.491	34.014	152.274	113.859
63.553	0.257	0.260	8.089	45.622	11.853	152.637	39.657
63.810	0.740	0.749	8.898	49.474	37.071	152.141	113.999
64.550	0.450	0.455	8.898	49.612	22.573	152.480	69.378
65.000	0.525	0.531	8.898	49.730	26.427	152.774	81.187
65.525	0.740	0.751	9.698	53.560	40.224	152.352	114.418
66.265	0.740	0.751	9.698	53.718	40.343	152.730	114.702
67.006	0.268	0.272	9.698	53.826	14.643	152.989	41.619
67.274	0.740	0.753	10.462	57.426	43.230	152.462	114.773
68.014	0.740	0.753	10.462	57.553	43.325	152.763	114.999
68.754	0.315	0.320	10.462	57.643	18.442	152.978	48.942
69.069	0.740	0.755	11.163	60.919	45.967	152.484	115.058

69.809	0.740	0.755	11.163	61.012	46.037	152.714	115.231
70.549	0.419	0.427	11.163	61.084	26.073	152.909	65.266
70.968	0.740	0.757	12.124	65.483	49.582	152.130	115.188
71.709	0.740	0.757	12.124	65.523	49.612	152.273	115.296
72.449	0.296	0.302	12.124	65.550	19.827	152.383	46.092
72.745	0.740	0.760	13.173	70.225	53.391	151.424	115.126
73.485	0.740	0.760	13.173	70.196	53.369	151.481	115.169
74.225	0.250	0.256	13.173	70.177	17.983	151.520	38.827
74.475	0.740	0.764	14.270	74.905	57.216	150.419	114.897
75.215	0.740	0.764	14.270	74.794	57.131	150.381	114.868
75.955	0.209	0.216	14.270	74.724	16.111	150.376	32.422
76.164	0.740	0.768	15.355	79.230	60.823	149.196	114.535
76.904	0.740	0.768	15.355	79.028	60.668	149.087	114.452
77.645	0.250	0.260	15.355	78.893	20.493	148.967	38.696
77.895	0.740	0.772	16.435	83.173	64.194	147.683	113.984
78.635	0.740	0.772	16.435	82.869	63.960	147.331	113.713
79.376	0.213	0.222	16.435	82.674	18.390	147.356	32.778
79.589	0.740	0.776	17.499	86.674	67.276	145.966	113.299
80.329	0.740	0.776	17.499	86.261	66.956	145.490	112.930
81.070	0.257	0.269	17.499	85.983	23.143	145.495	39.161
81.326	0.740	0.781	18.495	89.484	69.851	144.217	112.576
82.067	0.433	0.457	18.495	89.068	40.706	143.721	65.683
82.500	0.618	0.651	18.495	88.707	57.776	143.654	93.563
83.118	0.740	0.785	19.386	91.491	71.800	142.385	111.740
83.858	0.740	0.785	19.386	90.888	71.327	141.758	111.248
84.598	0.441	0.468	19.386	90.407	42.304	141.913	66.405
85.040	0.740	0.790	20.373	93.352	73.718	139.839	110.428
85.780	0.740	0.790	20.373	92.624	73.143	139.353	110.044
86.520	0.307	0.327	20.373	92.110	30.142	139.550	45.666
86.827	0.673	0.723	21.452	95.186	68.833	137.309	99.294
87.500	0.740	0.795	21.452	94.483	75.150	136.435	108.518
88.240	0.322	0.346	21.452	94.043	32.502	135.664	46.887
88.562	0.740	0.802	22.576	97.095	77.842	133.840	107.301
89.302	0.698	0.756	22.576	96.352	72.811	133.037	100.533
90.000	0.253	0.274	22.576	95.770	26.205	132.706	36.311
90.253	0.740	0.808	23.684	98.119	79.316	129.887	104.996
90.993	0.740	0.808	23.684	96.641	78.121	128.757	104.082
91.733	0.250	0.273	23.684	95.652	26.131	128.290	35.048
91.983	0.017	0.018	24.780	98.408	1.800	126.857	2.320
92.000	0.740	0.815	24.780	97.711	79.669	125.796	102.568
92.740	0.740	0.815	24.780	96.354	78.562	124.205	101.271
93.481	0.199	0.219	24.780	95.493	20.913	123.910	27.136
93.679	0.740	0.823	25.848	97.267	80.010	121.541	99.977
94.420	0.740	0.823	25.848	95.730	78.746	119.960	98.676
95.160	0.262	0.291	25.848	94.690	27.585	119.529	34.821
95.422	0.740	0.830	26.841	95.886	79.553	117.569	97.543
96.162	0.740	0.830	26.841	94.175	78.134	115.749	96.033
96.903	0.097	0.109	26.841	93.207	10.165	114.747	12.514
97.000	0.226	0.254	26.841	92.836	23.546	115.379	29.263
97.226	0.740	0.836	27.717	93.529	78.212	112.540	94.109
97.967	0.740	0.836	27.717	91.684	76.669	110.449	92.361
98.707	0.465	0.525	27.717	90.182	47.388	110.424	58.025
99.172	0.740	0.846	28.970	90.961	76.967	106.834	90.398
99.912	0.740	0.846	28.970	88.878	75.205	105.417	89.199
100.653	0.300	0.343	28.970	87.415	30.007	104.310	35.806
100.953	0.547	0.634	30.354	88.441	56.070	101.051	64.065
101.500	0.740	0.858	30.354	86.315	74.047	99.544	85.397
102.240	0.435	0.504	30.354	84.321	42.495	99.228	50.008
102.675	0.740	0.871	31.792	84.231	73.361	93.829	81.721
103.415	0.740	0.871	31.792	81.419	70.911	91.400	79.605
104.156	0.187	0.220	31.792	79.657	17.563	90.164	19.880
104.343	0.657	0.785	33.185	79.576	62.457	86.556	67.936
105.000	0.740	0.885	33.185	76.619	67.772	84.037	74.334
105.740	0.329	0.393	33.185	74.343	29.220	81.711	32.116
106.069	0.740	0.903	34.926	73.516	66.377	78.159	70.570
106.810	0.690	0.842	34.926	70.090	59.029	74.360	62.625
107.500	0.436	0.532	34.926	67.238	35.771	72.232	38.427
107.936	0.064	0.079	36.277	66.806	5.289	69.014	5.464
108.000	0.740	0.918	36.277	65.013	59.699	67.626	62.099
108.740	0.260	0.322	36.277	62.845	20.247	65.934	21.242
109.000	0.740	0.918	36.277	60.179	55.261	63.912	58.689
109.740	0.332	0.412	36.277	57.133	23.515	62.082	25.552
110.072	0.740	0.933	37.455	54.544	50.864	58.904	54.930
110.812	0.188	0.236	37.455	51.728	12.227	56.650	13.390
111.000	0.740	0.933	37.455	49.268	45.945	55.573	51.825

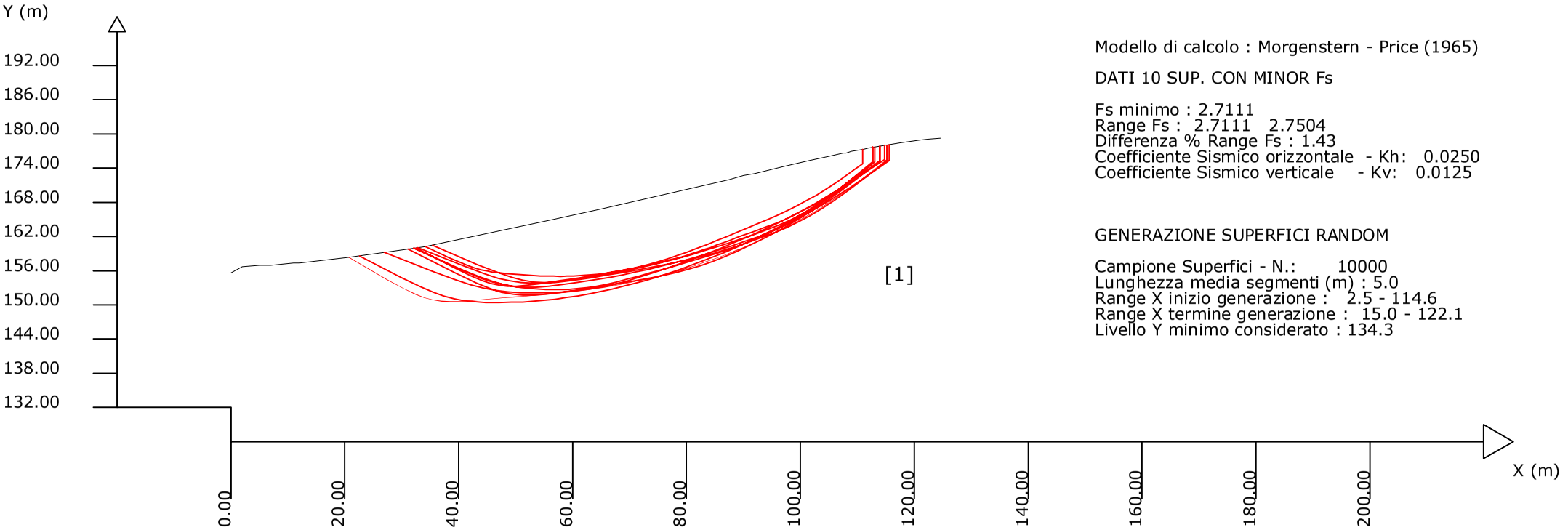
111.740	0.260	0.327	37.455	46.714	15.283	52.793	17.273
112.000	0.740	0.933	37.455	43.776	40.823	50.517	47.109
112.740	0.402	0.506	37.455	40.269	20.369	47.726	24.141
113.142	0.740	0.940	38.048	36.872	34.661	43.570	40.958
113.882	0.740	0.940	38.048	32.178	30.249	39.412	37.049
114.622	0.740	0.940	38.048	27.485	25.837	35.864	33.714

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 : 14/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Morgenstern - Price (1965)

DATI 10 SUP. CON MINOR Fs

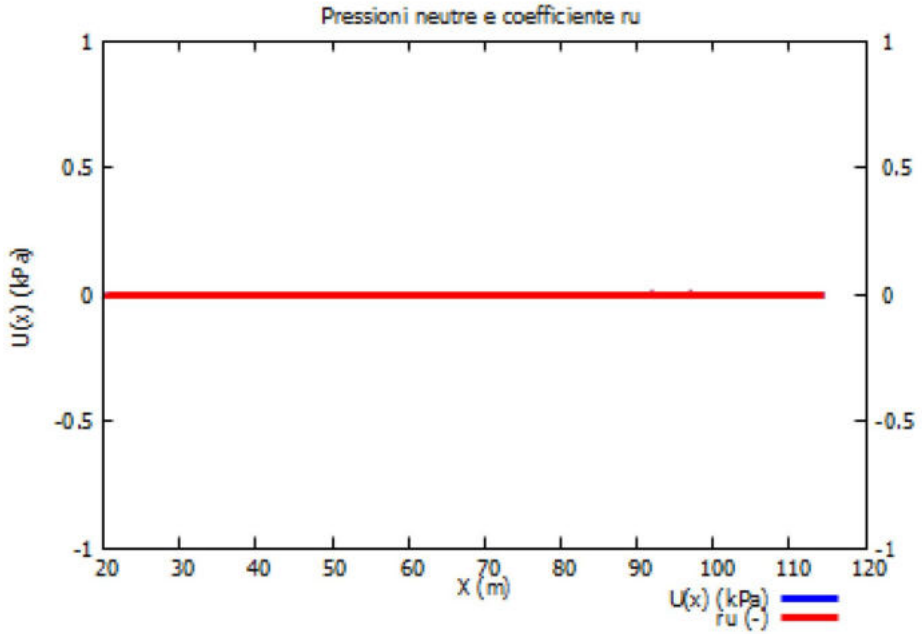
Fs minimo : 2.7111
Range Fs : 2.7111 2.7504
Differenza % Range Fs : 1.43
Coefficiente Sismico orizzontale - Kh: 0.0250
Coefficiente Sismico verticale - Kv: 0.0125

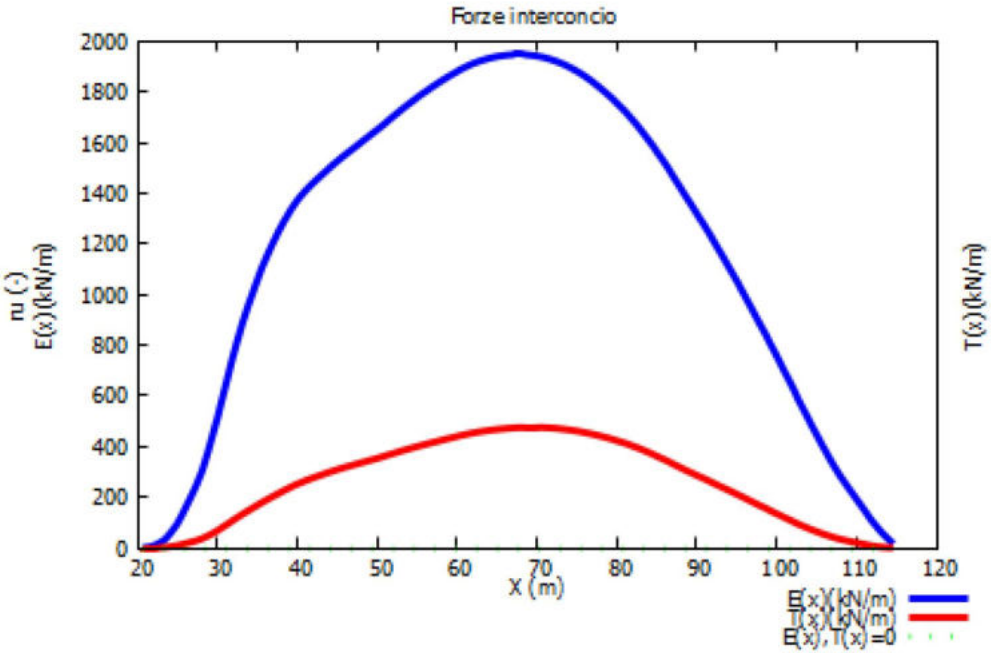
GENERAZIONE SUPERFICI RANDOM

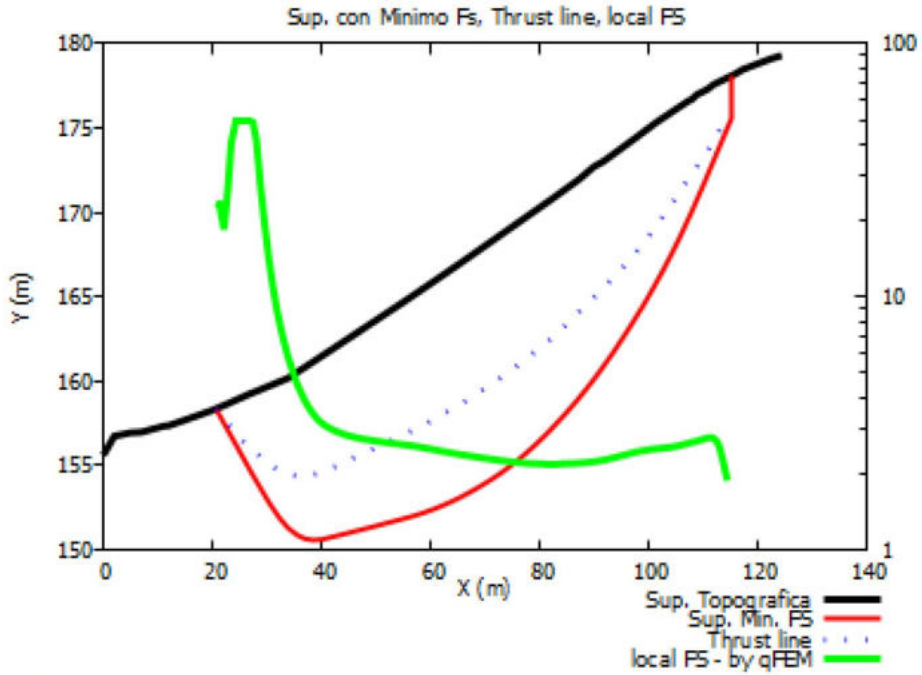
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 5.0
Range X inizio generazione : 2.5 - 114.6
Range X termine generazione : 15.0 - 122.1
Livello Y minimo considerato : 134.3

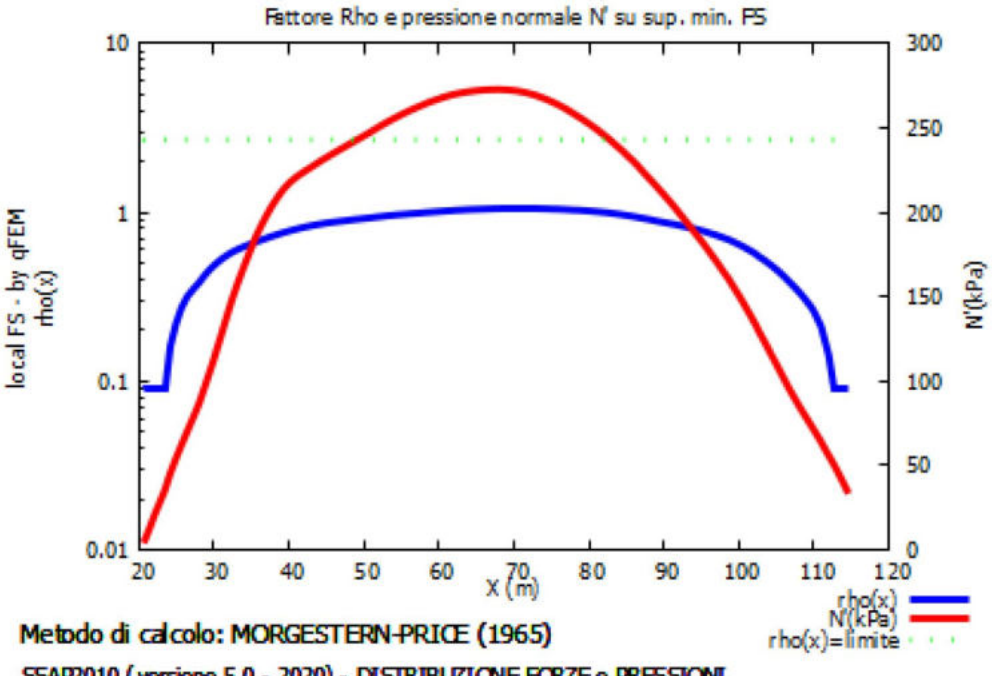
Parametri Geotecnici degli strati # ----------

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





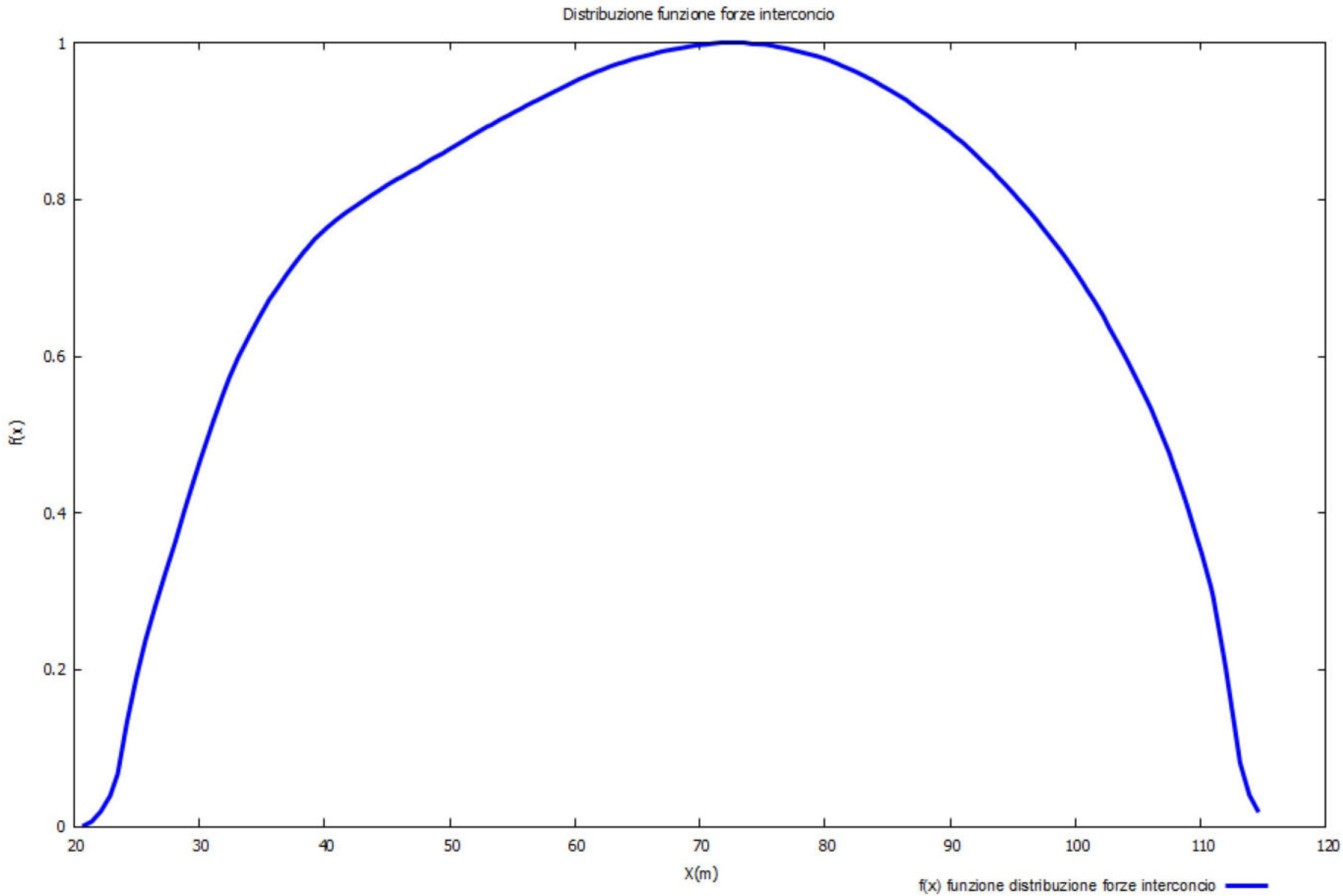


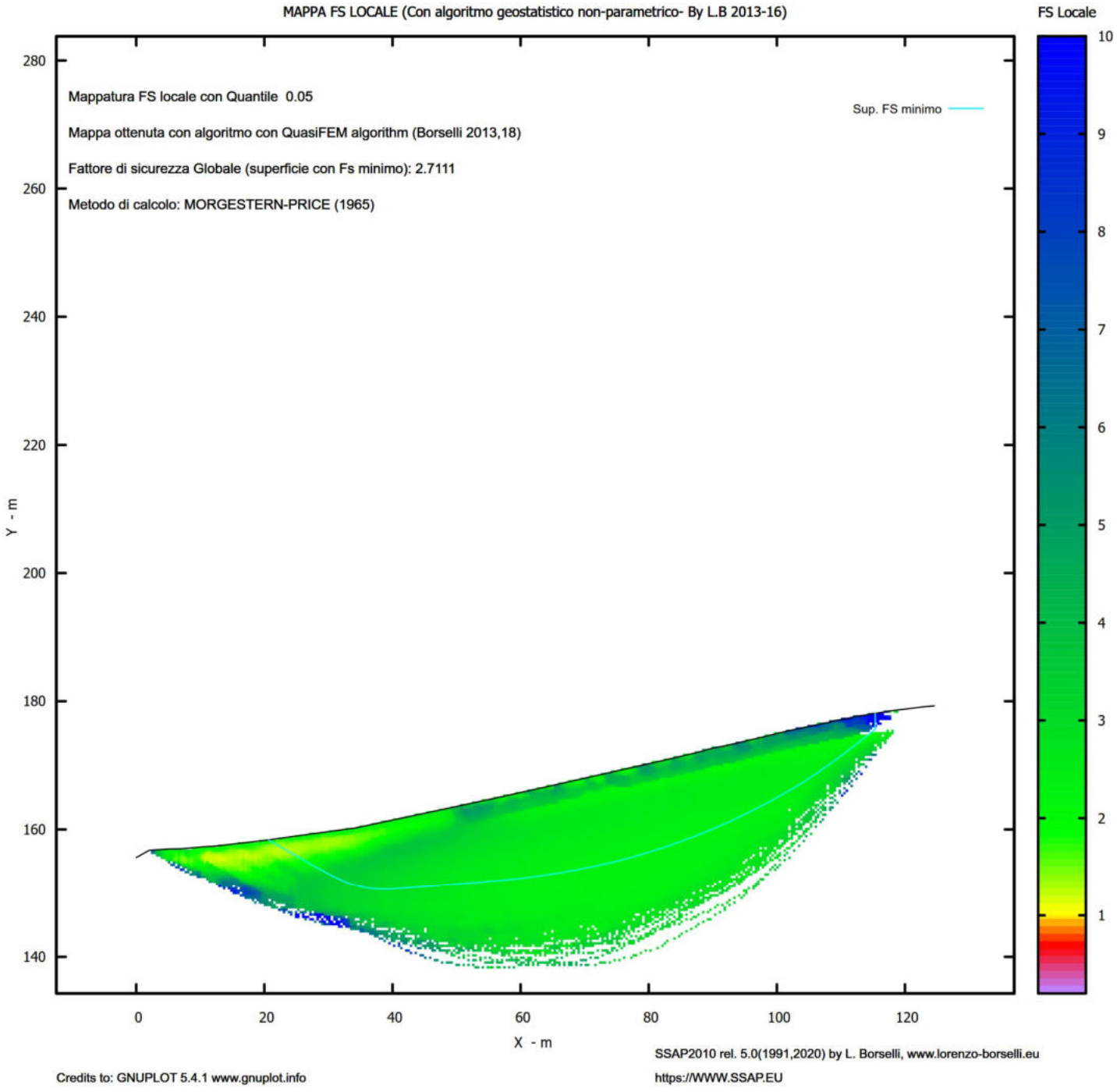


Metodo di calcolo: MORGESTERN-PRICE (1965)

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

14/11/21 11:50


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


MAPPA FS LOCALE (Con algoritmo geostatistico non-parametrico- By L.B 2013-16)
FS Locale
Mappatura FS locale con Quantile 0.05
Mappa ottenuta con algoritmo con QuasiFEM algorithm (Borselli 2013,18)
Fattore di sicurezza Globale (superficie con Fs minimo): 2.7111
Metodo di calcolo: MORGESTERN-PRICE (1965)
Sup. FS minimo
Y - m
X - m
280
260
240
220
200
180
160
140
0
20
40
60
80
100
120
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\MIADONNA\VERIFICA 2\DRENATA\BERSELLI\BERSELLI.txt
Data: 14/11/2021
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	155.60	-	-	-	-	-	-
2.00	156.73	-	-	-	-	-	-
5.00	156.94	-	-	-	-	-	-
7.00	156.97	-	-	-	-	-	-
11.00	157.32	-	-	-	-	-	-
12.00	157.36	-	-	-	-	-	-
17.00	157.92	-	-	-	-	-	-
20.50	158.33	-	-	-	-	-	-
23.50	158.75	-	-	-	-	-	-
26.50	159.18	-	-	-	-	-	-
30.00	159.65	-	-	-	-	-	-
34.00	160.18	-	-	-	-	-	-
47.50	163.05	-	-	-	-	-	-
56.00	164.87	-	-	-	-	-	-
65.00	166.86	-	-	-	-	-	-
82.50	170.82	-	-	-	-	-	-
87.50	171.98	-	-	-	-	-	-
90.00	172.68	-	-	-	-	-	-
92.00	173.05	-	-	-	-	-	-
97.00	174.23	-	-	-	-	-	-
101.50	175.31	-	-	-	-	-	-
105.00	176.07	-	-	-	-	-	-
107.50	176.60	-	-	-	-	-	-
108.00	176.67	-	-	-	-	-	-
109.00	176.97	-	-	-	-	-	-
111.00	177.30	-	-	-	-	-	-
112.00	177.56	-	-	-	-	-	-
116.00	178.19	-	-	-	-	-	-
117.50	178.47	-	-	-	-	-	-
121.00	178.90	-	-	-	-	-	-
122.50	179.08	-	-	-	-	-	-
124.59	179.29	-	-	-	-	-	-

ASSENZA DI FALDA

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

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

LEGENDA: fi`_____ Angolo di attrito interno efficace(in gradi)
C` _____ Coesione efficace (in Kpa)
Cu _____ Resistenza al taglio Non drenata (in Kpa)
Gamm _____ Peso di volume terreno fuori falda (in KN/m^3)
Gamm_sat __ Peso di volume terreno immerso (in KN/m^3)
STR_IDX ___ Indice di resistenza (usato in solo in 'SNIFF SEARCH) (adimensionale)

---- SOLO Per AMMASSI ROCCIOSI FRATTURATI - Parametri Criterio di Rottura di Hoek (2002)-
sigci _____ Resistenza Compressione Uniassiale Roccia Intatta (in MPa)
GSI _____ Geological Strenght Index ammasso(adimensionale)
mi _____ Indice litologico ammasso(adimensionale)
D _____ Fattore di disturbo ammasso(adimensionale)
Fattore di riduzione NTC2018: gammaPHI=1.25 e gammaC=1.25 - DISATTIVATO (solo per ROCCE)
Uso CRITERIO DI ROTTURA Hoek et al.(2002,2006) - non-lineare - Generalizzato, secondo Lei et al.(2016)

---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
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): 5.0 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 2.49 114.62
LIVELLO MINIMO CONSIDERATO (Ymin): 134.28
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 14.95 122.10

*** 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 : 0.0250
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0125
COEFFICIENTE c=Kv/Kh UTILIZZATO : 0.5000
FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00

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

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

Fattore di sicurezza (FS) 2.6813 - Min. - X Y Lambda= 0.2044
31.15 159.80
38.22 155.76
41.39 154.06
43.39 153.15
44.94 152.63
46.59 152.32
47.94 152.22
49.50 152.28
51.24 152.52
53.51 152.96
55.60 153.36
57.55 153.74
59.44 154.11
61.26 154.46
63.10 154.82
64.95 155.18
66.81 155.54
68.69 155.91
70.50 156.28
72.28 156.68
74.05 157.09
75.86 157.54
77.63 158.00
79.44 158.50
81.28 159.04
83.21 159.62
85.06 160.20
86.87 160.79
88.65 161.40
90.46 162.04
92.26 162.70
94.10 163.40
96.00 164.15
98.05 164.98
99.86 165.78
101.60 166.63

103.27	167.52
105.04	168.56
106.91	169.78
109.09	171.30
112.27	173.66
114.26	175.19
114.26	177.92

Fattore di sicurezza (FS) 2.6867 - N.2 -- X Y Lambda= 0.2117

30.35	159.70
36.14	156.09
38.80	154.52
40.54	153.62
41.93	153.03
43.36	152.60
44.59	152.35
45.97	152.19
47.49	152.13
49.42	152.16
51.11	152.22
52.68	152.31
54.17	152.43
55.67	152.58
57.13	152.77
58.63	153.00
60.19	153.27
61.87	153.60
63.44	153.93
64.97	154.28
66.45	154.64
67.97	155.04
69.44	155.45
70.94	155.90
72.47	156.38
74.06	156.91
75.64	157.43
77.19	157.95
78.73	158.47
80.26	158.99
81.80	159.51
83.35	160.03
84.91	160.57
86.48	161.11
88.01	161.65
89.52	162.21
91.03	162.77
92.55	163.37
94.07	163.98
95.62	164.62
97.23	165.30
98.94	166.05
100.46	166.77
101.92	167.54
103.32	168.34
104.81	169.27
106.39	170.36
108.22	171.72
110.90	173.83
112.65	175.25
112.65	177.66

Fattore di sicurezza (FS) 2.6892 - N.3 -- X Y Lambda= 0.2149

30.83	159.76
37.83	155.52
41.04	153.68
43.12	152.64
44.78	151.97
46.48	151.49
47.96	151.22
49.62	151.08
51.47	151.07
53.87	151.18
55.90	151.33

57.76 151.51
59.50 151.75
61.30 152.06
63.00 152.41
64.77 152.84
66.60 153.34
68.61 153.94
70.54 154.52
72.42 155.10
74.27 155.69
76.11 156.28
77.95 156.88
79.80 157.49
81.69 158.13
83.63 158.79
85.47 159.45
87.28 160.14
89.06 160.84
90.89 161.59
92.68 162.37
94.52 163.19
96.41 164.08
98.43 165.05
100.29 166.00
102.10 166.97
103.85 167.97
105.67 169.06
107.63 170.32
109.88 171.83
113.10 174.09
115.12 175.54
115.12 178.05

Fattore di sicurezza (FS) 2.7114 - N.4 -- X Y Lambda= 0.2092
27.78 159.35
36.51 154.55
40.48 152.50
43.04 151.36
45.06 150.68
47.16 150.23
48.95 150.02
50.99 150.00
53.25 150.15
56.19 150.51
58.73 150.87
61.07 151.26
63.30 151.68
65.54 152.16
67.71 152.68
69.94 153.27
72.23 153.93
74.70 154.70
77.06 155.45
79.35 156.21
81.61 156.98
83.87 157.78
86.14 158.60
88.46 159.47
90.87 160.40
93.43 161.42
95.70 162.41
97.87 163.46
99.95 164.57
102.16 165.87
104.50 167.40
107.23 169.34
111.22 172.35
115.46 175.65
115.46 178.11

Fattore di sicurezza (FS) 2.7123 - N.5 -- X Y Lambda= 0.2039
25.34 159.01
32.57 155.36

35.92 153.76
38.13 152.85
39.93 152.26
41.74 151.84
43.34 151.60
45.10 151.48
47.02 151.47
49.40 151.58
51.51 151.72
53.48 151.88
55.37 152.08
57.27 152.32
59.11 152.59
61.01 152.91
62.95 153.29
65.04 153.72
67.02 154.16
68.95 154.61
70.85 155.07
72.76 155.57
74.66 156.08
76.59 156.64
78.57 157.23
80.66 157.87
82.60 158.51
84.49 159.18
86.34 159.88
88.24 160.64
90.10 161.42
92.01 162.28
93.98 163.21
96.11 164.26
98.08 165.27
99.98 166.30
101.83 167.36
103.73 168.50
105.80 169.82
108.15 171.40
111.53 173.76
113.40 175.10
113.40 177.78

Fattore di sicurezza (FS) 2.7243 - N.6 -- X Y Lambda= 0.2102
27.38 159.30
32.66 156.47
35.12 155.22
36.74 154.50
38.06 154.02
39.39 153.67
40.56 153.45
41.85 153.31
43.26 153.26
45.00 153.28
46.54 153.32
47.98 153.39
49.35 153.48
50.75 153.61
52.10 153.76
53.49 153.94
54.92 154.16
56.46 154.42
57.91 154.69
59.31 154.97
60.69 155.26
62.08 155.59
63.45 155.93
64.84 156.30
66.25 156.69
67.73 157.13
69.18 157.56
70.60 157.99
72.02 158.43
73.42 158.87
74.83 159.31

76.24 159.77
77.65 160.23
79.08 160.70
80.50 161.17
81.92 161.64
83.35 162.12
84.76 162.58
86.18 163.06
87.60 163.53
89.03 164.00
90.44 164.47
91.86 164.94
93.27 165.41
94.68 165.89
96.10 166.37
97.53 166.87
98.98 167.37
100.48 167.89
102.05 168.44
103.43 168.99
104.77 169.57
106.04 170.20
107.40 170.95
108.84 171.84
110.52 172.97
112.99 174.75
113.67 175.27
113.67 177.82

Fattore di sicurezza (FS) 2.7262 - N.7 -- X Y Lambda= 0.2024
31.05 159.79
37.81 156.48
40.91 155.05
42.92 154.26
44.54 153.78
46.19 153.47
47.62 153.33
49.21 153.32
50.93 153.43
53.08 153.69
55.07 153.93
56.95 154.16
58.78 154.40
60.56 154.63
62.34 154.87
64.14 155.13
65.96 155.39
67.81 155.66
69.59 155.94
71.35 156.25
73.09 156.57
74.86 156.92
76.61 157.28
78.40 157.69
80.24 158.12
82.20 158.61
83.99 159.10
85.73 159.62
87.40 160.17
89.15 160.81
90.84 161.47
92.60 162.22
94.44 163.06
96.48 164.03
98.30 164.96
100.04 165.92
101.71 166.91
103.45 168.02
105.32 169.32
107.47 170.90
110.58 173.33
112.65 174.98
112.65 177.66

Fattore di sicurezza (FS) 2.7338 - N.8 -- X Y Lambda= 0.2025

X	Y
30.12	159.67
36.94	155.94
40.04	154.35
42.04	153.48
43.61	152.96
45.25	152.62
46.63	152.47
48.20	152.46
49.92	152.60
52.12	152.89
54.13	153.17
56.01	153.43
57.83	153.70
59.61	153.98
61.38	154.26
63.16	154.55
64.95	154.86
66.77	155.18
68.57	155.50
70.35	155.82
72.13	156.16
73.91	156.49
75.71	156.84
77.54	157.21
79.43	157.59
81.40	157.99
83.16	158.41
84.84	158.89
86.46	159.41
88.18	160.06
89.81	160.74
91.53	161.54
93.34	162.46
95.40	163.57
97.26	164.63
99.03	165.69
100.74	166.77
102.50	167.93
104.40	169.27
106.57	170.88
109.69	173.28
111.65	174.82
111.65	177.47

Fattore di sicurezza (FS) 2.7341 - N.9 -- X Y Lambda= 0.2112

X	Y
26.42	159.17
35.04	153.99
38.94	151.78
41.43	150.57
43.37	149.84
45.41	149.36
47.12	149.15
49.09	149.13
51.30	149.29
54.22	149.68
56.73	150.05
59.04	150.45
61.23	150.88
63.42	151.38
65.55	151.90
67.74	152.50
69.99	153.17
72.42	153.94
74.73	154.69
76.97	155.46
79.17	156.24
81.39	157.05
83.60	157.89
85.87	158.79
88.22	159.74
90.74	160.80
92.96	161.82

95.10 162.90
97.14 164.03
99.32 165.35
101.62 166.90
104.29 168.85
108.20 171.87
112.00 174.89
112.00 177.56

Fattore di sicurezza (FS) 2.7385 - N.10 -- X Y Lambda= 0.2108
31.35 159.83
39.77 154.57
43.57 152.32
46.00 151.09
47.89 150.35
49.87 149.85
51.53 149.62
53.45 149.57
55.59 149.71
58.42 150.05
60.88 150.39
63.15 150.74
65.30 151.13
67.45 151.56
69.56 152.02
71.73 152.54
73.98 153.12
76.41 153.79
78.62 154.46
80.76 155.16
82.82 155.91
84.96 156.74
87.04 157.61
89.19 158.57
91.44 159.65
93.92 160.89
96.14 162.08
98.28 163.30
100.34 164.55
102.48 165.94
104.77 167.55
107.41 169.52
111.23 172.49
114.66 175.24
114.66 177.98

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

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	2.681	9550.0	3561.7	5632.1	Surplus
2	2.687	9575.4	3564.0	5655.0	Surplus
3	2.689	10538.3	3918.7	6227.7	Surplus
4	2.711	11637.8	4292.2	6916.5	Surplus
5	2.712	10536.8	3884.8	6263.5	Surplus
6	2.724	8665.4	3180.7	5166.6	Surplus
7	2.726	9327.2	3421.3	5563.7	Surplus
8	2.734	9629.6	3522.4	5755.0	Surplus
9	2.734	11637.4	4256.3	6955.4	Surplus
10	2.739	11888.3	4341.1	7113.1	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 5166.6

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)
31.153	0.666	-29.76	3.16	0.00	0.00	26.00	19.50
31.818	0.666	-29.76	9.48	0.00	0.00	26.00	19.50
32.484	0.666	-29.76	15.80	0.00	0.00	26.00	19.50
33.150	0.666	-29.76	22.12	0.00	0.00	26.00	19.50
33.815	0.185	-29.76	7.26	0.00	0.00	26.00	19.50
34.000	0.666	-29.76	30.55	0.00	0.00	26.00	19.50
34.666	0.666	-29.76	37.59	0.00	0.00	26.00	19.50
35.331	0.666	-29.76	44.63	0.00	0.00	26.00	19.50
35.997	0.666	-29.76	51.67	0.00	0.00	26.00	19.50
36.663	0.666	-29.76	58.71	0.00	0.00	26.00	19.50
37.328	0.666	-29.76	65.75	0.00	0.00	26.00	19.50
37.994	0.230	-29.76	24.32	0.00	0.00	26.00	19.50
38.224	0.666	-28.27	75.06	0.00	0.00	26.00	19.50
38.889	0.666	-28.27	81.79	0.00	0.00	26.00	19.50
39.555	0.666	-28.27	88.53	0.00	0.00	26.00	19.50
40.221	0.666	-28.27	95.26	0.00	0.00	26.00	19.50
40.886	0.503	-28.27	76.48	0.00	0.00	26.00	19.50
41.390	0.666	-24.40	106.70	0.00	0.00	26.00	19.50
42.055	0.666	-24.40	112.68	0.00	0.00	26.00	19.50
42.721	0.666	-24.40	118.66	0.00	0.00	26.00	19.50
43.387	0.007	-24.40	1.34	0.00	0.00	26.00	19.50
43.394	0.666	-18.57	124.17	0.00	0.00	26.00	19.50
44.060	0.666	-18.57	129.10	0.00	0.00	26.00	19.50
44.725	0.217	-18.57	43.13	0.00	0.00	26.00	19.50
44.942	0.666	-10.70	134.96	0.00	0.00	26.00	19.50
45.608	0.666	-10.70	138.57	0.00	0.00	26.00	19.50
46.274	0.312	-10.70	66.14	0.00	0.00	26.00	19.50
46.585	0.666	-4.26	143.34	0.00	0.00	26.00	19.50
47.251	0.249	-4.26	54.27	0.00	0.00	26.00	19.50
47.500	0.443	-4.26	97.39	0.00	0.00	26.00	19.50
47.943	0.666	2.52	148.08	0.00	0.00	26.00	19.50
48.608	0.666	2.52	149.60	0.00	0.00	26.00	19.50
49.274	0.230	2.52	51.93	0.00	0.00	26.00	19.50
49.504	0.666	7.66	151.25	0.00	0.00	26.00	19.50
50.169	0.666	7.66	151.97	0.00	0.00	26.00	19.50
50.835	0.406	7.66	92.96	0.00	0.00	26.00	19.50
51.241	0.666	10.98	152.85	0.00	0.00	26.00	19.50
51.906	0.666	10.98	153.03	0.00	0.00	26.00	19.50
52.572	0.666	10.98	153.21	0.00	0.00	26.00	19.50
53.238	0.274	10.98	63.19	0.00	0.00	26.00	19.50
53.512	0.666	10.98	153.46	0.00	0.00	26.00	19.50
54.178	0.666	10.98	153.64	0.00	0.00	26.00	19.50
54.843	0.666	10.98	153.82	0.00	0.00	26.00	19.50
55.509	0.092	10.98	21.24	0.00	0.00	26.00	19.50
55.601	0.399	10.98	92.35	0.00	0.00	26.00	19.50
56.000	0.666	10.98	154.17	0.00	0.00	26.00	19.50
56.666	0.666	10.98	154.41	0.00	0.00	26.00	19.50
57.331	0.219	10.98	50.76	0.00	0.00	26.00	19.50
57.550	0.666	10.99	154.73	0.00	0.00	26.00	19.50
58.216	0.666	10.99	154.97	0.00	0.00	26.00	19.50
58.881	0.563	10.99	131.15	0.00	0.00	26.00	19.50
59.444	0.666	10.99	155.42	0.00	0.00	26.00	19.50
60.110	0.666	10.99	155.66	0.00	0.00	26.00	19.50
60.775	0.489	10.99	114.58	0.00	0.00	26.00	19.50
61.265	0.666	10.99	156.08	0.00	0.00	26.00	19.50
61.930	0.666	10.99	156.32	0.00	0.00	26.00	19.50
62.596	0.509	10.99	119.71	0.00	0.00	26.00	19.50
63.105	0.666	10.99	156.75	0.00	0.00	26.00	19.50
63.771	0.666	10.99	156.99	0.00	0.00	26.00	19.50
64.436	0.511	10.99	120.77	0.00	0.00	26.00	19.50
64.948	0.052	10.99	12.35	0.00	0.00	26.00	19.50
65.000	0.666	10.99	157.46	0.00	0.00	26.00	19.50
65.666	0.666	10.99	157.75	0.00	0.00	26.00	19.50
66.331	0.479	10.99	113.79	0.00	0.00	26.00	19.50
66.811	0.666	11.00	158.24	0.00	0.00	26.00	19.50
67.476	0.666	11.00	158.53	0.00	0.00	26.00	19.50
68.142	0.543	11.00	129.62	0.00	0.00	26.00	19.50
68.686	0.666	11.70	158.99	0.00	0.00	26.00	19.50

69.351	0.666	11.70	159.16	0.00	0.00	26.00	19.50
70.017	0.479	11.70	114.54	0.00	0.00	26.00	19.50
70.496	0.666	12.44	159.40	0.00	0.00	26.00	19.50
71.161	0.666	12.44	159.45	0.00	0.00	26.00	19.50
71.827	0.458	12.44	109.74	0.00	0.00	26.00	19.50
72.285	0.666	13.20	159.47	0.00	0.00	26.00	19.50
72.951	0.666	13.20	159.40	0.00	0.00	26.00	19.50
73.616	0.437	13.20	104.67	0.00	0.00	26.00	19.50
74.054	0.666	13.94	159.22	0.00	0.00	26.00	19.50
74.719	0.666	13.94	159.02	0.00	0.00	26.00	19.50
75.385	0.471	13.94	112.34	0.00	0.00	26.00	19.50
75.856	0.666	14.70	158.62	0.00	0.00	26.00	19.50
76.521	0.666	14.70	158.29	0.00	0.00	26.00	19.50
77.187	0.446	14.70	105.78	0.00	0.00	26.00	19.50
77.633	0.666	15.44	157.69	0.00	0.00	26.00	19.50
78.298	0.666	15.44	157.24	0.00	0.00	26.00	19.50
78.964	0.474	15.44	111.75	0.00	0.00	26.00	19.50
79.438	0.666	16.16	156.42	0.00	0.00	26.00	19.50
80.104	0.666	16.16	155.85	0.00	0.00	26.00	19.50
80.770	0.512	16.16	119.40	0.00	0.00	26.00	19.50
81.281	0.666	16.82	154.78	0.00	0.00	26.00	19.50
81.947	0.553	16.82	128.10	0.00	0.00	26.00	19.50
82.500	0.666	16.82	153.56	0.00	0.00	26.00	19.50
83.166	0.047	16.82	10.73	0.00	0.00	26.00	19.50
83.212	0.666	17.45	152.83	0.00	0.00	26.00	19.50
83.878	0.666	17.45	152.09	0.00	0.00	26.00	19.50
84.544	0.516	17.45	117.31	0.00	0.00	26.00	19.50
85.059	0.666	18.12	150.72	0.00	0.00	26.00	19.50
85.725	0.666	18.12	149.87	0.00	0.00	26.00	19.50
86.391	0.479	18.12	107.33	0.00	0.00	26.00	19.50
86.870	0.630	18.80	140.47	0.00	0.00	26.00	19.50
87.500	0.666	18.80	147.63	0.00	0.00	26.00	19.50
88.166	0.488	18.80	107.78	0.00	0.00	26.00	19.50
88.653	0.666	19.48	146.63	0.00	0.00	26.00	19.50
89.319	0.666	19.48	145.97	0.00	0.00	26.00	19.50
89.985	0.015	19.48	3.38	0.00	0.00	26.00	19.50
90.000	0.457	19.48	99.72	0.00	0.00	26.00	19.50
90.457	0.666	20.17	143.77	0.00	0.00	26.00	19.50
91.123	0.666	20.17	142.13	0.00	0.00	26.00	19.50
91.789	0.211	20.17	44.75	0.00	0.00	26.00	19.50
92.000	0.256	20.17	53.99	0.00	0.00	26.00	19.50
92.256	0.666	20.85	139.69	0.00	0.00	26.00	19.50
92.921	0.666	20.85	138.39	0.00	0.00	26.00	19.50
93.587	0.508	20.85	104.82	0.00	0.00	26.00	19.50
94.095	0.666	21.49	136.04	0.00	0.00	26.00	19.50
94.761	0.666	21.49	134.63	0.00	0.00	26.00	19.50
95.427	0.578	21.49	115.73	0.00	0.00	26.00	19.50
96.005	0.666	22.06	131.93	0.00	0.00	26.00	19.50
96.670	0.330	22.06	64.76	0.00	0.00	26.00	19.50
97.000	0.666	22.06	129.68	0.00	0.00	26.00	19.50
97.666	0.381	22.06	73.54	0.00	0.00	26.00	19.50
98.047	0.666	23.89	127.18	0.00	0.00	26.00	19.50
98.712	0.666	23.89	125.36	0.00	0.00	26.00	19.50
99.378	0.480	23.89	89.29	0.00	0.00	26.00	19.50
99.858	0.666	25.99	122.02	0.00	0.00	26.00	19.50
100.524	0.666	25.99	119.80	0.00	0.00	26.00	19.50
101.189	0.311	25.99	55.13	0.00	0.00	26.00	19.50
101.500	0.100	25.99	17.72	0.00	0.00	26.00	19.50
101.600	0.666	28.22	115.85	0.00	0.00	26.00	19.50
102.266	0.666	28.22	112.98	0.00	0.00	26.00	19.50
102.932	0.334	28.22	55.64	0.00	0.00	26.00	19.50
103.266	0.666	30.33	108.46	0.00	0.00	26.00	19.50
103.932	0.666	30.33	105.16	0.00	0.00	26.00	19.50
104.597	0.403	30.33	62.01	0.00	0.00	26.00	19.50
105.000	0.036	30.33	5.47	0.00	0.00	26.00	19.50
105.036	0.666	32.95	99.37	0.00	0.00	26.00	19.50
105.702	0.666	32.95	95.46	0.00	0.00	26.00	19.50
106.367	0.543	32.95	74.93	0.00	0.00	26.00	19.50
106.910	0.590	34.95	78.33	0.00	0.00	26.00	19.50
107.500	0.500	34.95	63.51	0.00	0.00	26.00	19.50
108.000	0.666	34.95	80.88	0.00	0.00	26.00	19.50
108.666	0.334	34.95	39.27	0.00	0.00	26.00	19.50
109.000	0.091	34.95	10.48	0.00	0.00	26.00	19.50
109.091	0.666	36.62	74.05	0.00	0.00	26.00	19.50
109.756	0.666	36.62	68.86	0.00	0.00	26.00	19.50

110.422	0.578	36.62	55.59	0.00	0.00	26.00	19.50
111.000	0.666	36.62	59.60	0.00	0.00	26.00	19.50
111.666	0.334	36.62	28.30	0.00	0.00	26.00	19.50
112.000	0.267	36.62	21.70	0.00	0.00	26.00	19.50
112.267	0.666	37.41	50.42	0.00	0.00	26.00	19.50
112.932	0.666	37.41	44.97	0.00	0.00	26.00	19.50
113.598	0.666	37.41	39.52	0.00	0.00	26.00	19.50

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

X (m)	ht (m)	yt (m)	yt' (--)	E(x) (kN/m)	T(x) (kN/m)	E' (kN)	rho(x) (--)	FS_qFEM (--)	FS_srmFEM (--)		
31.153	0.000	159.803	-0.393	0.0000000000E+000	0.0000000000E+000	5.2713692044E-001	0.089	23.161	22.225		
31.818	0.118	159.540	-0.393	1.7376149593E+000	2.3753184276E-003	4.6934733927E+000	0.089	23.161	22.225		
32.484	0.239	159.280	-0.417	6.2486560681E+000	5.6101875438E-002	1.1288418634E+001	0.089	13.992	13.564		
33.150	0.324	158.985	-0.375	1.6766451749E+001	3.5247066542E-001	1.5571131413E+001	0.089	9.527	9.284		
33.815	0.501	158.781	-0.302	2.6979282760E+001	9.4001446001E-001	1.6275911129E+001	0.089	8.018	7.838		
34.000	0.554	158.728	-0.293	3.0033922681E+001	1.2143583210E+000	1.7064806559E+001	0.089	7.758	7.587		
34.666	0.738	158.532	-0.315	4.2664201661E+001	2.7565672636E+000	2.6778150704E+001	0.105	7.094	6.911		
35.331	0.895	158.308	-0.315	6.5685015142E+001	5.8189469362E+000	4.0602920358E+001	0.171	6.702	6.432		
35.997	1.080	158.112	-0.292	9.6720901986E+001	9.9786483856E+000	5.0297475888E+001	0.229	6.506	6.100		
36.663	1.268	157.920	-0.285	1.3264856252E+002	1.4971208128E+001	5.7281040807E+001	0.278	6.343	5.814		
37.328	1.462	157.733	-0.274	1.7298201892E+002	2.0722620831E+001	6.6758869655E+001	0.319	6.204	5.574		
37.994	1.665	157.555	-0.265	2.2152798743E+002	2.7829771679E+001	7.8552812923E+001	0.358	6.086	5.360		
38.224	1.736	157.496	-0.266	2.4001453523E+002	3.0594747772E+001	8.6401964408E+001	0.372	6.047	5.290		
38.889	1.915	157.317	-0.251	3.0892991771E+002	4.1557928535E+001	1.0735339221E+002	0.422	5.891	5.058		
39.555	2.118	157.161	-0.228	3.8293948005E+002	5.3923836807E+001	1.1804928075E+002	0.466	5.719	4.845		
40.221	2.327	157.013	-0.213	4.6609483434E+002	6.8597556119E+001	1.2734329962E+002	0.511	5.502	4.632		
40.886	2.550	156.878	-0.193	5.5247798923E+002	8.4557060546E+001	1.2902052094E+002	0.550	5.259	4.434		
41.390	2.731	156.788	-0.171	6.1711639214E+002	9.6976804428E+001	1.3109510105E+002	0.577	5.071	4.298		
42.055	2.923	156.678	-0.153	7.0670745427E+002	1.1512761784E+002	1.3389236969E+002	0.613	4.808	4.121		
42.721	3.131	156.584	-0.127	7.9537400613E+002	1.3411193737E+002	1.2976471853E+002	0.648	4.556	3.958		
43.387	3.359	156.510	-0.112	8.7946971965E+002	1.5318252875E+002	1.0584465215E+002	0.679	4.319	3.811		
43.394	3.361	156.509	-0.073	8.8024166365E+002	1.5336514865E+002	1.0565313241E+002	0.679	4.317	3.810		
44.060	3.536	156.461	-0.060	9.5259814773E+002	1.7094633785E+002	1.0573392222E+002	0.708	4.109	3.685		
44.725	3.729	156.429	-0.042	1.0210105270E+003	1.8856516966E+002	9.6432311696E+001	0.735	3.919	3.570		
44.942	3.795	156.423	-0.016	1.0414805159E+003	1.9407618943E+002	9.3515632542E+001	0.743	3.862	3.535		
45.608	3.913	156.415	-0.000	1.1019931499E+003	2.1099742827E+002	8.6811401534E+001	0.769	3.699	3.432		
46.274	4.046	156.423	0.018	1.1570568802E+003	2.2729465237E+002	7.7036663401E+001	0.794	3.556	3.339		
46.585	4.116	156.433	0.044	1.1802468059E+003	2.3457181210E+002	7.1971058555E+001	0.805	3.494	3.299		
47.251	4.198	156.466	0.052	1.2247392755E+003	2.4922542302E+002	6.0959641843E+001	0.829	3.372	3.219		
47.500	4.232	156.481	0.073	1.2393686624E+003	2.5427031471E+002	5.8221075504E+001	0.836	3.330	3.191		
47.943	4.300	156.516	0.093	1.2647160085E+003	2.6341911587E+002	5.4216535751E+001	0.851	3.254	3.143		
48.608	4.338	156.584	0.114	1.2977590389E+003	2.7629453117E+002	4.3580283386E+001	0.873	3.148	3.075		
49.274	4.393	156.668	0.130	1.3227366212E+003	2.8729548317E+002	3.3379461153E+001	0.893	3.051	3.015		
49.504	4.415	156.700	0.148	1.3300696249E+003	2.9077567216E+002	3.0634572403E+001	0.899	3.018	2.996		
50.169	4.426	156.801	0.163	1.3479202698E+003	2.9992837169E+002	2.3149278272E+001	0.917	2.933	2.945		
50.835	4.453	156.917	0.186	1.3608894179E+003	3.0767913755E+002	1.7343863906E+001	0.933	2.855	2.898		
51.241	4.481	157.000	0.205	1.3673966390E+003	3.1208038600E+002	1.4095037061E+001	0.942	2.808	2.870		
51.906	4.489	157.136	0.209	1.3746544102E+003	3.1789051575E+002	9.0251247795E+000	0.956	2.744	2.830		
52.572	4.501	157.277	0.209	1.3794122394E+003	3.2258176807E+002	4.9750101132E+000	0.967	2.690	2.796		
53.238	4.509	157.415	0.207	1.3812778902E+003	3.2565724618E+002	1.9581732836E+000	0.975	2.652	2.769		
53.512	4.513	157.472	0.205	1.3817195965E+003	3.2670173983E+002	1.3318861263E+000	0.978	2.638	2.759		
54.178	4.519	157.607	0.200	1.3821566809E+003	3.2873872125E+002	1.7238253938E-001	0.983	2.611	2.738		
54.843	4.520	157.738	0.191	1.3819490980E+003	3.3015766382E+002	-5.6885527557E-001	0.988	2.592	2.721		
55.509	4.515	157.862	0.185	1.3813993354E+003	3.3114936074E+002	-9.3490527172E-001	0.991	2.579	2.708		
55.601	4.514	157.878	0.186	1.3813120606E+003	3.3126349556E+002	-9.6873298813E-001	0.991	2.577	2.706		
56.000	4.511	157.953	0.187	1.3808927599E+003	3.3175074425E+002	-1.0791570164E+000	0.992	2.571	2.698		
56.666	4.506	158.078	0.189	1.3801423988E+003	3.3240145618E+002	-1.1434629418E+000	0.994	2.562	2.687		
57.331	4.504	158.205	0.191	1.3793704105E+003	3.3298700532E+002	-1.1606798731E+000	0.996	2.555	2.677		
57.550	4.503	158.246	0.202	1.3791165917E+003	3.3317172270E+002	-1.1872911477E+000	0.997	2.553	2.674		
58.216	4.512	158.384	0.206	1.3782729504E+003	3.3373704981E+002	-1.2731585079E+000	0.998	2.547	2.663		

58.881	4.520	158.521	0.208	1.3774215720E+003	3.3426211468E+002	-1.2984547913E+000	1.000	2.542	2.652
59.444	4.529	158.639	0.222	1.3766818695E+003	3.3467868501E+002	-1.3844071272E+000	1.001	2.538	2.642
60.110	4.554	158.794	0.241	1.3757055691E+003	3.3514727189E+002	-1.5302506284E+000	1.003	2.533	2.630
60.775	4.591	158.960	0.237	1.3746445703E+003	3.3555971038E+002	-1.4938781926E+000	1.004	2.528	2.616
61.265	4.604	159.068	0.224	1.3739495527E+003	3.3576751433E+002	-1.4426873969E+000	1.005	2.525	2.608
61.930	4.625	159.219	0.223	1.3729689882E+003	3.3600230954E+002	-1.4695444704E+000	1.006	2.522	2.596
62.596	4.642	159.365	0.211	1.3719930746E+003	3.3619365361E+002	-1.3726223666E+000	1.007	2.519	2.584
63.105	4.645	159.467	0.201	1.3713306706E+003	3.3629193935E+002	-1.3235381482E+000	1.007	2.517	2.577
63.771	4.650	159.601	0.199	1.3704301557E+003	3.3643251687E+002	-1.3448881538E+000	1.008	2.514	2.567
64.436	4.651	159.731	0.191	1.3695401537E+003	3.3658413308E+002	-1.3138601706E+000	1.008	2.512	2.558
64.948	4.646	159.825	0.184	1.3688773279E+003	3.3670999219E+002	-1.3900529690E+000	1.009	2.510	2.551
65.000	4.646	159.835	0.196	1.3688041572E+003	3.3672471478E+002	-1.4084682338E+000	1.009	2.509	2.551
65.666	4.647	159.966	0.199	1.3677918986E+003	3.3693921594E+002	-1.6179080653E+000	1.009	2.506	2.541
66.331	4.652	160.100	0.198	1.3666501552E+003	3.3717340582E+002	-1.7882542792E+000	1.010	2.502	2.532
66.811	4.651	160.193	0.206	1.3657675276E+003	3.3733946230E+002	-2.0782559385E+000	1.011	2.499	2.525
67.476	4.665	160.336	0.218	1.3641647114E+003	3.3753764152E+002	-2.6544563789E+000	1.012	2.494	2.515
68.142	4.682	160.483	0.219	1.3622335169E+003	3.3766763900E+002	-3.1592661140E+000	1.013	2.487	2.504
68.686	4.695	160.601	0.228	1.3604022848E+003	3.3768670457E+002	-3.8504935039E+000	1.013	2.481	2.495
69.351	4.715	160.758	0.230	1.3574472780E+003	3.3752932824E+002	-4.8652866784E+000	1.014	2.473	2.483
70.017	4.726	160.907	0.220	1.3539248851E+003	3.3717673169E+002	-5.4585879044E+000	1.015	2.464	2.471
70.496	4.729	161.010	0.219	1.3512548264E+003	3.3677531197E+002	-6.1025974365E+000	1.015	2.457	2.464
71.161	4.731	161.158	0.223	1.3467074761E+003	3.3594456862E+002	-7.2836169201E+000	1.015	2.448	2.454
71.827	4.732	161.306	0.223	1.3415577826E+003	3.3486760534E+002	-8.0113361024E+000	1.015	2.440	2.445
72.285	4.733	161.409	0.228	1.3378017678E+003	3.3399965101E+002	-8.8280245174E+000	1.014	2.434	2.439
72.951	4.731	161.562	0.231	1.3313182799E+003	3.3240147629E+002	-1.0205581094E+001	1.013	2.426	2.431
73.616	4.729	161.716	0.231	1.3242145668E+003	3.3055873018E+002	-1.0919983351E+001	1.011	2.418	2.424
74.054	4.727	161.817	0.236	1.3193679682E+003	3.2925199205E+002	-1.1726733634E+001	1.010	2.414	2.420
74.719	4.722	161.977	0.239	1.3109097102E+003	3.2690171548E+002	-1.3193509238E+001	1.008	2.407	2.414
75.385	4.716	162.136	0.237	1.3018027890E+003	3.2430537595E+002	-1.3828661492E+001	1.005	2.401	2.409
75.856	4.708	162.246	0.238	1.2952434574E+003	3.2239670426E+002	-1.4608167951E+001	1.004	2.396	2.406
76.521	4.695	162.407	0.243	1.2848839053E+003	3.1933727961E+002	-1.6048641870E+001	1.000	2.391	2.402
77.187	4.683	162.570	0.243	1.2738770971E+003	3.1604643538E+002	-1.6814178084E+001	0.997	2.387	2.398
77.633	4.673	162.677	0.247	1.2663015909E+003	3.1375907907E+002	-1.7622431542E+001	0.994	2.384	2.396
78.298	4.657	162.844	0.262	1.2539529642E+003	3.1001436490E+002	-1.9777854920E+001	0.990	2.380	2.394
78.964	4.654	163.026	0.265	1.2399703427E+003	3.0576267808E+002	-2.0625003941E+001	0.985	2.378	2.392
79.438	4.644	163.147	0.259	1.2303175662E+003	3.0282785923E+002	-2.0814989851E+001	0.982	2.376	2.392
80.104	4.626	163.321	0.262	1.2160309559E+003	2.9850395555E+002	-2.1745979369E+001	0.977	2.375	2.391
80.770	4.607	163.495	0.256	1.2013660553E+003	2.9408549261E+002	-2.1666549126E+001	0.972	2.373	2.391
81.281	4.585	163.622	0.251	1.1904230627E+003	2.9080207509E+002	-2.1846972951E+001	0.969	2.373	2.392
81.947	4.553	163.791	0.254	1.1754818033E+003	2.8633118568E+002	-2.2651931441E+001	0.964	2.373	2.392
82.500	4.526	163.931	0.248	1.1628567405E+003	2.8255646923E+002	-2.2622872441E+001	0.959	2.373	2.393
83.166	4.487	164.093	0.245	1.1479581037E+003	2.7809451977E+002	-2.4133953373E+001	0.954	2.373	2.393
83.212	4.485	164.106	0.256	1.1468278271E+003	2.7775415664E+002	-2.4240102454E+001	0.954	2.373	2.393
83.878	4.446	164.275	0.258	1.1308490750E+003	2.7293543924E+002	-2.4462251223E+001	0.948	2.372	2.392
84.544	4.411	164.449	0.263	1.1142600075E+003	2.6790128380E+002	-2.5355488445E+001	0.942	2.372	2.391
85.059	4.386	164.586	0.290	1.1010109963E+003	2.6385823750E+002	-2.7657392248E+001	0.936	2.372	2.390
85.725	4.373	164.792	0.307	1.0809115842E+003	2.5772106314E+002	-3.0199186186E+001	0.928	2.372	2.388
86.391	4.358	164.995	0.301	1.0608053081E+003	2.5158873740E+002	-2.9854390969E+001	0.920	2.373	2.386
86.870	4.343	165.136	0.317	1.0466227548E+003	2.4727951851E+002	-3.1487117057E+001	0.914	2.373	2.386
87.500	4.339	165.347	0.328	1.0252155375E+003	2.4088007297E+002	-3.3634298798E+001	0.905	2.374	2.386
88.166	4.327	165.562	0.306	1.0030594342E+003	2.3434086611E+002	-3.1050262081E+001	0.895	2.377	2.388
88.653	4.299	165.699	0.281	9.8871946039E+002	2.3018460580E+002	-2.9503698122E+001	0.888	2.378	2.390
89.319	4.250	165.885	0.273	9.6899861327E+002	2.2456593967E+002	-2.9088080599E+001	0.880	2.382	2.394
89.985	4.191	166.063	0.266	9.4999304263E+002	2.1922804492E+002	-2.8547547197E+001	0.872	2.386	2.400
90.000	4.190	166.067	0.247	9.4955161170E+002	2.1910487745E+002	-2.8498045689E+001	0.872	2.386	2.400
90.457	4.141	166.180	0.254	9.3718341710E+002	2.1568654327E+002	-2.7700959096E+001	0.868	2.389	2.404
91.123	4.069	166.352	0.260	9.1809928227E+002	2.1042820761E+002	-2.8940009340E+001	0.862	2.394	2.412
91.789	3.998	166.526	0.263	8.9865413403E+002	2.0506708241E+002	-2.9668130366E+001	0.855	2.400	2.419
92.000	3.977	166.582	0.270	8.9235835001E+002	2.0332106842E+002	-3.0259931024E+001	0.853	2.401	2.422
92.256	3.953	166.652	0.279	8.8448340882E+002	2.0112107097E+002	-3.1051988753E+001	0.850	2.403	2.424
92.921	3.887	166.839	0.296	8.6337773588E+002	1.9518363355E+002	-3.3409451811E+001	0.841	2.409	2.431
93.587	3.840	167.047	0.314	8.4000373326E+002	1.8850702983E+002	-3.5471676571E+001	0.830	2.415	2.435
94.095	3.808	167.208	0.325	8.2183004174E+002	1.8325180281E+002	-3.6509329578E+001	0.821	2.419	2.437
94.761	3.767	167.429	0.336	7.9686091263E+002	1.7598108332E+002	-3.7942546451E+001	0.807	2.423	2.438
95.427	3.731	167.655	0.333	7.7131523037E+002	1.6849007587E+002	-3.7382515572E+001	0.793	2.425	2.436
96.005	3.691	167.843	0.338	7.5020891565E+002	1.6228041967E+002	-3.7926482300E+001	0.780	2.424	2.432
96.670	3.655	168.076	0.362	7.2388404861E+002	1.5459200240E+002	-4.2358143467E+001	0.764	2.422	2.426
97.000	3.649	168.203	0.354	7.0946391857E+002	1.5042714293E+002	-4.2003051611E+001	0.754	2.420	2.422
97.666	3.604	168.428	0.337	6.8385282337E+002	1.4312814264E+002	-3.8344356926E+001	0.738	2.415	2.415
98.047	3.577	168.556	0.344	6.6927464703E+002	1.3903481011E+002	-3.9035589763E+001	0.729	2.410	2.411
98.712	3.515	168.789	0.344	6.4239932121E+002	1.3166415910E+002	-3.9856043739E+001	0.712	2.403	2.406
99.378	3.446	169.014	0.340	6.1621230093E+002	1.2465482711E+002	-3.9657595584E+001	0.696	2.395	2.402
99.858	3.397	169.178	0.364	5.9706032071E+002	1.1962828757E+002	-4.1869596826E+001	0.683	2.390	2.401
100.524	3.325	169.431	0.374	5.6735941019E+002	1.1205653588E+002	-4.4050144167E+001	0.665	2.384	2.402
101.189	3.246	169.676	0.366	5.3841415877E+002	1.0483967916E+002	-4.2837039683E+001	0.647	2.380	2.407

101.500	3.206	169.788	0.364	5.2520480047E+002	1.0160320485E+002	-4.3965354095E+001	0.639	2.378	2.410
101.600	3.195	169.826	0.367	5.2074312703E+002	1.0051765565E+002	-4.4274795048E+001	0.636	2.378	2.411
102.266	3.081	170.069	0.369	4.9194482264E+002	9.3638375843E+001	-4.3552138381E+001	0.619	2.377	2.420
102.932	2.971	170.317	0.374	4.6275998512E+002	8.6794770863E+001	-4.4169276154E+001	0.601	2.378	2.431
103.266	2.919	170.443	0.379	4.4794511085E+002	8.3376487933E+001	-4.4213798548E+001	0.592	2.379	2.438
103.932	2.781	170.695	0.410	4.1867159736E+002	7.6689372068E+001	-4.7059962607E+001	0.573	2.383	2.452
104.597	2.686	170.990	0.440	3.8529182696E+002	6.9185969326E+001	-4.9354513392E+001	0.549	2.389	2.467
105.000	2.627	171.166	0.436	3.6560895384E+002	6.4811436560E+001	-4.6438821979E+001	0.534	2.393	2.476
105.036	2.621	171.181	0.442	3.6394857689E+002	6.4445335826E+001	-4.6342026031E+001	0.533	2.393	2.476
105.702	2.484	171.476	0.458	3.3161125003E+002	5.7361165133E+001	-4.9550111133E+001	0.508	2.399	2.490
106.367	2.367	171.790	0.459	2.9798003362E+002	5.0088270789E+001	-4.8005846912E+001	0.479	2.406	2.501
106.910	2.256	172.031	0.465	2.7303986745E+002	4.4783485170E+001	-4.6829344496E+001	0.455	2.409	2.507
107.500	2.129	172.317	0.486	2.4484877485E+002	3.8934263217E+001	-4.7221192555E+001	0.427	2.409	2.504
108.000	2.024	172.561	0.475	2.2147514542E+002	3.4166965087E+001	-4.4975342359E+001	0.402	2.405	2.497
108.666	1.869	172.871	0.470	1.9310653790E+002	2.8553124145E+001	-4.2337241059E+001	0.367	2.396	2.481
109.000	1.795	173.031	0.470	1.7899899784E+002	2.5830981514E+001	-3.8607843970E+001	0.348	2.393	2.475
109.091	1.771	173.071	0.486	1.7558742675E+002	2.5184703100E+001	-3.8384696501E+001	0.344	2.392	2.473
109.756	1.605	173.399	0.478	1.4636922574E+002	1.9516642638E+001	-4.1238446177E+001	0.299	2.378	2.448
110.422	1.419	173.707	0.486	1.2068461909E+002	1.4767780419E+001	-3.9126788615E+001	0.256	2.352	2.404
111.000	1.285	174.003	0.557	9.7797068372E+001	1.0755741751E+001	-4.1112987823E+001	0.210	2.312	2.341
111.666	1.187	174.400	0.538	6.9267580980E+001	6.0484742771E+000	-3.2419776043E+001	0.139	2.243	2.236
112.000	1.080	174.541	0.410	6.0181514367E+001	4.7228133147E+000	-2.5022116152E+001	0.116	2.203	2.184
112.267	0.987	174.646	0.484	5.3970131878E+001	3.9308182073E+000	-2.4499608231E+001	0.102	2.168	2.141
112.932	0.824	174.992	0.618	3.5673425267E+001	2.2606657564E+000	-2.9932473377E+001	0.089	2.003	1.956
113.598	0.792	175.469	0.618	1.4119531747E+001	7.0449753242E-001	-2.6794925260E+001	0.089	1.905	1.843

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)
31.153	0.666	0.767	-29.761	-1.956	-1.500	21.275	16.314
31.818	0.666	0.767	-29.761	-5.868	-4.500	24.932	19.118
32.484	0.666	0.767	-29.761	-9.781	-7.500	29.027	22.258
33.150	0.666	0.767	-29.761	-13.693	-10.500	33.232	25.483
33.815	0.185	0.213	-29.761	-16.192	-3.446	36.411	7.748
34.000	0.666	0.767	-29.761	-18.913	-14.503	40.139	30.780
34.666	0.666	0.767	-29.761	-23.270	-17.844	47.559	36.469
35.331	0.666	0.767	-29.761	-27.628	-21.185	54.012	41.417
35.997	0.666	0.767	-29.761	-31.985	-24.527	59.859	45.901
36.663	0.666	0.767	-29.761	-36.342	-27.868	65.537	50.255
37.328	0.666	0.767	-29.761	-40.699	-31.209	72.581	55.656
37.994	0.230	0.265	-29.761	-43.629	-11.543	77.307	20.452
38.224	0.666	0.756	-28.268	-44.847	-33.896	87.384	66.046
38.889	0.666	0.756	-28.268	-48.869	-36.936	94.416	71.361
39.555	0.666	0.756	-28.268	-52.892	-39.976	103.483	78.214
40.221	0.666	0.756	-28.268	-56.915	-43.017	110.252	83.330
40.886	0.503	0.571	-28.268	-60.446	-34.535	114.715	65.540
41.390	0.666	0.731	-24.398	-56.977	-41.647	123.608	90.351
42.055	0.666	0.731	-24.398	-60.169	-43.980	129.051	94.330
42.721	0.666	0.731	-24.398	-63.360	-46.313	132.908	97.149
43.387	0.007	0.008	-24.398	-64.974	-0.521	129.590	1.040
43.394	0.666	0.702	-18.569	-52.120	-36.600	134.894	94.727
44.060	0.666	0.702	-18.569	-54.186	-38.051	138.232	97.071
44.725	0.217	0.229	-18.569	-55.555	-12.713	139.074	31.825
44.942	0.666	0.677	-10.696	-32.083	-21.734	139.831	94.728
45.608	0.666	0.677	-10.696	-32.939	-22.314	141.492	95.853
46.274	0.312	0.317	-10.696	-33.568	-10.651	142.275	45.145
46.585	0.666	0.668	-4.259	-10.596	-7.073	139.189	92.911
47.251	0.249	0.250	-4.259	-10.727	-2.678	139.285	34.773
47.500	0.443	0.444	-4.259	-10.826	-4.805	140.541	62.385

47.943	0.666	0.666	2.521	15.324	10.211	134.803	89.822
48.608	0.666	0.666	2.521	15.482	10.316	134.879	89.873
49.274	0.230	0.230	2.521	15.588	3.581	135.126	31.042
49.504	0.666	0.672	7.658	35.587	23.903	129.705	87.118
50.169	0.666	0.672	7.658	35.756	24.016	129.954	87.286
50.835	0.406	0.409	7.658	35.891	14.691	130.268	53.322
51.241	0.666	0.678	10.981	48.470	32.867	126.630	85.867
51.906	0.666	0.678	10.981	48.527	32.906	126.810	85.989
52.572	0.666	0.678	10.981	48.584	32.944	127.013	86.126
53.238	0.274	0.279	10.981	48.624	13.588	127.127	35.524
53.512	0.666	0.678	10.983	48.671	33.003	127.239	86.280
54.178	0.666	0.678	10.983	48.728	33.042	127.394	86.385
54.843	0.666	0.678	10.983	48.785	33.081	127.541	86.485
55.509	0.092	0.094	10.983	48.817	4.569	127.621	11.944
55.601	0.399	0.407	10.985	48.845	19.863	127.666	51.916
56.000	0.666	0.678	10.985	48.901	33.159	127.797	86.659
56.666	0.666	0.678	10.985	48.977	33.212	127.970	86.776
57.331	0.219	0.223	10.985	49.029	10.919	128.084	28.525
57.550	0.666	0.678	10.986	49.087	33.286	128.196	86.930
58.216	0.666	0.678	10.986	49.163	33.338	128.368	87.047
58.881	0.563	0.573	10.986	49.234	28.214	128.526	73.652
59.444	0.666	0.678	10.988	49.313	33.439	128.682	87.261
60.110	0.666	0.678	10.988	49.389	33.491	128.855	87.378
60.775	0.489	0.498	10.988	49.456	24.652	129.009	64.305
61.265	0.666	0.678	10.990	49.529	33.587	129.157	87.583
61.930	0.666	0.678	10.990	49.606	33.638	129.328	87.699
62.596	0.509	0.519	10.990	49.674	25.760	129.481	67.148
63.105	0.666	0.678	10.992	49.748	33.735	129.628	87.903
63.771	0.666	0.678	10.992	49.825	33.787	129.797	88.018
64.436	0.511	0.521	10.992	49.892	25.992	129.947	67.697
64.948	0.052	0.053	10.994	49.932	2.659	130.016	6.924
65.000	0.666	0.678	10.994	49.980	33.893	130.122	88.238
65.666	0.666	0.678	10.994	50.072	33.955	130.323	88.375
66.331	0.479	0.488	10.994	50.150	24.494	130.497	63.737
66.811	0.666	0.678	10.996	50.235	34.066	130.670	88.611
67.476	0.666	0.678	10.996	50.326	34.128	130.875	88.750
68.142	0.543	0.554	10.996	50.409	27.904	131.063	72.551
68.686	0.666	0.680	11.701	53.156	36.135	130.637	88.807
69.351	0.666	0.680	11.701	53.213	36.174	130.776	88.902
70.017	0.479	0.489	11.701	53.263	26.033	130.899	63.979
70.496	0.666	0.682	12.439	56.076	38.225	130.380	88.877
71.161	0.666	0.682	12.439	56.094	38.238	130.452	88.926
71.827	0.458	0.469	12.439	56.109	26.316	130.509	61.211
72.285	0.666	0.684	13.197	58.925	40.289	129.926	88.834
72.951	0.666	0.684	13.197	58.898	40.270	129.924	88.833
73.616	0.437	0.449	13.197	58.875	26.444	129.912	58.350
74.054	0.666	0.686	13.945	61.573	42.232	129.291	88.679
74.719	0.666	0.686	13.945	61.497	42.180	129.217	88.629
75.385	0.471	0.485	13.945	61.432	29.798	129.127	62.635
75.856	0.666	0.688	14.698	64.052	44.080	128.450	88.399
76.521	0.666	0.688	14.698	63.922	43.991	128.300	88.295
77.187	0.446	0.461	14.698	63.813	29.396	128.155	59.036
77.633	0.666	0.691	15.444	66.307	45.792	127.427	88.003
78.298	0.666	0.691	15.444	66.119	45.662	127.303	87.917
78.964	0.474	0.492	15.444	65.957	32.451	126.997	62.483
79.438	0.666	0.693	16.158	68.226	47.284	126.195	87.460
80.104	0.666	0.693	16.158	67.978	47.112	125.851	87.221
80.770	0.512	0.533	16.158	67.758	36.095	125.455	66.830
81.281	0.666	0.695	16.821	69.733	48.494	124.613	86.659
81.947	0.553	0.578	16.821	69.452	40.135	124.228	71.789
82.500	0.666	0.695	16.821	69.182	48.111	123.793	86.089
83.166	0.047	0.049	16.821	69.030	3.360	123.746	6.024
83.212	0.666	0.698	17.450	70.904	49.476	122.946	85.790
83.878	0.666	0.698	17.450	70.561	49.237	122.562	85.522
84.544	0.516	0.541	17.450	70.257	37.978	122.218	66.066
85.059	0.666	0.700	18.118	72.032	50.451	121.682	85.226
85.725	0.666	0.700	18.118	71.623	50.165	121.119	84.832
86.391	0.479	0.504	18.118	71.272	35.928	120.560	60.773
86.870	0.630	0.666	18.802	72.994	48.598	119.953	79.862
87.500	0.666	0.703	18.802	72.634	51.076	119.351	83.927
88.166	0.488	0.515	18.802	72.403	37.287	118.550	61.053
88.653	0.666	0.706	19.484	74.158	52.364	117.598	83.037
89.319	0.666	0.706	19.484	73.823	52.127	116.998	82.613
89.985	0.015	0.016	19.484	73.652	1.208	116.757	1.915
90.000	0.457	0.485	19.484	73.385	35.611	116.214	56.394

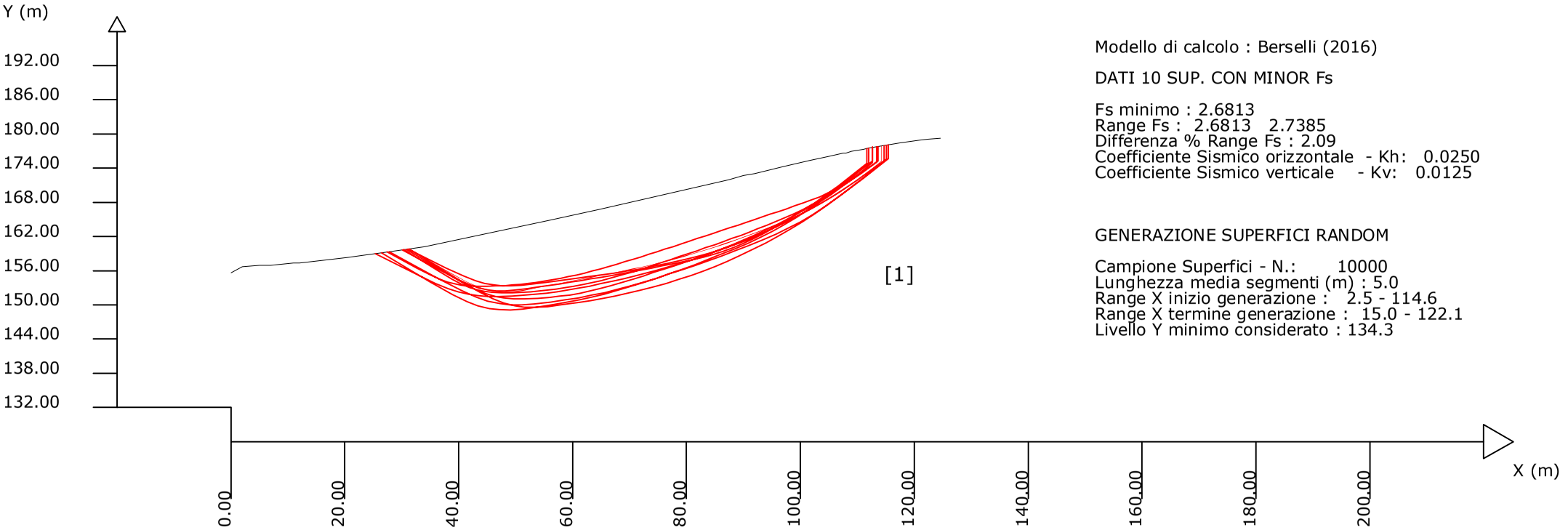
90.457	0.666	0.709	20.175	74.672	52.956	114.916	81.497
91.123	0.666	0.709	20.175	73.821	52.353	113.937	80.802
91.789	0.211	0.225	20.175	73.262	16.482	113.341	25.499
92.000	0.256	0.272	20.175	73.009	19.887	113.178	30.828
92.256	0.666	0.712	20.846	74.369	52.974	112.190	79.913
92.921	0.666	0.712	20.846	73.678	52.481	111.884	79.695
93.587	0.508	0.544	20.846	73.068	39.751	111.300	60.551
94.095	0.666	0.715	21.486	74.074	52.992	110.323	78.924
94.761	0.666	0.715	21.486	73.304	52.441	109.597	78.404
95.427	0.578	0.621	21.486	72.585	45.082	108.517	67.399
96.005	0.666	0.718	22.062	73.247	52.611	107.627	77.305
96.670	0.330	0.356	22.062	72.617	25.825	107.479	38.224
97.000	0.666	0.718	22.062	71.996	51.712	105.923	76.081
97.666	0.381	0.411	22.062	71.349	29.326	105.084	43.192
98.047	0.666	0.728	23.892	74.740	54.415	103.013	75.000
98.712	0.666	0.728	23.892	73.669	53.636	101.592	73.965
99.378	0.480	0.525	23.892	72.748	38.204	100.607	52.834
99.858	0.666	0.741	25.993	75.912	56.219	98.383	72.861
100.524	0.666	0.741	25.993	74.530	55.196	96.731	71.638
101.189	0.311	0.345	25.993	73.516	25.399	95.500	32.995
101.500	0.100	0.112	25.993	73.080	8.165	95.347	10.653
101.600	0.666	0.755	28.222	75.894	57.337	92.150	69.618
102.266	0.666	0.755	28.222	74.016	55.918	90.501	68.372
102.932	0.334	0.379	28.222	72.605	27.536	89.255	33.850
103.266	0.666	0.771	30.333	74.055	57.116	85.924	66.270
103.932	0.666	0.771	30.333	71.801	55.377	85.136	65.662
104.597	0.403	0.467	30.333	69.991	32.656	83.382	38.904
105.000	0.036	0.042	30.333	69.248	2.882	82.255	3.423
105.036	0.666	0.793	32.947	70.760	56.131	79.310	62.913
105.702	0.666	0.793	32.947	67.973	53.920	77.573	61.535
106.367	0.543	0.647	32.947	65.444	42.325	74.757	48.347
106.910	0.590	0.720	34.950	64.568	46.478	71.475	51.450
107.500	0.500	0.610	34.950	61.777	37.685	69.275	42.259
108.000	0.666	0.812	34.950	59.093	47.992	66.472	53.985
108.666	0.334	0.408	34.950	57.129	23.302	64.901	26.472
109.000	0.091	0.111	34.950	56.234	6.219	63.365	7.008
109.091	0.666	0.829	36.615	55.046	45.652	62.060	51.468
109.756	0.666	0.829	36.615	51.190	42.454	58.318	48.365
110.422	0.578	0.720	36.615	47.588	34.268	55.886	40.244
111.000	0.666	0.829	36.615	44.303	36.742	53.965	44.755
111.666	0.334	0.417	36.615	41.883	17.445	49.446	20.595
112.000	0.267	0.332	36.615	40.291	13.380	47.491	15.770
112.267	0.666	0.838	37.415	37.749	31.638	44.835	37.577
112.932	0.666	0.838	37.415	33.668	28.218	42.195	35.364
113.598	0.666	0.838	37.415	29.587	24.797	38.462	32.235

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 : 14/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Berselli (2016)

DATI 10 SUP. CON MINOR Fs

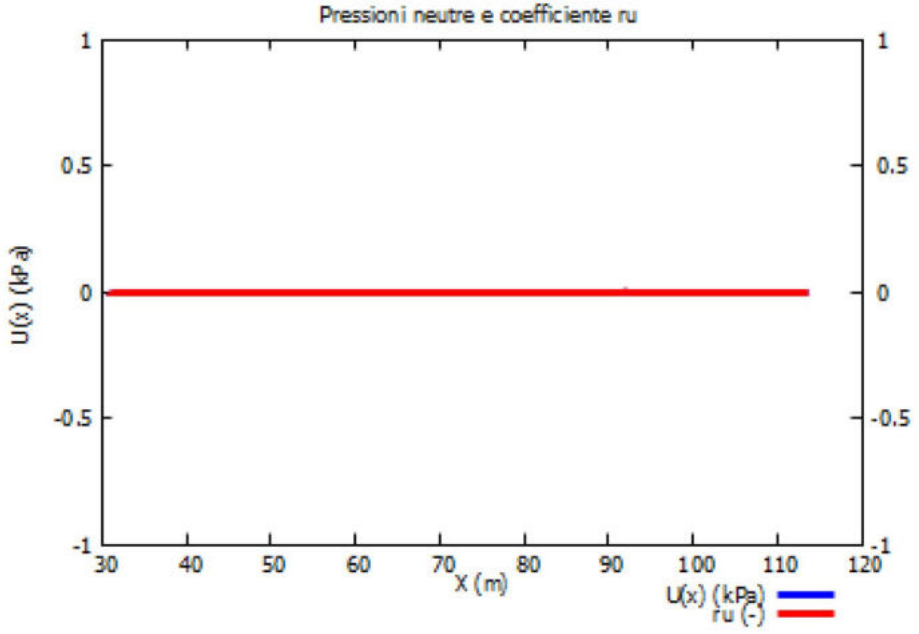
Fs minimo : 2.6813
Range Fs : 2.6813 2.7385
Differenza % Range Fs : 2.09
Coefficiente Sismico orizzontale - Kh: 0.0250
Coefficiente Sismico verticale - Kv: 0.0125

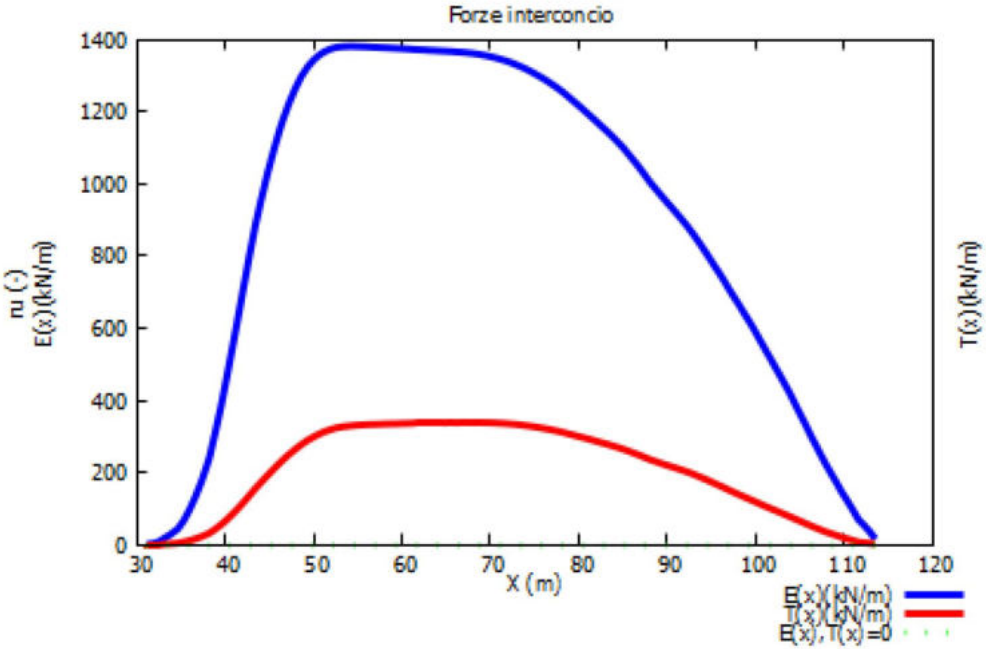
GENERAZIONE SUPERFICI RANDOM

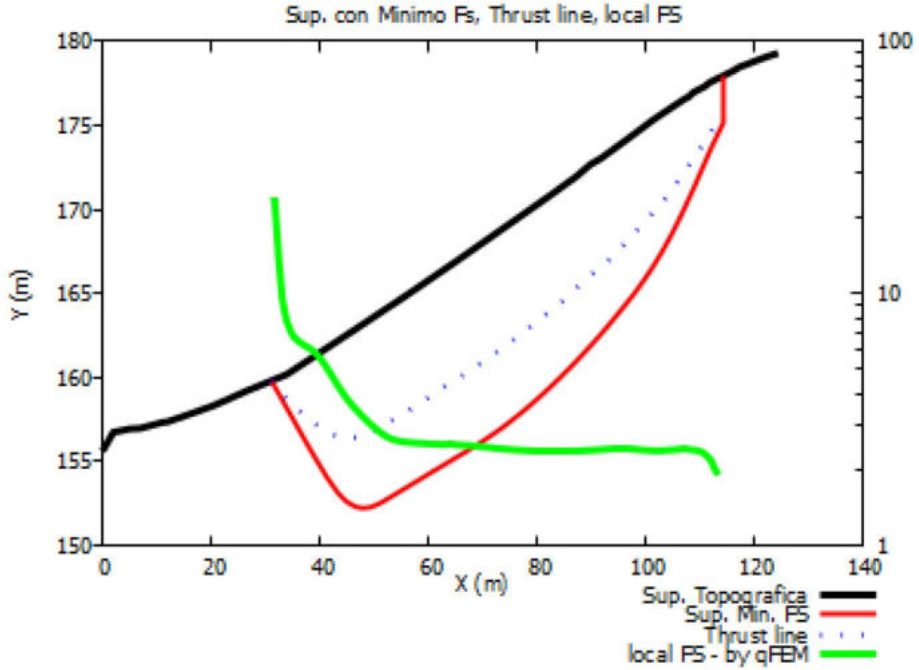
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 5.0
Range X inizio generazione : 2.5 - 114.6
Range X termine generazione : 15.0 - 122.1
Livello Y minimo considerato : 134.3

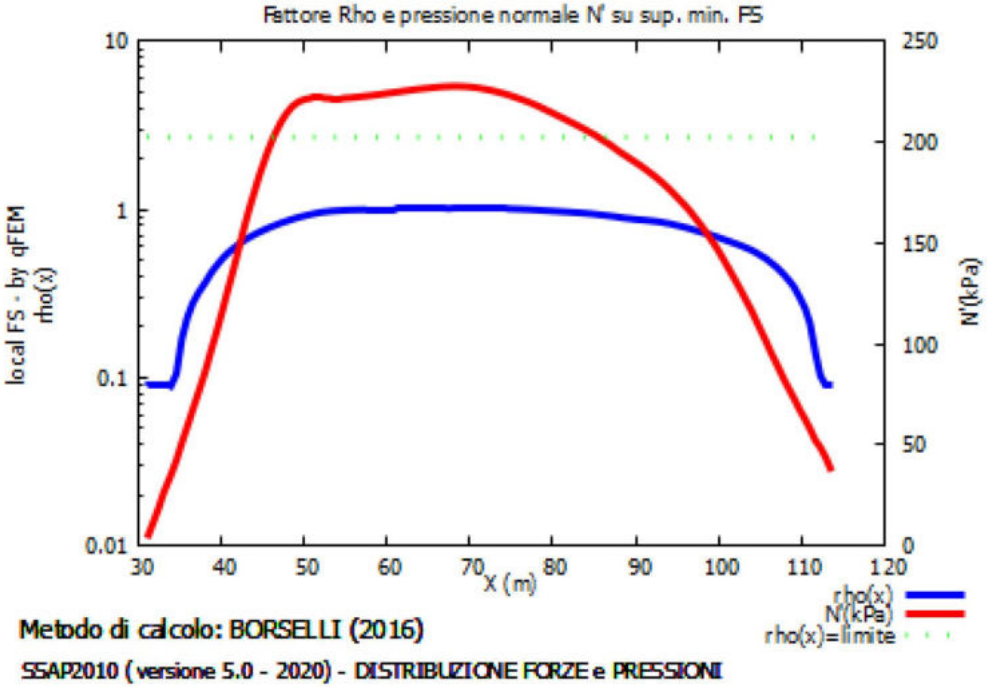
Parametri Geotecnici degli strati # ----------

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





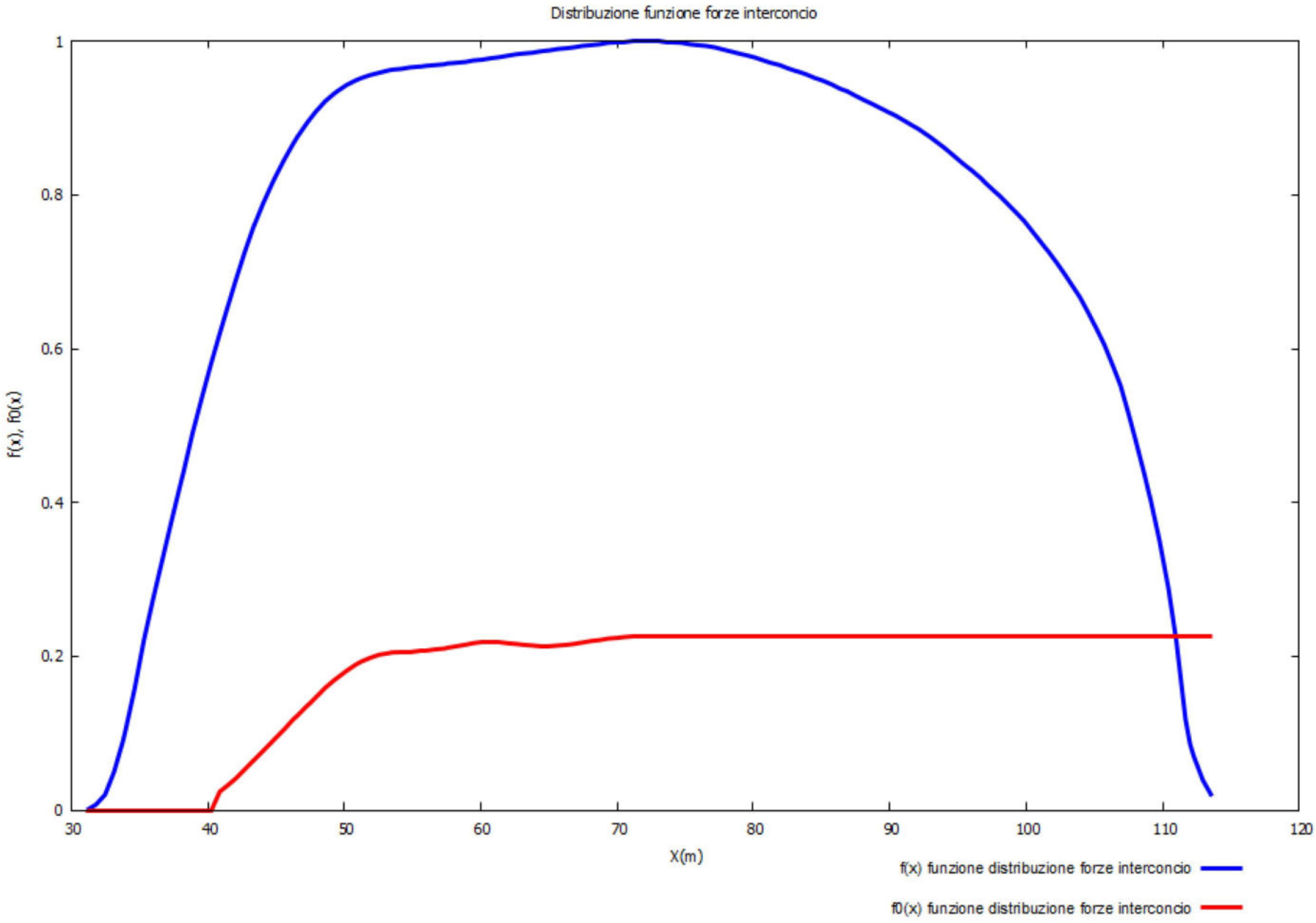


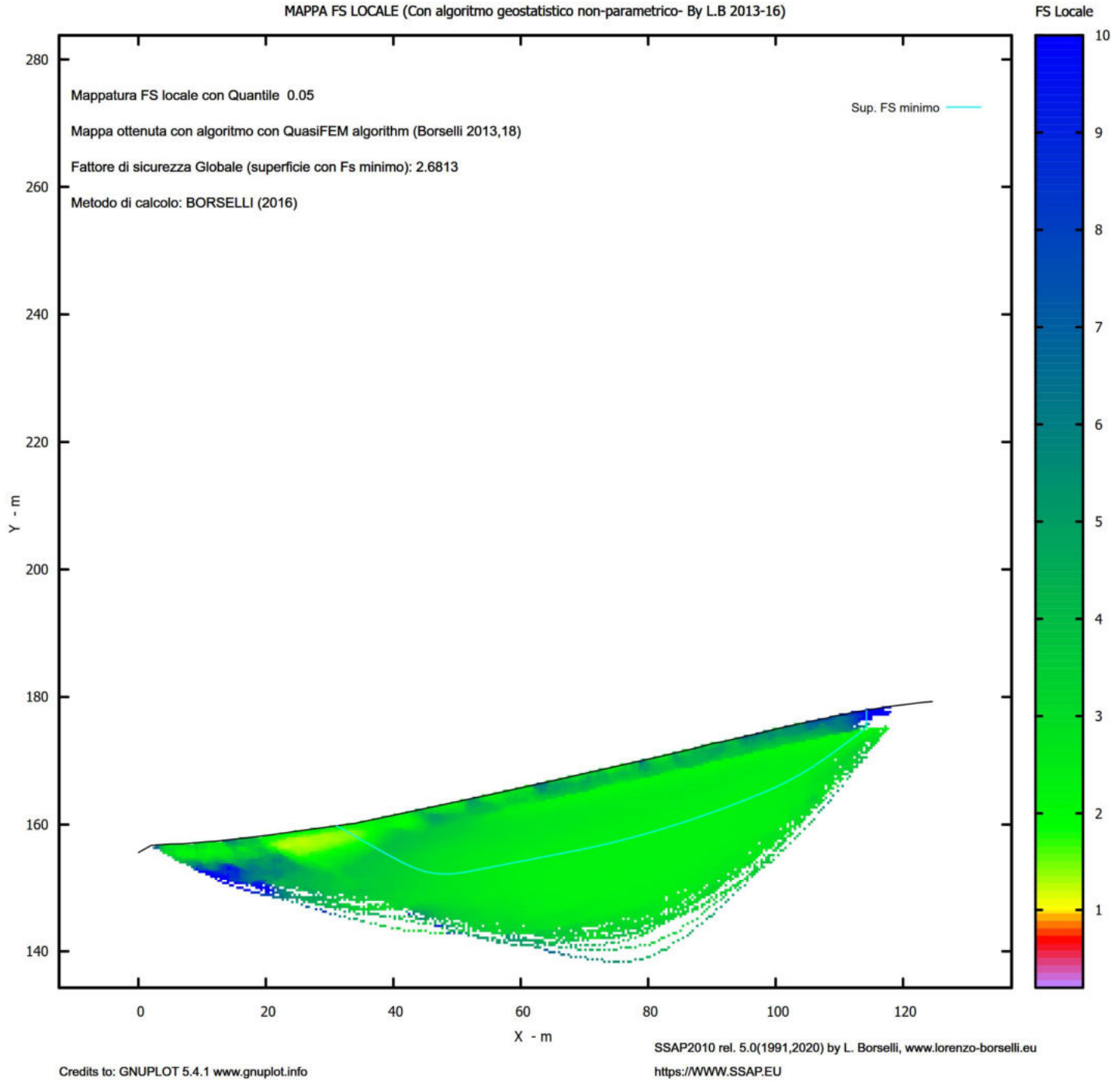


Metodo di calcolo: BORSELLI (2016)

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

14/11/21 11:54

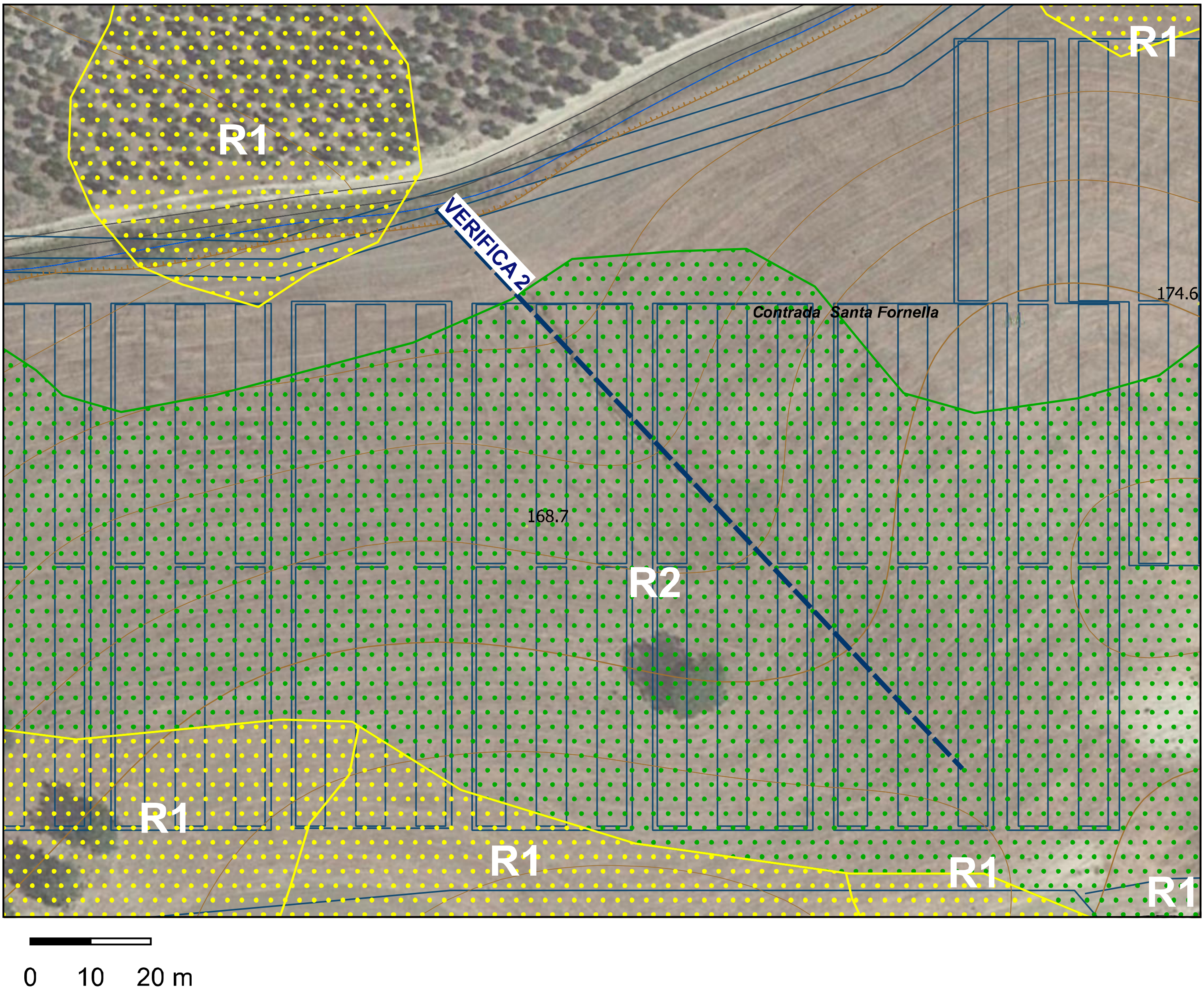


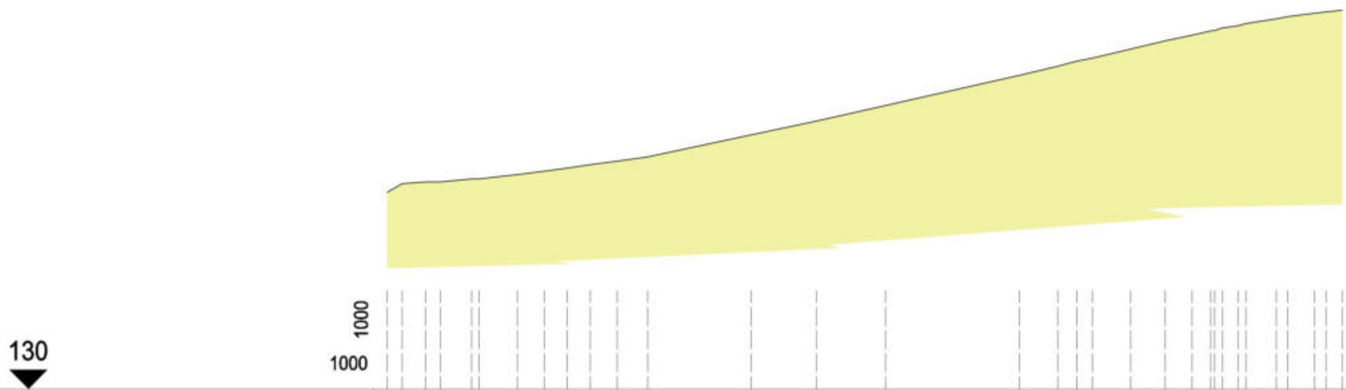

MAPPA FS LOCALE (Con algoritmo geostatistico non-parametrico- By L.B 2013-16)
FS Locale
Mappatura FS locale con Quantile 0.05
Mappa ottenuta con algoritmo con QuasiFEM algorithm (Borselli 2013,18)
Fattore di sicurezza Globale (superficie con Fs minimo): 2.6813
Metodo di calcolo: BORSELLI (2016)
Sup. FS minimo
Y - m
X - m
280
260
240
220
200
180
160
140
0
20
40
60
80
100
120
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 DRENATA

SEZIONE DI VERIFICA N. 2





DISTANZE PROGRESSIVE	0	2	5	7	11	12	17	20.5	23.5	26.5	30	34	47.5	56	65	82.5	87.5	90	92	97	101.5	105	107.5	108	109	111	112	116	117.5	121	122.5	124.59
DISTANZE PARZIALI	2	3	2	4	1	5	3.5	3	3	3.5	4	13.5	8.5	9	17.5	5	2.5	2	5	4.5	3.5	2.5	0.5	2	1	4	1.5	3.5	1.5	2.09	
QUOTE	155.6	156.73	156.94	156.97	157.32	157.36	157.92	158.33	158.75	159.18	159.65	160.18	163.05	164.87	166.86	170.82	171.98	172.68	173.05	174.23	175.31	176.07	176.59	[illegible]	176.97	[illegible]	177.56	178.19	178.47	178.9	179.08	179.29

Report elaborazioni

SSAP 5.0 - Slope Stability Analysis Program (1991,2020)
WWW.SSAP.EU
Build No. 11719
BY
Dr. Geol. LORENZO BORSELLI *,**
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** Gia' Ricercatore CNR-IRPI fino a Luglio 2011

Ultima Revisione struttura tabelle del report: 12 settembre 2020

File report: C:\SSAP\CRACO\MIADONNA\VERIFICA 2\NONDRENATA\MORG\MORG.txt
Data: 14/11/2021
Localita' :
Descrizione:
Modello pendio: VERIFICA2NONDRENATA.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	155.60	-	-	-	-	-	-
2.00	156.73	-	-	-	-	-	-
5.00	156.94	-	-	-	-	-	-
7.00	156.97	-	-	-	-	-	-
11.00	157.32	-	-	-	-	-	-
12.00	157.36	-	-	-	-	-	-
17.00	157.92	-	-	-	-	-	-
20.50	158.33	-	-	-	-	-	-
23.50	158.75	-	-	-	-	-	-
26.50	159.18	-	-	-	-	-	-
30.00	159.65	-	-	-	-	-	-
34.00	160.18	-	-	-	-	-	-
47.50	163.05	-	-	-	-	-	-
56.00	164.87	-	-	-	-	-	-
65.00	166.86	-	-	-	-	-	-
82.50	170.82	-	-	-	-	-	-
87.50	171.98	-	-	-	-	-	-
90.00	172.68	-	-	-	-	-	-
92.00	173.05	-	-	-	-	-	-
97.00	174.23	-	-	-	-	-	-
101.50	175.31	-	-	-	-	-	-
105.00	176.07	-	-	-	-	-	-
107.50	176.60	-	-	-	-	-	-
108.00	176.67	-	-	-	-	-	-
109.00	176.97	-	-	-	-	-	-
111.00	177.30	-	-	-	-	-	-
112.00	177.56	-	-	-	-	-	-
116.00	178.19	-	-	-	-	-	-
117.50	178.47	-	-	-	-	-	-
121.00	178.90	-	-	-	-	-	-
122.50	179.08	-	-	-	-	-	-
124.59	179.29	-	-	-	-	-	-

ASSENZA DI FALDA

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

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

LEGENDA: fi`_____ Angolo di attrito interno efficace(in gradi)
C` _____ Coesione efficace (in Kpa)
Cu _____ Resistenza al taglio Non drenata (in Kpa)
Gamm _____ Peso di volume terreno fuori falda (in KN/m^3)
Gamm_sat __ Peso di volume terreno immerso (in KN/m^3)
STR_IDX ___ Indice di resistenza (usato in solo in 'SNIFF SEARCH) (adimensionale)

---- SOLO Per AMMASSI ROCCIOSI FRATTURATI - Parametri Criterio di Rottura di Hoek (2002)-
sigci _____ Resistenza Compressione Uniassiale Roccia Intatta (in MPa)
GSI _____ Geological Strenght Index ammasso(adimensionale)
mi _____ Indice litologico ammasso(adimensionale)
D _____ Fattore di disturbo ammasso(adimensionale)
Fattore di riduzione NTC2018: gammaPHI=1.25 e gammaC=1.25 - DISATTIVATO (solo per ROCCE)
Uso CRITERIO DI ROTTURA Hoek et al.(2002,2006) - non-lineare - Generalizzato, secondo Lei et al.(2016)

---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
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): 5.0 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 2.49 114.62
LIVELLO MINIMO CONSIDERATO (Ymin): 134.28
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 14.95 122.10

*** 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 : 0.0250
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Negativo): -0.0125
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) 1.9067 - Min. - X Y Lambda= 0.1403
10.25 157.25
20.38 148.36
24.99 144.49
27.92 142.30
30.22 140.89
32.61 139.80
34.60 139.15
36.91 138.70
39.55 138.45
43.11 138.33
46.07 138.31
48.74 138.39
51.21 138.55
53.77 138.83
56.21 139.18
58.80 139.66
61.57 140.27
64.79 141.07
67.48 141.85
70.00 142.71
72.34 143.65
74.87 144.83
77.22 146.06
79.73 147.53
82.40 149.24
85.50 151.35
88.27 153.33
90.91 155.31
93.45 157.30
96.04 159.44
98.84 161.90
102.05 164.84
104.42 167.09
104.42 175.94

Fattore di sicurezza (FS) 1.9494 - N.2 -- X Y Lambda= 0.1585

X	Y
10.41	157.27
17.46	151.63
20.89	148.98
23.23	147.28
25.23	145.95
27.13	144.82
28.94	143.85
30.90	142.92
33.04	142.01
35.62	141.00
37.64	140.32
39.44	139.84
41.03	139.57
42.84	139.42
44.41	139.43
46.18	139.61
48.13	139.95
50.60	140.50
52.77	141.03
54.79	141.56
56.72	142.11
58.66	142.70
60.54	143.32
62.45	143.99
64.40	144.72
66.46	145.52
68.49	146.32
70.48	147.10
72.47	147.88
74.44	148.65
76.43	149.44
78.43	150.24
80.49	151.05
82.59	151.89
84.53	152.72
86.42	153.59
88.25	154.50
90.17	155.53
92.02	156.58
93.94	157.74
95.93	159.01
98.11	160.47
100.14	161.86
102.10	163.27
104.00	164.69
105.94	166.18
108.00	167.84
108.00	176.67

Fattore di sicurezza (FS) 1.9532 - N.3 -- X Y Lambda= 0.1530

X	Y
12.32	157.40
22.42	149.52
27.09	146.03
30.14	143.99
32.60	142.59
35.10	141.49
37.29	140.75
39.78	140.16
42.62	139.72
46.37	139.34
49.26	139.17
51.80	139.19
54.05	139.39
56.56	139.83
58.78	140.39
61.22	141.20
63.86	142.25
67.08	143.69
70.02	145.04
72.80	146.35
75.49	147.65
78.15	148.98
80.80	150.33

83.50 151.75
86.29 153.25
89.24 154.86
91.91 156.43
94.50 158.05
97.00 159.72
99.62 161.59
102.43 163.76
105.67 166.41
107.27 167.78
107.27 176.55

Fattore di sicurezza (FS) 1.9612 - N.4 -- X Y Lambda= 0.1273
10.68 157.29
20.49 150.68
25.23 147.59
28.45 145.65
31.19 144.16
33.82 142.91
36.30 141.88
38.99 140.91
41.93 140.00
45.50 139.02
48.30 138.39
50.81 137.99
53.05 137.82
55.57 137.85
57.81 138.07
60.31 138.52
63.11 139.21
66.64 140.26
69.59 141.23
72.29 142.25
74.80 143.33
77.43 144.59
79.91 145.92
82.53 147.45
85.30 149.20
88.45 151.31
91.29 153.30
94.00 155.30
96.60 157.33
99.28 159.51
102.17 162.03
105.48 165.04
108.81 168.20
108.81 176.91

Fattore di sicurezza (FS) 1.9738 - N.5 -- X Y Lambda= 0.1267
9.30 157.17
19.48 150.66
24.29 147.71
27.51 145.92
30.19 144.64
32.82 143.60
35.21 142.84
37.82 142.19
40.66 141.66
44.14 141.16
47.08 140.82
49.80 140.62
52.34 140.54
55.01 140.57
57.55 140.71
60.27 140.97
63.20 141.37
66.66 141.94
69.50 142.54
72.12 143.24
74.53 144.04
77.17 145.10
79.59 146.25
82.21 147.65

85.02 149.32
88.34 151.45
91.27 153.42
94.05 155.39
96.69 157.39
99.41 159.55
102.34 162.04
105.69 165.04
108.82 167.96
108.82 176.92

Fattore di sicurezza (FS) 1.9744 - N.6 -- X Y Lambda= 0.1568
13.42 157.52
21.40 150.28
25.15 147.01
27.63 145.04
29.67 143.62
31.70 142.45
33.51 141.57
35.55 140.79
37.84 140.09
40.80 139.35
43.09 138.88
45.11 138.60
46.90 138.50
48.90 138.55
50.66 138.75
52.62 139.13
54.77 139.69
57.45 140.52
59.80 141.30
61.99 142.08
64.08 142.87
66.19 143.74
68.24 144.63
70.34 145.61
72.51 146.66
74.84 147.85
77.05 149.01
79.20 150.18
81.31 151.35
83.44 152.57
85.55 153.82
87.71 155.12
89.92 156.49
92.26 157.98
94.42 159.42
96.52 160.89
98.56 162.39
100.67 164.02
102.96 165.90
104.51 167.23
104.51 175.96

Fattore di sicurezza (FS) 1.9846 - N.7 -- X Y Lambda= 0.1192
9.72 157.21
19.43 150.86
24.21 147.83
27.51 145.86
30.36 144.28
33.03 142.93
35.63 141.73
38.40 140.57
41.41 139.42
44.95 138.17
47.73 137.33
50.21 136.77
52.40 136.47
54.92 136.37
57.12 136.50
59.63 136.87
62.46 137.50
66.14 138.51

69.12 139.44
71.82 140.44
74.29 141.50
76.92 142.81
79.37 144.18
81.97 145.80
84.74 147.67
87.95 149.98
90.84 152.15
93.59 154.31
96.24 156.48
98.94 158.79
101.88 161.44
105.22 164.58
108.82 168.09
108.82 176.92

Fattore di sicurezza (FS) 1.9985 - N.8 -- X Y Lambda= 0.1308
11.74 157.35
21.58 150.19
26.18 147.00
29.20 145.11
31.67 143.79
34.14 142.74
36.33 142.01
38.78 141.41
41.48 140.95
44.92 140.55
47.76 140.30
50.35 140.18
52.75 140.19
55.28 140.33
57.66 140.58
60.23 140.97
63.00 141.50
66.30 142.25
69.03 142.99
71.55 143.81
73.88 144.72
76.40 145.87
78.73 147.08
81.22 148.54
83.88 150.24
86.98 152.36
89.77 154.36
92.43 156.33
94.99 158.31
97.59 160.42
100.42 162.83
103.64 165.68
105.79 167.65
105.79 176.24

Fattore di sicurezza (FS) 1.9987 - N.9 -- X Y Lambda= 0.1297
10.93 157.31
18.64 151.11
22.41 148.16
24.99 146.27
27.20 144.77
29.29 143.48
31.30 142.36
33.46 141.28
35.82 140.20
38.64 139.02
40.85 138.20
42.81 137.62
44.56 137.27
46.54 137.06
48.26 137.03
50.20 137.18
52.35 137.51
55.09 138.07
57.48 138.60

59.69 139.14
61.79 139.71
63.90 140.35
65.98 141.02
68.14 141.77
70.41 142.62
72.93 143.62
75.10 144.56
77.16 145.58
79.10 146.65
81.18 147.92
83.13 149.24
85.18 150.74
87.34 152.45
89.78 154.48
92.05 156.41
94.25 158.32
96.39 160.23
98.53 162.18
100.90 164.40
103.57 166.96
103.57 175.76

Fattore di sicurezza (FS) 1.9990 - N.10 -- X Y Lambda= 0.1295
13.52 157.53
23.19 150.81
27.74 147.78
30.78 145.95
33.28 144.64
35.76 143.59
38.00 142.81
40.47 142.15
43.18 141.61
46.57 141.08
49.36 140.75
51.90 140.56
54.24 140.51
56.75 140.60
59.08 140.80
61.61 141.16
64.35 141.67
67.65 142.40
70.37 143.12
72.89 143.92
75.22 144.80
77.72 145.91
80.05 147.09
82.54 148.50
85.20 150.16
88.29 152.21
91.06 154.14
93.68 156.06
96.18 158.00
98.76 160.10
101.54 162.51
104.72 165.40
107.35 167.89
107.35 176.57

---------- 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	1.907	12475.8	6543.1	5278.4	Surplus
2	1.949	12380.1	6350.8	5394.2	Surplus
3	1.953	12339.6	6317.6	5390.2	Surplus
4	1.961	12805.5	6529.5	5623.0	Surplus
5	1.974	12390.0	6277.4	5484.9	Surplus
6	1.974	12152.8	6155.3	5381.9	Surplus
7	1.985	13190.3	6646.3	5879.4	Surplus
8	1.999	12009.0	6008.9	5399.1	Surplus
9	1.999	12489.6	6249.0	5615.7	Surplus

10 1.999 11952.8 5979.4 5375.5 Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 5278.4

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)
10.245	0.755	-41.27	5.43	0.00	0.00	0.00	100.00
11.000	0.788	-41.27	16.97	0.00	0.00	0.00	100.00
11.788	0.212	-41.27	6.48	0.00	0.00	0.00	100.00
12.000	0.788	-41.27	31.69	0.00	0.00	0.00	100.00
12.788	0.788	-41.27	43.83	0.00	0.00	0.00	100.00
13.576	0.788	-41.27	55.97	0.00	0.00	0.00	100.00
14.364	0.788	-41.27	68.11	0.00	0.00	0.00	100.00
15.152	0.788	-41.27	80.25	0.00	0.00	0.00	100.00
15.940	0.788	-41.27	92.39	0.00	0.00	0.00	100.00
16.729	0.271	-41.27	34.64	0.00	0.00	0.00	100.00
17.000	0.788	-41.27	108.75	0.00	0.00	0.00	100.00
17.788	0.788	-41.27	120.95	0.00	0.00	0.00	100.00
18.576	0.788	-41.27	133.15	0.00	0.00	0.00	100.00
19.364	0.788	-41.27	145.36	0.00	0.00	0.00	100.00
20.152	0.229	-41.27	44.45	0.00	0.00	0.00	100.00
20.381	0.119	-40.00	23.55	0.00	0.00	0.00	100.00
20.500	0.788	-40.00	162.77	0.00	0.00	0.00	100.00
21.288	0.788	-40.00	174.78	0.00	0.00	0.00	100.00
22.076	0.788	-40.00	186.79	0.00	0.00	0.00	100.00
22.864	0.636	-40.00	159.43	0.00	0.00	0.00	100.00
23.500	0.788	-40.00	208.51	0.00	0.00	0.00	100.00
24.288	0.700	-40.00	195.25	0.00	0.00	0.00	100.00
24.988	0.788	-36.72	230.69	0.00	0.00	0.00	100.00
25.776	0.724	-36.72	221.55	0.00	0.00	0.00	100.00
26.500	0.788	-36.72	251.56	0.00	0.00	0.00	100.00
27.288	0.634	-36.72	210.31	0.00	0.00	0.00	100.00
27.922	0.788	-31.69	270.26	0.00	0.00	0.00	100.00
28.710	0.788	-31.69	279.48	0.00	0.00	0.00	100.00
29.499	0.501	-31.69	182.63	0.00	0.00	0.00	100.00
30.000	0.219	-31.69	80.81	0.00	0.00	0.00	100.00
30.219	0.788	-24.47	296.11	0.00	0.00	0.00	100.00
31.007	0.788	-24.47	303.32	0.00	0.00	0.00	100.00
31.795	0.788	-24.47	310.53	0.00	0.00	0.00	100.00
32.583	0.023	-24.47	9.36	0.00	0.00	0.00	100.00
32.606	0.788	-18.08	317.16	0.00	0.00	0.00	100.00
33.395	0.605	-18.08	247.50	0.00	0.00	0.00	100.00
34.000	0.598	-18.08	247.79	0.00	0.00	0.00	100.00
34.598	0.788	-11.04	331.81	0.00	0.00	0.00	100.00
35.386	0.788	-11.04	336.81	0.00	0.00	0.00	100.00
36.174	0.741	-11.04	321.26	0.00	0.00	0.00	100.00
36.915	0.788	-5.44	345.90	0.00	0.00	0.00	100.00
37.703	0.788	-5.44	349.68	0.00	0.00	0.00	100.00
38.491	0.788	-5.44	353.45	0.00	0.00	0.00	100.00
39.279	0.267	-5.44	120.54	0.00	0.00	0.00	100.00
39.546	0.788	-1.86	358.12	0.00	0.00	0.00	100.00
40.334	0.788	-1.86	361.13	0.00	0.00	0.00	100.00
41.122	0.788	-1.86	364.13	0.00	0.00	0.00	100.00
41.910	0.788	-1.86	367.14	0.00	0.00	0.00	100.00
42.698	0.417	-1.86	195.33	0.00	0.00	0.00	100.00
43.115	0.788	-0.37	371.58	0.00	0.00	0.00	100.00
43.903	0.788	-0.37	374.26	0.00	0.00	0.00	100.00
44.691	0.788	-0.37	376.95	0.00	0.00	0.00	100.00
45.479	0.592	-0.37	284.91	0.00	0.00	0.00	100.00
46.071	0.788	1.60	381.44	0.00	0.00	0.00	100.00
46.859	0.641	1.60	311.83	0.00	0.00	0.00	100.00

47.500	0.788	1.60	385.56	0.00	0.00	0.00	100.00
48.288	0.451	1.60	221.83	0.00	0.00	0.00	100.00
48.739	0.788	3.82	388.91	0.00	0.00	0.00	100.00
49.527	0.788	3.82	390.72	0.00	0.00	0.00	100.00
50.316	0.788	3.82	392.53	0.00	0.00	0.00	100.00
51.104	0.111	3.82	55.57	0.00	0.00	0.00	100.00
51.215	0.788	6.13	394.34	0.00	0.00	0.00	100.00
52.003	0.788	6.13	395.65	0.00	0.00	0.00	100.00
52.791	0.788	6.13	396.95	0.00	0.00	0.00	100.00
53.579	0.192	6.13	96.75	0.00	0.00	0.00	100.00
53.771	0.788	8.34	398.34	0.00	0.00	0.00	100.00
54.559	0.788	8.34	399.17	0.00	0.00	0.00	100.00
55.347	0.653	8.34	331.34	0.00	0.00	0.00	100.00
56.000	0.213	8.34	108.11	0.00	0.00	0.00	100.00
56.213	0.788	10.49	400.74	0.00	0.00	0.00	100.00
57.001	0.788	10.49	401.18	0.00	0.00	0.00	100.00
57.789	0.788	10.49	401.62	0.00	0.00	0.00	100.00
58.577	0.225	10.49	114.64	0.00	0.00	0.00	100.00
58.802	0.788	12.38	401.98	0.00	0.00	0.00	100.00
59.590	0.788	12.38	402.00	0.00	0.00	0.00	100.00
60.378	0.788	12.38	402.02	0.00	0.00	0.00	100.00
61.166	0.409	12.38	208.42	0.00	0.00	0.00	100.00
61.575	0.788	13.89	401.87	0.00	0.00	0.00	100.00
62.363	0.788	13.89	401.55	0.00	0.00	0.00	100.00
63.151	0.788	13.89	401.23	0.00	0.00	0.00	100.00
63.939	0.788	13.89	400.91	0.00	0.00	0.00	100.00
64.727	0.059	13.89	30.21	0.00	0.00	0.00	100.00
64.786	0.214	16.11	108.58	0.00	0.00	0.00	100.00
65.000	0.788	16.11	400.11	0.00	0.00	0.00	100.00
65.788	0.788	16.11	399.35	0.00	0.00	0.00	100.00
66.576	0.788	16.11	398.58	0.00	0.00	0.00	100.00
67.364	0.118	16.11	59.79	0.00	0.00	0.00	100.00
67.483	0.788	18.89	397.37	0.00	0.00	0.00	100.00
68.271	0.788	18.89	395.95	0.00	0.00	0.00	100.00
69.059	0.788	18.89	394.53	0.00	0.00	0.00	100.00
69.847	0.153	18.89	76.42	0.00	0.00	0.00	100.00
70.000	0.788	21.97	392.45	0.00	0.00	0.00	100.00
70.788	0.788	21.97	390.28	0.00	0.00	0.00	100.00
71.576	0.767	21.97	377.77	0.00	0.00	0.00	100.00
72.343	0.788	24.92	385.61	0.00	0.00	0.00	100.00
73.131	0.788	24.92	382.69	0.00	0.00	0.00	100.00
73.919	0.788	24.92	379.77	0.00	0.00	0.00	100.00
74.707	0.161	24.92	77.19	0.00	0.00	0.00	100.00
74.868	0.788	27.72	375.87	0.00	0.00	0.00	100.00
75.656	0.788	27.72	372.20	0.00	0.00	0.00	100.00
76.444	0.779	27.72	364.15	0.00	0.00	0.00	100.00
77.223	0.788	30.38	364.54	0.00	0.00	0.00	100.00
78.011	0.788	30.38	360.12	0.00	0.00	0.00	100.00
78.799	0.788	30.38	355.71	0.00	0.00	0.00	100.00
79.587	0.144	30.38	64.63	0.00	0.00	0.00	100.00
79.732	0.788	32.59	350.16	0.00	0.00	0.00	100.00
80.520	0.788	32.59	345.10	0.00	0.00	0.00	100.00
81.308	0.788	32.59	340.03	0.00	0.00	0.00	100.00
82.096	0.308	32.59	131.46	0.00	0.00	0.00	100.00
82.404	0.096	34.29	40.95	0.00	0.00	0.00	100.00
82.500	0.788	34.29	332.08	0.00	0.00	0.00	100.00
83.288	0.788	34.29	326.56	0.00	0.00	0.00	100.00
84.076	0.788	34.29	321.04	0.00	0.00	0.00	100.00
84.864	0.634	34.29	254.12	0.00	0.00	0.00	100.00
85.498	0.788	35.47	310.89	0.00	0.00	0.00	100.00
86.286	0.788	35.47	305.00	0.00	0.00	0.00	100.00
87.074	0.426	35.47	162.39	0.00	0.00	0.00	100.00
87.500	0.775	35.47	291.22	0.00	0.00	0.00	100.00
88.275	0.788	36.81	290.78	0.00	0.00	0.00	100.00
89.063	0.788	36.81	285.03	0.00	0.00	0.00	100.00
89.851	0.149	36.81	53.30	0.00	0.00	0.00	100.00
90.000	0.788	36.81	277.62	0.00	0.00	0.00	100.00
90.788	0.125	36.81	43.37	0.00	0.00	0.00	100.00
90.913	0.788	38.20	269.37	0.00	0.00	0.00	100.00
91.701	0.299	38.20	100.23	0.00	0.00	0.00	100.00
92.000	0.788	38.20	259.50	0.00	0.00	0.00	100.00
92.788	0.657	38.20	211.26	0.00	0.00	0.00	100.00
93.445	0.788	39.57	246.86	0.00	0.00	0.00	100.00
94.233	0.788	39.57	239.62	0.00	0.00	0.00	100.00
95.022	0.788	39.57	232.38	0.00	0.00	0.00	100.00

95.810	0.227	39.57	65.45	0.00	0.00	0.00	100.00
96.036	0.788	41.22	222.75	0.00	0.00	0.00	100.00
96.824	0.176	41.22	48.61	0.00	0.00	0.00	100.00
97.000	0.788	41.22	213.17	0.00	0.00	0.00	100.00
97.788	0.788	41.22	205.37	0.00	0.00	0.00	100.00
98.576	0.269	41.22	68.25	0.00	0.00	0.00	100.00
98.845	0.788	42.49	194.66	0.00	0.00	0.00	100.00
99.633	0.788	42.49	186.36	0.00	0.00	0.00	100.00
100.421	0.788	42.49	178.07	0.00	0.00	0.00	100.00
101.209	0.291	42.49	63.61	0.00	0.00	0.00	100.00
101.500	0.553	42.49	117.73	0.00	0.00	0.00	100.00
102.053	0.788	43.60	160.34	0.00	0.00	0.00	100.00
102.841	0.788	43.60	151.32	0.00	0.00	0.00	100.00
103.629	0.788	43.60	142.30	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	ht	yt	yt'	E(x)	T(x)	E'	rho(x)	FS_qFEM	FS_srmFEM		
(m)	(m)	(m)	(--)	(kN/m)	(kN/m)	(kN)	(--)	(--)	(--)		
10.245	0.000	157.254	-0.661	0.0000000000E+000	0.0000000000E+000	8.8161766880E+000	0.064	8.247	9.050		
11.000	0.183	156.774	-0.661	1.7012935245E+001	1.3196361817E-002	3.6262473657E+001	0.064	8.247	9.050		
11.788	0.334	156.234	-0.634	5.6882667239E+001	2.1374932029E-001	5.3212321733E+001	0.064	3.767	4.124		
12.000	0.427	156.140	-0.519	6.8308499338E+001	3.4129225793E-001	6.2438078018E+001	0.064	3.512	3.843		
12.788	0.693	155.715	-0.560	1.4248784747E+002	1.6737171849E+000	1.1659541993E+002	0.064	2.668	2.913		
13.576	0.928	155.258	-0.620	2.5208292820E+002	4.9496033736E+000	1.6533898160E+002	0.064	2.133	2.327		
14.364	1.098	154.737	-0.616	4.0309051034E+002	1.1359315038E+001	1.8845490651E+002	0.064	1.795	1.954		
15.152	1.340	154.287	-0.620	5.4912026321E+002	1.8793905013E+001	2.1708416890E+002	0.075	1.623	1.765		
15.940	1.505	153.760	-0.628	7.4525248530E+002	3.0480700017E+001	2.3108798832E+002	0.105	1.523	1.651		
16.729	1.734	153.297	-0.574	9.1335466536E+002	4.0392123304E+001	2.0660483569E+002	0.122	1.434	1.551		
17.000	1.827	153.152	-0.551	9.6881805549E+002	4.3792776512E+001	2.0959880748E+002	0.127	1.415	1.529		
17.788	2.080	152.713	-0.526	1.1461291084E+003	5.5266011060E+001	2.2286579069E+002	0.143	1.373	1.479		
18.576	2.382	152.323	-0.485	1.3200928605E+003	6.7523671003E+001	2.2430486391E+002	0.158	1.361	1.462		
19.364	2.699	151.949	-0.462	1.4996721402E+003	8.1101962715E+001	2.2901790278E+002	0.173	1.368	1.463		
20.152	3.037	151.596	-0.442	1.6810644519E+003	9.5777195182E+001	2.2966617738E+002	0.188	1.390	1.478		
20.381	3.142	151.500	-0.418	1.7335354608E+003	1.0029989794E+002	2.2975454140E+002	0.192	1.399	1.485		
20.500	3.193	151.450	-0.432	1.7609010386E+003	1.0268222155E+002	2.3269801520E+002	0.194	1.404	1.489		
21.288	3.511	151.108	-0.441	1.9590080683E+003	1.2077146831E+002	2.6360171437E+002	0.212	1.444	1.519		
22.076	3.820	150.755	-0.453	2.1763826633E+003	1.4199623842E+002	2.8984785592E+002	0.233	1.497	1.558		
22.864	4.119	150.393	-0.449	2.4158581248E+003	1.6704090379E+002	3.0701986908E+002	0.257	1.567	1.606		
23.500	4.376	150.117	-0.435	2.6126591266E+003	1.8903029971E+002	3.1717004937E+002	0.277	1.634	1.648		
24.288	4.695	149.775	-0.452	2.8700498818E+003	2.1929397636E+002	3.5539042182E+002	0.303	1.733	1.705		
24.988	4.952	149.444	-0.466	3.1366343619E+003	2.5254960837E+002	3.8470811845E+002	0.333	1.861	1.767		
25.776	5.176	149.081	-0.433	3.4431503485E+003	2.9210333561E+002	3.7329405027E+002	0.367	2.042	1.843		
26.500	5.425	148.790	-0.376	3.7030259434E+003	3.2693913276E+002	3.4830723737E+002	0.394	2.236	1.911		
27.288	5.736	148.513	-0.342	3.9684166930E+003	3.6390954852E+002	3.3343049453E+002	0.420	2.507	1.987		
27.922	6.000	148.303	-0.312	4.1782135152E+003	3.9371841816E+002	3.2235637907E+002	0.440	2.800	2.055		
28.710	6.252	148.069	-0.276	4.4240335231E+003	4.2935753388E+002	2.9751712299E+002	0.464	3.264	2.145		
29.499	6.537	147.868	-0.245	4.6471516552E+003	4.6229959295E+002	2.7208283550E+002	0.483	3.843	2.239		
30.000	6.732	147.753	-0.219	4.7800671806E+003	4.8222896140E+002	2.4559916387E+002	0.494	4.293	2.302		
30.219	6.824	147.710	-0.189	4.8319202992E+003	4.9007851608E+002	2.3635918137E+002	0.497	4.500	2.328		
31.007	7.036	147.563	-0.174	5.0160583626E+003	5.1847383341E+002	2.2682242180E+002	0.513	5.337	2.430		
31.795	7.267	147.436	-0.148	5.1894314351E+003	5.4592378033E+002	2.1071988518E+002	0.528	6.249	2.539		
32.583	7.521	147.331	-0.133	5.3481891322E+003	5.7194348531E+002	1.8230130220E+002	0.540	7.067	2.650		
32.606	7.529	147.328	-0.104	5.3524541336E+003	5.7265748407E+002	1.8184576958E+002	0.541	7.087	2.653		
33.395	7.704	147.246	-0.094	5.4987975637E+003	5.9801152125E+002	1.8261643283E+002	0.555	7.394	2.768		
34.000	7.852	147.197	-0.072	5.6079396692E+003	6.1798730689E+002	1.7872147923E+002	0.566	7.215	2.858		
34.598	8.009	147.159	-0.051	5.7138305720E+003	6.3815925741E+002	1.7445480296E+002	0.575	6.776	2.952		
35.386	8.130	147.126	-0.028	5.8484503786E+003	6.6518535499E+002	1.6071682057E+002	0.590	6.066	3.078		
36.174	8.273	147.115	-0.001	5.9671479144E+003	6.9051943924E+002	1.4014625365E+002	0.604	5.325	3.190		
36.915	8.426	147.124	0.024	6.0637045719E+003	7.1242792109E+002	1.2718039342E+002	0.615	4.718	3.281		
37.703	8.529	147.151	0.043	6.1613166361E+003	7.3582923993E+002	1.1759166572E+002	0.628	4.208	3.365		
38.491	8.644	147.191	0.057	6.2490492554E+003	7.5775096239E+002	9.9215255199E+001	0.640	3.832	3.432		

39.279	8.768	147.241	0.064	6.3176969370E+003	7.7576651495E+002	7.8885395134E+001	0.648	3.594	3.469
39.546	8.812	147.259	0.074	6.3380058504E+003	7.8123480579E+002	7.4938035292E+001	0.650	3.533	3.477
40.334	8.897	147.319	0.080	6.3943559663E+003	7.9677560242E+002	6.7526277182E+001	0.658	3.399	3.484
41.122	8.989	147.385	0.088	6.4444388735E+003	8.1093356758E+002	6.1262704268E+001	0.664	3.303	3.470
41.910	9.088	147.458	0.094	6.4909165215E+003	8.2435871265E+002	5.6293470970E+001	0.669	3.230	3.437
42.698	9.189	147.534	0.098	6.5331670626E+003	8.3679210240E+002	5.1062247960E+001	0.674	3.178	3.389
43.115	9.245	147.576	0.106	6.5538818823E+003	8.4298388643E+002	4.9433091795E+001	0.676	3.154	3.355
43.903	9.335	147.661	0.111	6.5924201621E+003	8.5471104299E+002	4.7143250736E+001	0.680	3.109	3.281
44.691	9.430	147.751	0.115	6.6281877511E+003	8.6589380883E+002	4.3008384161E+001	0.684	3.067	3.197
45.479	9.526	147.842	0.121	6.6602087702E+003	8.7623297387E+002	3.8374320812E+001	0.687	3.027	3.107
46.071	9.606	147.918	0.126	6.6819212889E+003	8.8361799850E+002	3.4307781628E+001	0.690	2.992	3.030
46.859	9.683	148.017	0.126	6.7064709548E+003	8.9241544608E+002	2.8311809093E+001	0.692	2.945	2.931
47.500	9.746	148.098	0.132	6.7231343418E+003	8.9881707179E+002	2.4203673393E+001	0.694	2.905	2.853
48.288	9.831	148.205	0.137	6.7404648695E+003	9.0615452247E+002	1.9249834718E+001	0.695	2.851	2.757
48.739	9.881	148.268	0.139	6.7484444018E+003	9.0995307053E+002	1.5480181130E+001	0.696	2.817	2.704
49.527	9.938	148.377	0.140	6.7576166139E+003	9.1544447571E+002	8.9556920178E+000	0.697	2.759	2.618
50.316	9.996	148.488	0.148	6.7625601122E+003	9.2002560936E+002	3.0631667868E+000	0.697	2.701	2.539
51.104	10.066	148.611	0.155	6.7624446915E+003	9.2376036449E+002	-1.5804113364E+000	0.697	2.637	2.461
51.215	10.075	148.628	0.154	6.7622462881E+003	9.2423911751E+002	-2.4371202932E+000	0.697	2.628	2.451
52.003	10.112	148.749	0.156	6.7566742895E+003	9.2672540948E+002	-9.5331442268E+000	0.696	2.567	2.383
52.791	10.152	148.873	0.164	6.7472204137E+003	9.2839297188E+002	-1.5654179194E+001	0.695	2.508	2.319
53.579	10.202	149.008	0.170	6.7320006115E+003	9.2904594689E+002	-2.0747738851E+001	0.693	2.447	2.259
53.771	10.213	149.040	0.173	6.7279564835E+003	9.2909593777E+002	-2.2046338678E+001	0.693	2.433	2.245
54.559	10.235	149.177	0.174	6.7075058534E+003	9.2867297241E+002	-2.8178177735E+001	0.691	2.375	2.190
55.347	10.257	149.315	0.179	6.6835428305E+003	9.2738147044E+002	-3.3863911381E+001	0.689	2.321	2.141
56.000	10.282	149.436	0.187	6.6595620040E+003	9.2555300558E+002	-3.9648844881E+001	0.686	2.276	2.100
56.213	10.292	149.477	0.197	6.6509227463E+003	9.2479851982E+002	-4.1398259412E+001	0.685	2.261	2.087
57.001	10.303	149.634	0.195	6.6159693008E+003	9.2147244007E+002	-4.5705554594E+001	0.682	2.209	2.040
57.789	10.308	149.785	0.195	6.5788829338E+003	9.1738494542E+002	-4.9459041400E+001	0.678	2.162	1.998
58.577	10.319	149.941	0.197	6.5380133477E+003	9.1250208250E+002	-5.2163929201E+001	0.674	2.117	1.958
58.802	10.321	149.984	0.223	6.5262679264E+003	9.1102886803E+002	-5.5855789900E+001	0.673	2.105	1.947
59.590	10.331	150.168	0.226	6.4722884412E+003	9.0386437934E+002	-7.0288505895E+001	0.667	2.057	1.903
60.378	10.331	150.341	0.220	6.4154811559E+003	8.9590918268E+002	-7.3238291208E+001	0.661	2.013	1.862
61.166	10.332	150.515	0.220	6.3568523019E+003	8.8749268436E+002	-7.3614327734E+001	0.655	1.971	1.824
61.575	10.332	150.605	0.231	6.3269420253E+003	8.8313395221E+002	-7.5952968893E+001	0.652	1.950	1.806
62.363	10.324	150.791	0.237	6.2629149408E+003	8.7361211811E+002	-8.0681650023E+001	0.645	1.913	1.774
63.151	10.315	150.978	0.237	6.1997738727E+003	8.6410524292E+002	-8.0258125920E+001	0.639	1.878	1.745
63.939	10.307	151.165	0.237	6.1364143350E+003	8.5450424323E+002	-8.2722391213E+001	0.632	1.845	1.719
64.727	10.299	151.351	0.237	6.0693891611E+003	8.4422056717E+002	-7.8371704595E+001	0.625	1.813	1.697
64.786	10.298	151.365	0.256	6.0647632281E+003	8.4350771426E+002	-7.8055201411E+001	0.625	1.810	1.695
65.000	10.292	151.421	0.258	6.0479468680E+003	8.4092161501E+002	-8.0426927353E+001	0.623	1.802	1.690
65.788	10.268	151.624	0.246	5.9796200643E+003	8.3032417558E+002	-8.9328209530E+001	0.616	1.772	1.672
66.576	10.226	151.810	0.239	5.9071502510E+003	8.1893785668E+002	-9.4662991978E+001	0.609	1.742	1.655
67.364	10.190	152.002	0.243	5.8304149129E+003	8.0668616890E+002	-9.7792583785E+001	0.601	1.711	1.639
67.483	10.184	152.030	0.245	5.8188334279E+003	8.0480722949E+002	-9.8425272163E+001	0.600	1.706	1.637
68.271	10.108	152.224	0.256	5.7382793021E+003	7.9168249645E+002	-1.0734419487E+002	0.592	1.676	1.624
69.059	10.047	152.433	0.288	5.6496405203E+003	7.7699850131E+002	-1.2371786780E+002	0.583	1.645	1.610
69.847	10.022	152.677	0.312	5.5432786707E+003	7.5899897496E+002	-1.3940927885E+002	0.572	1.612	1.595
70.000	10.018	152.726	0.326	5.5218200389E+003	7.5533599840E+002	-1.4119222978E+002	0.570	1.606	1.593
70.788	9.959	152.984	0.318	5.4068144284E+003	7.3559156445E+002	-1.4308221751E+002	0.558	1.574	1.579
71.576	9.883	153.226	0.315	5.2962978630E+003	7.1635089089E+002	-1.4483505734E+002	0.546	1.548	1.568
72.343	9.822	153.474	0.332	5.1817673803E+003	6.9627957335E+002	-1.5419686117E+002	0.534	1.522	1.558
73.131	9.724	153.743	0.333	5.0562926558E+003	6.7422125906E+002	-1.5603655497E+002	0.521	1.499	1.548
73.919	9.613	153.999	0.344	4.9358269412E+003	6.5294335174E+002	-1.6287587377E+002	0.508	1.481	1.541
74.707	9.534	154.286	0.366	4.7995722743E+003	6.2887151214E+002	-1.7814849562E+002	0.493	1.464	1.535
74.868	9.520	154.346	0.377	4.7707318211E+003	6.2379246077E+002	-1.7927325798E+002	0.490	1.461	1.534
75.656	9.403	154.643	0.367	4.6292496805E+003	5.9897786971E+002	-1.7514693115E+002	0.475	1.447	1.530
76.444	9.271	154.925	0.389	4.4946701434E+003	5.7559135794E+002	-1.8526158664E+002	0.461	1.439	1.530
77.223	9.189	155.252	0.421	4.3392649212E+003	5.4913475554E+002	-1.9971564147E+002	0.444	1.433	1.532
78.011	9.059	155.585	0.416	4.1817653134E+003	5.2279349827E+002	-1.9641086374E+002	0.428	1.430	1.536
78.799	8.921	155.908	0.405	4.0296876297E+003	4.9784925836E+002	-1.8980130041E+002	0.413	1.429	1.542
79.587	8.774	156.223	0.398	3.8826058301E+003	4.7422657507E+002	-1.8209767555E+002	0.398	1.430	1.549
79.732	8.746	156.280	0.407	3.8564571766E+003	4.7008236819E+002	-1.8245309682E+002	0.396	1.431	1.550
80.520	8.566	156.603	0.394	3.7075650265E+003	4.4688164146E+002	-1.7992012709E+002	0.382	1.434	1.559
81.308	8.359	156.900	0.386	3.5728721214E+003	4.2639056395E+002	-1.7334245417E+002	0.369	1.439	1.567
82.096	8.167	157.212	0.391	3.4343475147E+003	4.0551880670E+002	-1.6895379254E+002	0.357	1.443	1.575
82.404	8.087	157.329	0.374	3.3831518399E+003	3.9785381998E+002	-1.6009759100E+002	0.352	1.445	1.578
82.500	8.056	157.363	0.401	3.3679226928E+003	3.9558045492E+002	-1.5997702235E+002	0.351	1.446	1.579
83.288	7.838	157.683	0.418	3.2301332570E+003	3.7494226134E+002	-1.7870360614E+002	0.338	1.450	1.585
84.076	7.641	158.023	0.466	3.0862550838E+003	3.5335463132E+002	-1.9434118164E+002	0.324	1.453	1.591
84.864	7.498	158.418	0.525	2.9238181403E+003	3.2902947432E+002	-2.1535304095E+002	0.307	1.456	1.595
85.498	7.417	158.769	0.541	2.7826584698E+003	3.0802859708E+002	-2.1615416814E+002	0.291	1.458	1.598
86.286	7.274	159.187	0.542	2.6188049083E+003	2.8388074815E+002	-2.0996071679E+002	0.274	1.459	1.599
87.074	7.148	159.623	0.550	2.4517242801E+003	2.5970590262E+002	-2.0691591779E+002	0.255	1.459	1.600
87.500	7.076	159.855	0.547	2.3647624364E+003	2.4736706468E+002	-2.0368962815E+002	0.246	1.460	1.601

88.275	6.949	160.280	0.506	2.2076376707E+003	2.2550826779E+002	-1.8437031377E+002	0.228	1.460	1.602
89.063	6.725	160.645	0.455	2.0771356647E+003	2.0814006689E+002	-1.6054862678E+002	0.215	1.461	1.604
89.851	6.486	160.996	0.438	1.9545854306E+003	1.9239749164E+002	-1.3943710682E+002	0.202	1.462	1.606
90.000	6.434	161.056	0.460	1.9342411248E+003	1.8985512404E+002	-1.3989940803E+002	0.200	1.463	1.606
90.788	6.216	161.427	0.468	1.8094015524E+003	1.7449127040E+002	-1.4896238553E+002	0.189	1.465	1.609
90.913	6.178	161.483	0.493	1.7909783126E+003	1.7226430406E+002	-1.4936074380E+002	0.187	1.465	1.610
91.701	5.952	161.877	0.503	1.6638444416E+003	1.5708150308E+002	-1.6180511314E+002	0.175	1.468	1.614
92.000	5.869	162.030	0.522	1.6154266836E+003	1.5133695558E+002	-1.6233426640E+002	0.171	1.469	1.616
92.788	5.664	162.445	0.542	1.4867762570E+003	1.3623369169E+002	-1.6578967530E+002	0.158	1.472	1.621
93.445	5.515	162.813	0.562	1.3764075286E+003	1.2340237914E+002	-1.6630511473E+002	0.146	1.475	1.625
94.233	5.307	163.257	0.566	1.2468638539E+003	1.0842982589E+002	-1.6323322285E+002	0.132	1.479	1.630
95.022	5.105	163.705	0.573	1.1191239036E+003	9.3715381903E+001	-1.6086551608E+002	0.118	1.482	1.635
95.810	4.908	164.160	0.573	9.9331214183E+002	7.9324842740E+001	-1.5110300217E+002	0.103	1.485	1.640
96.036	4.847	164.286	0.566	9.5964259128E+002	7.5538624028E+001	-1.4855237482E+002	0.099	1.486	1.641
96.824	4.604	164.734	0.555	8.4283482281E+002	6.2582145872E+001	-1.3004826099E+002	0.085	1.491	1.647
97.000	4.538	164.821	0.526	8.2068874952E+002	6.0169705590E+001	-1.2698073556E+002	0.082	1.491	1.648
97.788	4.267	165.242	0.520	7.1713761322E+002	4.9194626602E+001	-1.2476128901E+002	0.070	1.497	1.655
98.576	3.977	165.641	0.501	6.2404350698E+002	3.9857348754E+001	-1.1509647552E+002	0.064	1.502	1.661
98.845	3.871	165.771	0.515	5.9338671666E+002	3.6728531237E+001	-1.1612007480E+002	0.064	1.504	1.663
99.633	3.564	166.186	0.567	4.9712057714E+002	2.7072571156E+001	-1.2827078746E+002	0.064	1.512	1.672
100.421	3.321	166.665	0.588	3.9120990114E+002	1.7066301964E+001	-1.2571113099E+002	0.064	1.523	1.685
101.209	3.047	167.113	0.577	2.9897822033E+002	9.1495052584E+000	-1.1644829976E+002	0.064	1.538	1.702
101.500	2.955	167.287	0.529	2.6517780592E+002	6.5116197733E+000	-1.0602825551E+002	0.064	1.543	1.708
102.053	2.720	167.559	0.598	2.1729244037E+002	3.5431506768E+000	-9.1840913212E+001	0.064	1.560	1.727
102.841	2.499	168.089	0.738	1.3906080612E+002	1.0959474143E+000	-9.9717016066E+001	0.064	1.640	1.816
103.629	2.383	168.722	0.738	6.0121278020E+001	1.4641271009E-001	-8.8226926813E+001	0.064	1.758	1.946

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)
10.245	0.755	1.004	-41.274	-3.465	-3.480	100.017	100.448
11.000	0.788	1.049	-41.274	-10.370	-10.874	100.241	105.111
11.788	0.212	0.282	-41.274	-14.735	-4.155	100.569	28.357
12.000	0.788	1.049	-41.274	-19.370	-20.311	101.598	106.535
12.788	0.788	1.049	-41.274	-26.790	-28.092	103.930	108.980
13.576	0.788	1.049	-41.274	-34.210	-35.872	107.689	112.922
14.364	0.788	1.049	-41.274	-41.629	-43.652	108.918	114.211
15.152	0.788	1.049	-41.274	-49.049	-51.432	114.019	119.559
15.940	0.788	1.049	-41.274	-56.469	-59.212	111.889	117.326
16.729	0.271	0.361	-41.274	-61.456	-22.200	111.842	40.400
17.000	0.788	1.049	-41.274	-66.464	-69.693	113.763	119.291
17.788	0.788	1.049	-41.274	-73.922	-77.514	114.704	120.277
18.576	0.788	1.049	-41.274	-81.380	-85.334	116.288	121.938
19.364	0.788	1.049	-41.274	-88.838	-93.155	117.604	123.318
20.152	0.229	0.304	-41.274	-93.649	-28.486	118.702	36.107
20.381	0.119	0.155	-39.996	-94.494	-14.684	118.789	18.459
20.500	0.788	1.029	-39.996	-98.670	-101.504	121.551	125.041
21.288	0.788	1.029	-39.996	-105.950	-108.992	125.286	128.884
22.076	0.788	1.029	-39.996	-113.229	-116.480	129.837	133.565
22.864	0.636	0.830	-39.996	-119.805	-99.420	132.475	109.935
23.500	0.788	1.029	-39.996	-126.393	-130.022	136.055	139.962
24.288	0.700	0.913	-39.996	-133.288	-121.752	144.619	132.102
24.988	0.788	0.983	-36.719	-135.584	-133.301	145.865	143.410
25.776	0.724	0.903	-36.719	-141.734	-128.024	143.968	130.042
26.500	0.788	0.983	-36.719	-147.852	-145.362	142.870	140.465
27.288	0.634	0.791	-36.719	-153.578	-121.527	142.946	113.114
27.922	0.788	0.926	-31.692	-147.086	-136.230	138.546	128.320
28.710	0.788	0.926	-31.692	-152.104	-140.878	135.629	125.619
29.499	0.501	0.589	-31.692	-156.210	-92.058	133.876	78.896

30.000	0.219	0.257	-31.692	-158.501	-40.737	130.595	33.564
30.219	0.788	0.866	-24.469	-133.871	-115.913	125.901	109.012
31.007	0.788	0.866	-24.469	-137.130	-118.734	125.039	108.266
31.795	0.788	0.866	-24.469	-140.388	-121.556	123.734	107.136
32.583	0.023	0.026	-24.469	-142.066	-3.663	121.870	3.142
32.606	0.788	0.829	-18.077	-109.617	-90.873	118.095	97.901
33.395	0.605	0.637	-18.077	-111.338	-70.915	118.556	75.513
34.000	0.598	0.629	-18.077	-112.951	-70.997	118.988	74.791
34.598	0.788	0.803	-11.037	-68.976	-55.383	112.287	90.160
35.386	0.788	0.803	-11.037	-70.015	-56.218	111.518	89.542
36.174	0.741	0.755	-11.037	-71.024	-53.622	110.593	83.496
36.915	0.788	0.792	-5.441	-30.553	-24.187	105.344	83.396
37.703	0.788	0.792	-5.441	-30.886	-24.451	105.006	83.128
38.491	0.788	0.792	-5.441	-31.220	-24.715	104.114	82.422
39.279	0.267	0.268	-5.441	-31.443	-8.429	103.688	27.796
39.546	0.788	0.789	-1.858	-3.381	-2.666	101.219	79.811
40.334	0.788	0.789	-1.858	-3.409	-2.688	101.110	79.726
41.122	0.788	0.789	-1.858	-3.438	-2.711	101.053	79.680
41.910	0.788	0.789	-1.858	-3.466	-2.733	100.975	79.619
42.698	0.417	0.417	-1.858	-3.488	-1.454	100.918	42.073
43.115	0.788	0.788	-0.367	8.771	6.912	100.181	78.953
43.903	0.788	0.788	-0.367	8.834	6.962	100.173	78.947
44.691	0.788	0.788	-0.367	8.898	7.012	100.160	78.936
45.479	0.592	0.592	-0.367	8.953	5.300	100.152	59.287
46.071	0.788	0.788	1.600	25.598	20.181	99.406	78.371
46.859	0.641	0.641	1.600	25.735	16.498	99.468	63.766
47.500	0.788	0.788	1.600	25.874	20.399	99.505	78.449
48.288	0.451	0.452	1.600	25.994	11.737	99.552	44.948
48.739	0.788	0.790	3.821	45.092	35.616	99.117	78.286
49.527	0.788	0.790	3.821	45.302	35.781	99.263	78.402
50.316	0.788	0.790	3.821	45.511	35.947	99.399	78.510
51.104	0.111	0.112	3.821	45.631	5.089	99.455	11.092
51.215	0.788	0.793	6.134	65.524	51.936	99.361	78.756
52.003	0.788	0.793	6.134	65.742	52.108	99.571	78.923
52.791	0.788	0.793	6.134	65.959	52.281	99.832	79.129
53.579	0.192	0.193	6.134	66.094	12.743	99.947	19.270
53.771	0.788	0.797	8.340	84.911	67.632	100.147	79.768
54.559	0.788	0.797	8.340	85.087	67.773	100.448	80.008
55.347	0.653	0.660	8.340	85.249	56.256	100.766	66.496
56.000	0.213	0.215	8.340	85.348	18.355	100.970	21.715
56.213	0.788	0.801	10.486	103.293	82.786	101.440	81.302
57.001	0.788	0.801	10.486	103.407	82.878	101.770	81.566
57.789	0.788	0.801	10.486	103.521	82.969	102.114	81.842
58.577	0.225	0.229	10.486	103.594	23.682	102.236	23.372
58.802	0.788	0.807	12.382	118.998	96.014	103.631	83.615
59.590	0.788	0.807	12.382	119.004	96.019	104.031	83.938
60.378	0.788	0.807	12.382	119.010	96.024	104.265	84.127
61.166	0.409	0.418	12.382	119.014	49.782	104.261	43.611
61.575	0.788	0.812	13.894	130.884	106.257	105.370	85.544
62.363	0.788	0.812	13.894	130.779	106.172	105.362	85.537
63.151	0.788	0.812	13.894	130.674	106.086	105.415	85.580
63.939	0.788	0.812	13.894	130.569	106.001	105.800	85.893
64.727	0.059	0.061	13.894	130.513	7.987	105.334	6.446
64.786	0.214	0.222	16.111	147.251	32.739	106.155	23.602
65.000	0.788	0.820	16.111	147.069	120.641	106.836	87.638
65.788	0.788	0.820	16.111	146.787	120.409	107.345	88.055
66.576	0.788	0.820	16.111	146.504	120.178	107.903	88.513
67.364	0.118	0.123	16.111	146.342	18.028	108.071	13.313
67.483	0.788	0.833	18.891	165.743	138.056	109.728	91.398
68.271	0.788	0.833	18.891	165.150	137.562	110.883	92.361
69.059	0.788	0.833	18.891	164.557	137.068	113.341	94.408
69.847	0.153	0.162	18.891	164.203	26.549	113.986	18.430
70.000	0.788	0.850	21.973	183.500	155.941	116.576	99.069
70.788	0.788	0.850	21.973	182.484	155.078	116.154	98.709
71.576	0.767	0.827	21.973	181.481	150.109	117.313	97.033
72.343	0.788	0.869	24.922	197.045	171.233	120.395	104.624
73.131	0.788	0.869	24.922	195.551	169.934	119.674	103.997
73.919	0.788	0.869	24.922	194.057	168.636	122.257	106.242
74.707	0.161	0.177	24.922	193.157	34.274	122.999	21.825
74.868	0.788	0.890	27.717	205.722	183.141	124.721	111.031
75.656	0.788	0.890	27.717	203.713	181.354	123.298	109.765
76.444	0.779	0.880	27.717	201.717	177.427	126.676	111.422
77.223	0.788	0.913	30.376	210.403	192.200	127.804	116.747
78.011	0.788	0.913	30.376	207.855	189.873	126.330	115.400
78.799	0.788	0.913	30.376	205.308	187.546	124.935	114.126

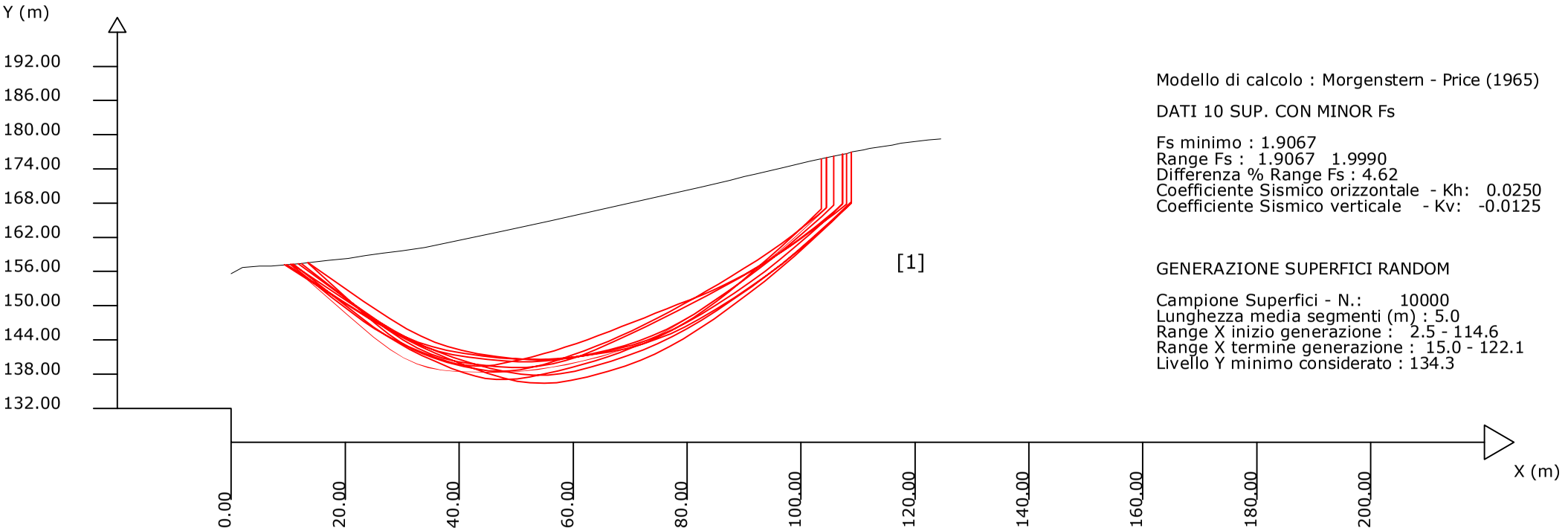
79.587	0.144	0.167	30.376	203.801	34.077	123.898	20.717
79.732	0.788	0.935	32.589	209.522	195.977	125.475	117.363
80.520	0.788	0.935	32.589	206.491	193.142	122.499	114.580
81.308	0.788	0.935	32.589	203.460	190.307	122.917	114.971
82.096	0.308	0.365	32.589	201.352	73.574	121.544	44.412
82.404	0.096	0.117	34.291	205.224	23.918	120.955	14.097
82.500	0.788	0.954	34.291	203.326	193.949	123.243	117.559
83.288	0.788	0.954	34.291	199.947	190.725	124.312	118.579
84.076	0.788	0.954	34.291	196.568	187.502	127.395	121.520
84.864	0.634	0.767	34.291	193.520	148.416	129.417	99.254
85.498	0.788	0.968	35.473	192.981	186.749	127.613	123.491
86.286	0.788	0.968	35.473	189.322	183.208	127.644	123.521
87.074	0.426	0.523	35.473	186.503	97.545	126.105	65.956
87.500	0.775	0.951	35.473	183.896	174.928	125.428	119.311
88.275	0.788	0.984	36.812	182.911	180.051	120.159	118.280
89.063	0.788	0.984	36.812	179.297	176.493	118.272	116.423
89.851	0.149	0.186	36.812	177.148	33.003	115.591	21.535
90.000	0.788	0.984	36.812	174.632	171.901	117.833	115.990
90.788	0.125	0.156	36.812	172.114	26.858	116.305	18.149
90.913	0.788	1.003	38.204	171.393	171.890	117.853	118.195
91.701	0.299	0.380	38.204	168.153	63.960	117.811	44.811
92.000	0.788	1.003	38.204	165.112	165.590	117.760	118.101
92.788	0.657	0.836	38.204	161.168	134.810	118.090	98.778
93.445	0.788	1.022	39.572	158.470	162.018	117.789	120.426
94.233	0.788	1.022	39.572	153.821	157.264	117.482	120.112
95.022	0.788	1.022	39.572	149.171	152.511	117.098	119.719
95.810	0.227	0.294	39.572	146.179	42.954	115.652	33.984
96.036	0.788	1.048	41.223	144.092	150.975	115.538	121.058
96.824	0.176	0.234	41.223	140.986	32.946	112.972	26.400
97.000	0.788	1.048	41.223	137.896	144.483	113.162	118.568
97.788	0.788	1.048	41.223	132.848	139.194	111.198	116.510
98.576	0.269	0.357	41.223	129.464	46.262	111.002	39.665
98.845	0.788	1.069	42.493	126.384	135.079	111.637	119.318
99.633	0.788	1.069	42.493	120.999	129.324	112.059	119.769
100.421	0.788	1.069	42.493	115.614	123.569	109.541	117.077
101.209	0.291	0.394	42.493	111.929	44.143	108.615	42.836
101.500	0.553	0.750	42.493	108.983	81.697	105.101	78.787
102.053	0.788	1.088	43.599	104.273	113.475	102.957	112.043
102.841	0.788	1.088	43.599	98.409	107.093	101.147	110.073
103.629	0.788	1.088	43.599	92.545	100.711	100.177	109.017

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 : 14/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Morgenstern - Price (1965)

DATI 10 SUP. CON MINOR Fs

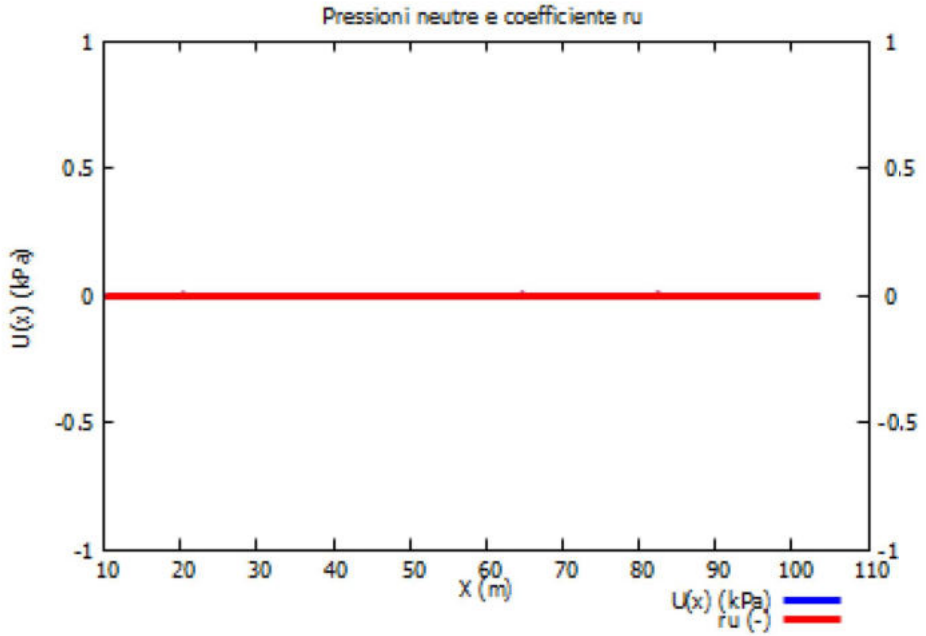
Fs minimo : 1.9067
Range Fs : 1.9067 1.9990
Differenza % Range Fs : 4.62
Coefficiente Sismico orizzontale - Kh: 0.0250
Coefficiente Sismico verticale - Kv: -0.0125

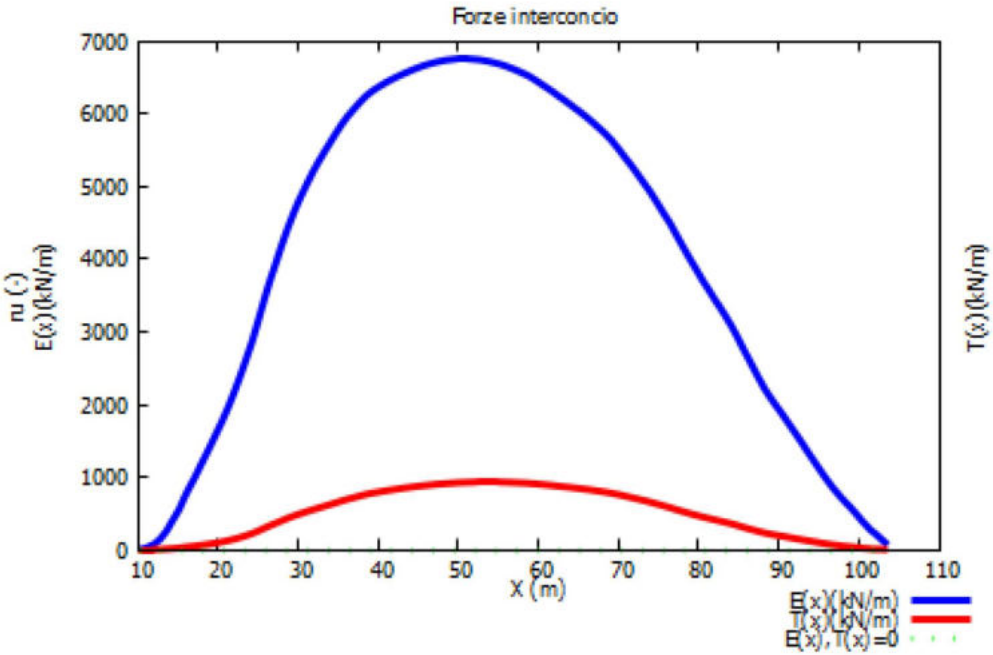
GENERAZIONE SUPERFICI RANDOM

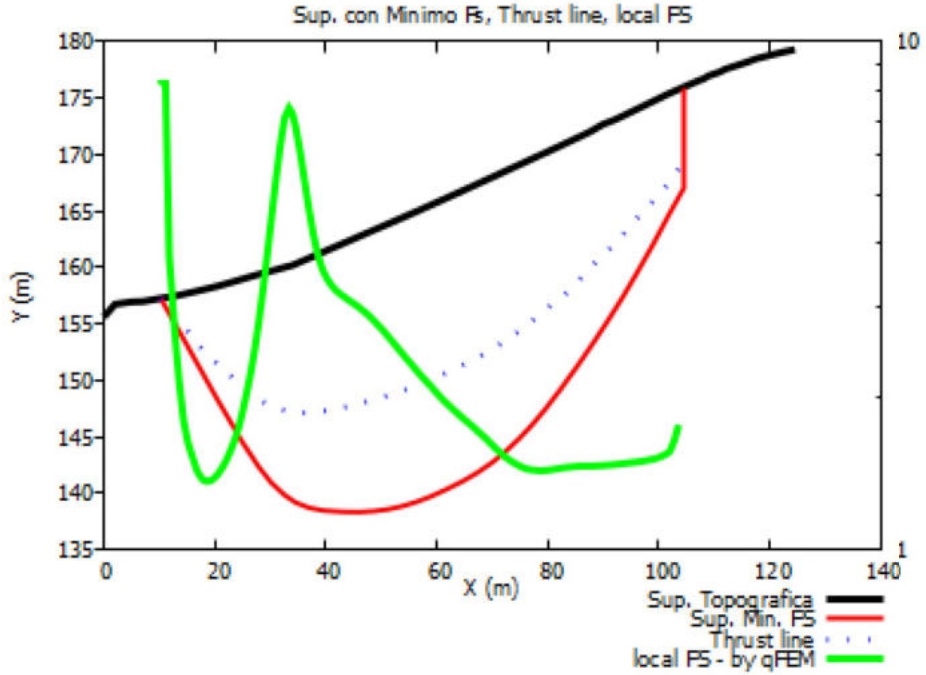
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 5.0
Range X inizio generazione : 2.5 - 114.6
Range X termine generazione : 15.0 - 122.1
Livello Y minimo considerato : 134.3

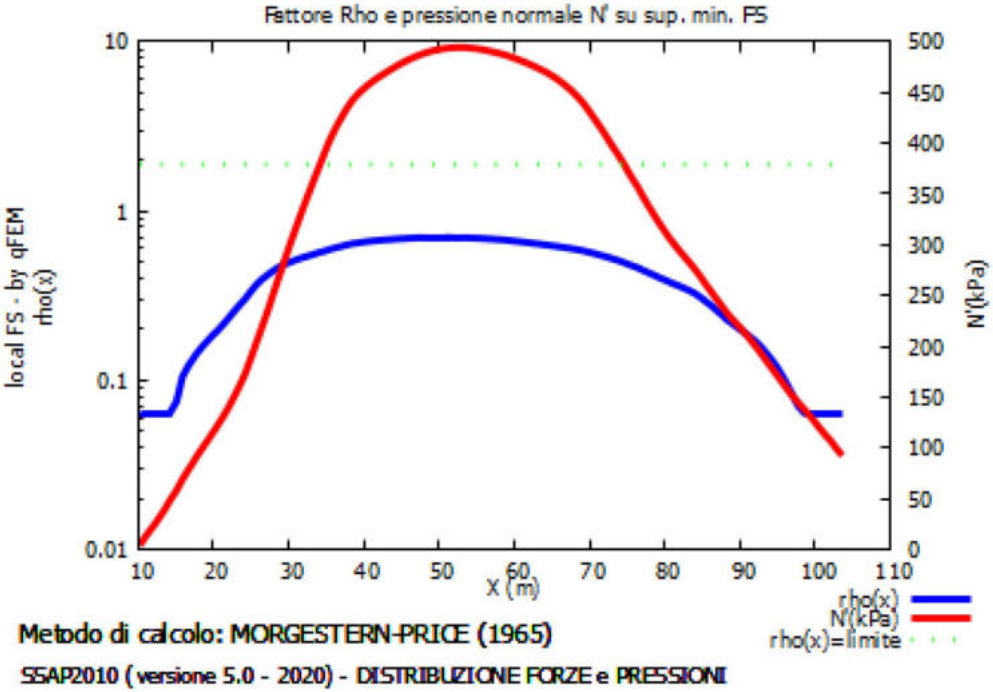
Parametri Geotecnici degli strati # ----------

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





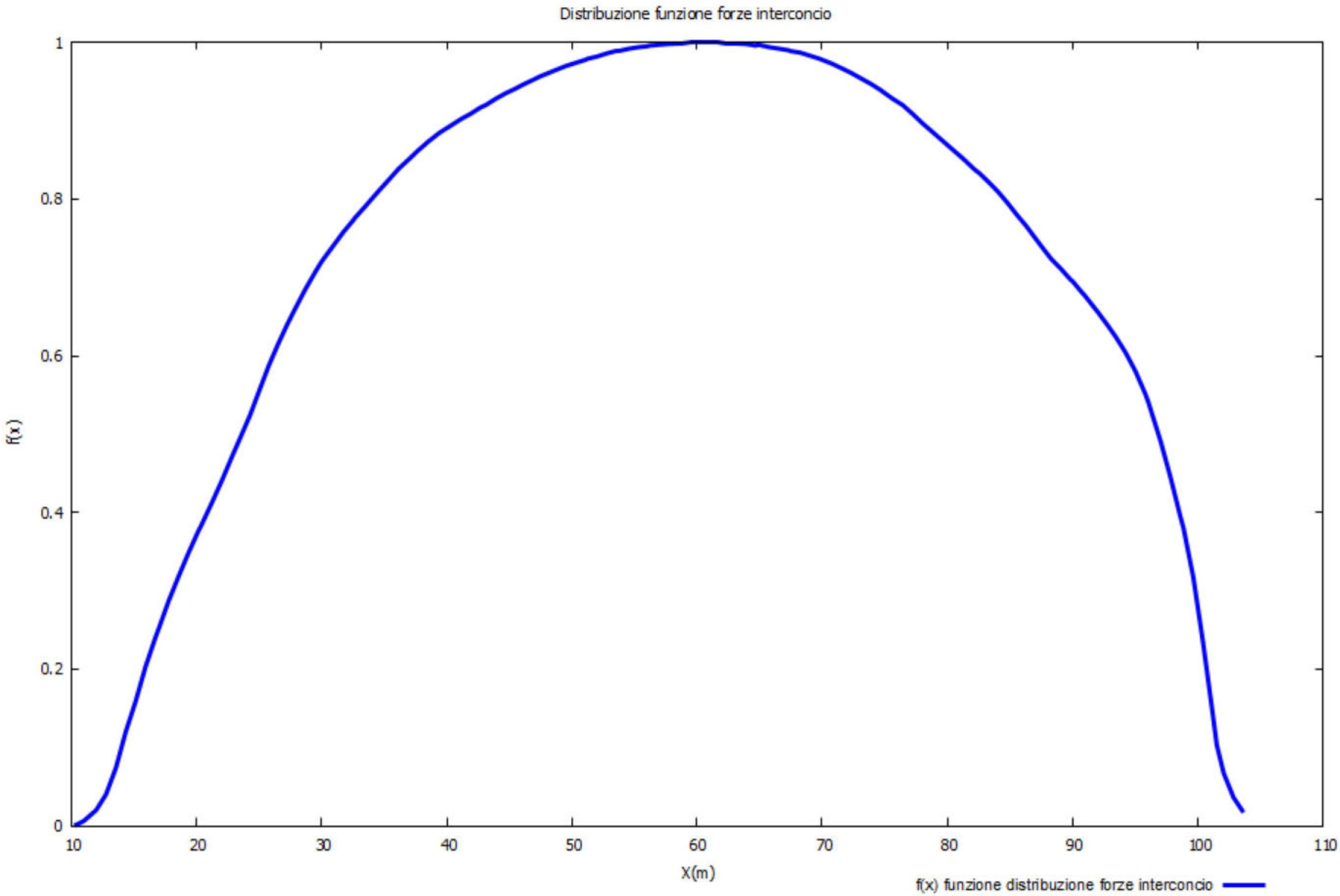


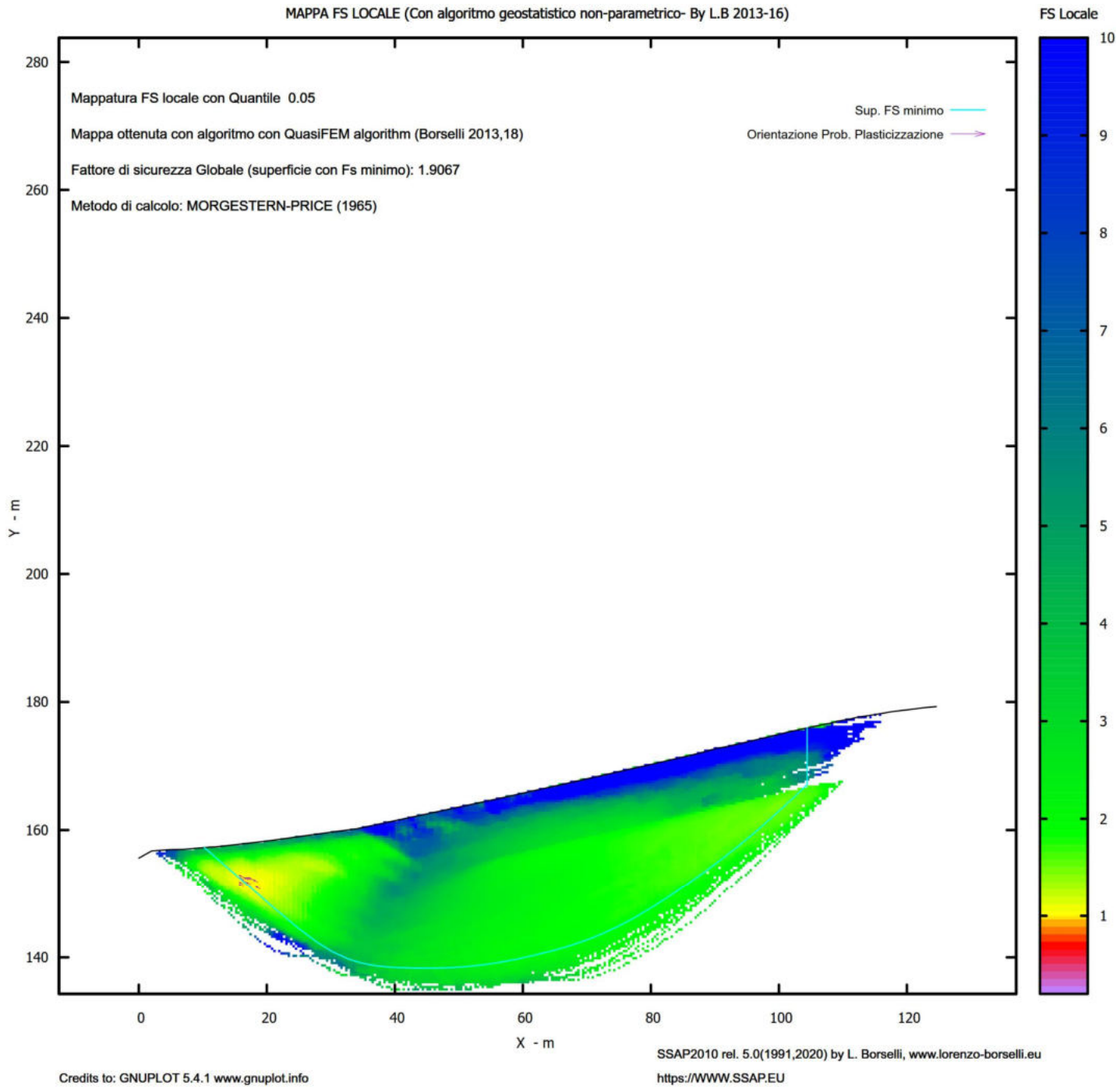


Metodo di calcolo: MORGESTERN-PRICE (1965)

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

14/11/21 12:03




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): 1.9067
Metodo di calcolo: MORGESTERN-PRICE (1965)
Sup. FS minimo
Orientazione Prob. Plasticizzazione
Y - m
X - m
280
260
240
220
200
180
160
140
0
20
40
60
80
100
120
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\MIADONNA\VERIFICA 2\NONDRENATA\BERSELLI\BERSELLI.txt
Data: 14/11/2021
Localita' :
Descrizione:
Modello pendio: VERIFICA2NONDRENATA.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	155.60	-	-	-	-	-	-
2.00	156.73	-	-	-	-	-	-
5.00	156.94	-	-	-	-	-	-
7.00	156.97	-	-	-	-	-	-
11.00	157.32	-	-	-	-	-	-
12.00	157.36	-	-	-	-	-	-
17.00	157.92	-	-	-	-	-	-
20.50	158.33	-	-	-	-	-	-
23.50	158.75	-	-	-	-	-	-
26.50	159.18	-	-	-	-	-	-
30.00	159.65	-	-	-	-	-	-
34.00	160.18	-	-	-	-	-	-
47.50	163.05	-	-	-	-	-	-
56.00	164.87	-	-	-	-	-	-
65.00	166.86	-	-	-	-	-	-
82.50	170.82	-	-	-	-	-	-
87.50	171.98	-	-	-	-	-	-
90.00	172.68	-	-	-	-	-	-
92.00	173.05	-	-	-	-	-	-
97.00	174.23	-	-	-	-	-	-
101.50	175.31	-	-	-	-	-	-
105.00	176.07	-	-	-	-	-	-
107.50	176.60	-	-	-	-	-	-
108.00	176.67	-	-	-	-	-	-
109.00	176.97	-	-	-	-	-	-
111.00	177.30	-	-	-	-	-	-
112.00	177.56	-	-	-	-	-	-
116.00	178.19	-	-	-	-	-	-
117.50	178.47	-	-	-	-	-	-
121.00	178.90	-	-	-	-	-	-
122.50	179.08	-	-	-	-	-	-
124.59	179.29	-	-	-	-	-	-

ASSENZA DI FALDA

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

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

LEGENDA: fi`_____ Angolo di attrito interno efficace(in gradi)
C` _____ Coesione efficace (in Kpa)
Cu _____ Resistenza al taglio Non drenata (in Kpa)
Gamm _____ Peso di volume terreno fuori falda (in KN/m^3)
Gamm_sat __ Peso di volume terreno immerso (in KN/m^3)
STR_IDX ___ Indice di resistenza (usato in solo in 'SNIFF SEARCH) (adimensionale)

---- SOLO Per AMMASSI ROCCIOSI FRATTURATI - Parametri Criterio di Rottura di Hoek (2002)-
sigci _____ Resistenza Compressione Uniassiale Roccia Intatta (in MPa)
GSI _____ Geological Strenght Index ammasso(adimensionale)
mi _____ Indice litologico ammasso(adimensionale)
D _____ Fattore di disturbo ammasso(adimensionale)
Fattore di riduzione NTC2018: gammaPHI=1.25 e gammaC=1.25 - DISATTIVATO (solo per ROCCE)
Uso CRITERIO DI ROTTURA Hoek et al.(2002,2006) - non-lineare - Generalizzato, secondo Lei et al.(2016)

---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
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): 5.0 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 2.49 114.62
LIVELLO MINIMO CONSIDERATO (Ymin): 134.28
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 14.95 122.10

*** 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 : 0.0250
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Negativo): -0.0125
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) 1.8113 - Min. - X Y Lambda= 0.1210
2.67 156.78
8.37 151.45
11.19 148.88
13.13 147.19
14.82 145.81
16.40 144.61
17.94 143.52
19.58 142.44
21.36 141.34
23.44 140.12
25.08 139.26
26.53 138.61
27.81 138.17
29.28 137.83
30.53 137.66
31.94 137.62
33.49 137.71
35.47 137.93
37.29 138.14
39.00 138.34
40.66 138.54
42.27 138.74
43.89 138.94
45.50 139.15
47.12 139.36
48.76 139.58
50.38 139.80
51.99 140.02
53.60 140.25
55.20 140.49
56.82 140.73
58.46 140.99
60.12 141.25
61.83 141.52
63.43 141.81
65.00 142.13

66.54 142.47
68.12 142.87
69.67 143.28
71.26 143.75
72.91 144.27
74.70 144.87
76.34 145.45
77.93 146.06
79.47 146.68
81.05 147.37
82.60 148.09
84.21 148.88
85.89 149.74
87.74 150.74
89.37 151.69
90.93 152.67
92.41 153.68
93.97 154.85
95.45 156.03
96.99 157.35
98.59 158.79
100.34 160.46
102.04 162.08
103.69 163.66
105.32 165.23
106.93 166.79
108.00 167.83
108.00 176.67

Fattore di sicurezza (FS) 1.8396 - N.2 -- X Y Lambda= 0.1177
9.10 157.15
19.63 149.10
24.49 145.55
27.66 143.48
30.21 142.08
32.80 140.99
35.05 140.27
37.59 139.72
40.44 139.33
44.15 139.03
47.20 138.88
49.96 138.86
52.50 138.97
55.18 139.21
57.69 139.57
60.38 140.07
63.26 140.73
66.64 141.63
69.55 142.49
72.28 143.41
74.85 144.39
77.56 145.55
80.13 146.76
82.84 148.17
85.71 149.77
88.98 151.70
91.86 153.51
94.60 155.36
97.21 157.26
99.93 159.37
102.85 161.82
106.21 164.82
109.83 168.22
109.83 177.11

Fattore di sicurezza (FS) 1.8777 - N.3 -- X Y Lambda= 0.1235
11.02 157.32
19.65 149.68
23.60 146.32
26.14 144.39
28.16 143.11
30.23 142.10
31.98 141.46

33.99 140.97
36.24 140.64
39.22 140.39
41.75 140.23
44.05 140.15
46.20 140.15
48.41 140.22
50.52 140.35
52.74 140.57
55.07 140.86
57.68 141.25
60.01 141.66
62.22 142.12
64.34 142.63
66.55 143.23
68.68 143.89
70.90 144.65
73.25 145.52
75.88 146.56
78.20 147.56
80.40 148.60
82.49 149.69
84.68 150.94
86.77 152.23
88.95 153.66
91.21 155.26
93.71 157.11
96.08 158.89
98.37 160.66
100.61 162.42
102.86 164.23
105.36 166.28
106.98 167.65
106.98 176.49

Fattore di sicurezza (FS) 1.9151 - N.4 -- X Y Lambda= 0.1126
10.62 157.29
17.34 151.06
20.61 148.12
22.85 146.23
24.76 144.73
26.57 143.45
28.29 142.35
30.14 141.28
32.14 140.24
34.52 139.09
36.46 138.25
38.22 137.59
39.81 137.12
41.58 136.72
43.16 136.49
44.90 136.36
46.81 136.33
49.18 136.41
51.19 136.53
53.06 136.71
54.81 136.94
56.63 137.25
58.36 137.62
60.18 138.07
62.10 138.61
64.28 139.29
66.22 139.94
68.06 140.63
69.83 141.34
71.66 142.14
73.43 142.98
75.28 143.91
77.21 144.96
79.36 146.18
81.28 147.33
83.11 148.51
84.86 149.73
86.69 151.08

88.44 152.46
90.25 153.96
92.11 155.59
94.13 157.44
96.09 159.24
98.00 161.02
99.88 162.78
101.75 164.54
103.85 166.54
104.64 167.30
104.64 175.99

Fattore di sicurezza (FS) 1.9174 - N.5 -- X Y Lambda= 0.1161
3.93 156.87
14.65 147.66
19.58 143.61
22.78 141.26
25.33 139.67
27.93 138.42
30.17 137.60
32.75 136.95
35.68 136.48
39.59 136.07
42.68 135.87
45.43 135.84
47.90 135.98
50.58 136.30
53.03 136.75
55.70 137.42
58.62 138.31
62.16 139.53
65.15 140.67
67.93 141.86
70.52 143.11
73.26 144.58
75.83 146.09
78.52 147.82
81.34 149.76
84.49 152.06
87.47 154.26
90.34 156.43
93.16 158.60
95.96 160.80
99.09 163.31
102.59 166.17
103.43 166.87
103.43 175.73

Fattore di sicurezza (FS) 1.9251 - N.6 -- X Y Lambda= 0.0999
4.20 156.88
14.92 149.01
19.95 145.48
23.28 143.36
26.02 141.85
28.74 140.64
31.17 139.76
33.86 139.02
36.80 138.42
40.50 137.85
43.61 137.46
46.46 137.21
49.11 137.09
51.90 137.09
54.56 137.21
57.41 137.46
60.52 137.85
64.23 138.43
67.18 139.04
69.86 139.79
72.27 140.67
74.98 141.90
77.42 143.22
80.08 144.89

82.96 146.90
86.40 149.49
89.54 151.92
92.51 154.27
95.38 156.61
98.24 159.02
101.39 161.76
104.95 164.93
108.00 167.72
108.00 176.67

Fattore di sicurezza (FS) 1.9251 - N.7 -- X Y Lambda= 0.1162
5.89 156.95
10.52 152.80
12.89 150.70
14.56 149.24
16.05 147.97
17.39 146.85
18.75 145.74
20.15 144.62
21.63 143.46
23.24 142.22
24.58 141.27
25.81 140.48
26.94 139.87
28.20 139.30
29.31 138.91
30.55 138.58
31.91 138.33
33.64 138.10
35.11 137.94
36.46 137.84
37.73 137.78
39.04 137.78
40.29 137.82
41.58 137.90
42.92 138.04
44.40 138.22
45.82 138.41
47.19 138.60
48.55 138.79
49.89 138.99
51.24 139.19
52.58 139.41
53.94 139.64
55.33 139.87
56.69 140.11
58.04 140.36
59.38 140.61
60.73 140.87
62.09 141.13
63.48 141.42
64.92 141.72
66.44 142.04
67.77 142.37
69.04 142.76
70.23 143.18
71.53 143.72
72.74 144.28
74.02 144.95
75.37 145.72
76.91 146.66
78.34 147.55
79.71 148.44
81.05 149.32
82.39 150.22
83.71 151.14
85.06 152.10
86.43 153.10
87.86 154.16
89.22 155.20
90.56 156.25
91.89 157.31
93.22 158.41

94.54 159.52
95.88 160.67
97.23 161.87
98.64 163.13
100.01 164.38
101.37 165.62
102.31 166.49
102.31 175.49

Fattore di sicurezza (FS) 1.9396 - N.8 -- X Y Lambda= 0.1162
2.92 156.79
9.08 151.69
12.16 149.18
14.31 147.50
16.20 146.10
17.93 144.87
19.65 143.72
21.47 142.56
23.42 141.38
25.65 140.08
27.42 139.15
29.01 138.45
30.41 137.97
32.02 137.58
33.40 137.39
34.96 137.33
36.67 137.41
38.89 137.64
40.86 137.86
42.70 138.09
44.47 138.34
46.22 138.60
47.94 138.88
49.69 139.19
51.48 139.53
53.35 139.90
55.13 140.28
56.89 140.67
58.61 141.08
60.36 141.52
62.11 141.97
63.89 142.46
65.74 142.99
67.72 143.58
69.48 144.16
71.16 144.79
72.77 145.46
74.48 146.26
76.10 147.09
77.80 148.03
79.58 149.09
81.57 150.36
83.41 151.56
85.18 152.76
86.90 153.97
88.64 155.24
90.34 156.53
92.07 157.88
93.83 159.30
95.67 160.82
97.48 162.33
99.26 163.82
101.04 165.32
102.34 166.42
102.34 175.49

Fattore di sicurezza (FS) 1.9473 - N.9 -- X Y Lambda= 0.1015
2.58 156.77
13.27 149.56
18.31 146.31
21.67 144.35
24.45 142.95
27.19 141.83

29.66 141.00
32.37 140.31
35.32 139.74
38.95 139.21
42.05 138.85
44.92 138.61
47.62 138.48
50.43 138.47
53.12 138.55
55.99 138.75
59.09 139.08
62.71 139.55
65.66 140.08
68.37 140.73
70.85 141.51
73.59 142.57
76.10 143.73
78.82 145.18
81.76 146.94
85.28 149.21
88.38 151.31
91.28 153.41
94.04 155.53
96.88 157.84
99.93 160.50
103.44 163.73
107.50 167.64
107.50 176.60

Fattore di sicurezza (FS) 1.9664 - N.10 -- X Y Lambda= 0.1257
10.09 157.24
18.44 149.44
22.27 146.01
24.73 144.04
26.68 142.71
28.69 141.67
30.38 141.00
32.34 140.47
34.55 140.09
37.53 139.76
39.96 139.57
42.14 139.49
44.15 139.51
46.25 139.63
48.22 139.84
50.32 140.17
52.54 140.60
55.12 141.19
57.42 141.77
59.60 142.38
61.68 143.02
63.83 143.75
65.90 144.52
68.05 145.38
70.30 146.34
72.77 147.46
75.01 148.54
77.16 149.64
79.23 150.77
81.38 152.03
83.44 153.30
85.57 154.69
87.77 156.20
90.15 157.90
92.41 159.55
94.61 161.19
96.78 162.83
98.95 164.52
101.31 166.40
101.31 175.26

---------- 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	1.811	13347.8	7369.0	5241.9	Surplus
2	1.840	12802.7	6959.4	5147.3	Surplus
3	1.878	12161.4	6476.9	5036.8	Surplus
4	1.915	12810.9	6689.4	5452.6	Surplus
5	1.917	13225.6	6897.5	5638.3	Surplus
6	1.925	13373.2	6946.7	5731.8	Surplus
7	1.925	12580.9	6535.1	5392.3	Surplus
8	1.940	12758.8	6578.2	5522.8	Surplus
9	1.947	13156.1	6756.1	5724.4	Surplus
10	1.966	11758.5	5979.6	5180.9	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 5036.8

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 (m)	dx (m)	alpha (°)	W (kN/m)	ru (-)	U (kPa)	phi' (°)	(c',Cu) (kPa)
2.672	0.862	-43.06	7.37	0.00	0.00	0.00	100.00
3.534	0.862	-43.06	22.11	0.00	0.00	0.00	100.00
4.396	0.604	-43.06	24.26	0.00	0.00	0.00	100.00
5.000	0.862	-43.06	46.78	0.00	0.00	0.00	100.00
5.862	0.862	-43.06	60.71	0.00	0.00	0.00	100.00
6.724	0.276	-43.06	22.38	0.00	0.00	0.00	100.00
7.000	0.862	-43.06	79.64	0.00	0.00	0.00	100.00
7.862	0.508	-43.06	53.93	0.00	0.00	0.00	100.00
8.370	0.862	-42.38	103.31	0.00	0.00	0.00	100.00
9.232	0.862	-42.38	117.99	0.00	0.00	0.00	100.00
10.094	0.862	-42.38	132.67	0.00	0.00	0.00	100.00
10.956	0.044	-42.38	7.19	0.00	0.00	0.00	100.00
11.000	0.186	-42.38	30.71	0.00	0.00	0.00	100.00
11.186	0.814	-40.99	141.70	0.00	0.00	0.00	100.00
12.000	0.862	-40.99	163.57	0.00	0.00	0.00	100.00
12.862	0.271	-40.99	54.36	0.00	0.00	0.00	100.00
13.133	0.862	-39.35	182.13	0.00	0.00	0.00	100.00
13.995	0.826	-39.35	187.38	0.00	0.00	0.00	100.00
14.821	0.862	-37.19	208.47	0.00	0.00	0.00	100.00
15.683	0.715	-37.19	182.60	0.00	0.00	0.00	100.00
16.398	0.602	-35.33	160.38	0.00	0.00	0.00	100.00
17.000	0.862	-35.33	239.93	0.00	0.00	0.00	100.00
17.862	0.075	-35.33	21.39	0.00	0.00	0.00	100.00
17.937	0.862	-33.45	252.75	0.00	0.00	0.00	100.00
18.799	0.778	-33.45	238.02	0.00	0.00	0.00	100.00
19.577	0.862	-31.69	274.15	0.00	0.00	0.00	100.00
20.439	0.061	-31.69	19.73	0.00	0.00	0.00	100.00
20.500	0.859	-31.69	284.86	0.00	0.00	0.00	100.00
21.359	0.862	-30.25	296.68	0.00	0.00	0.00	100.00
22.221	0.862	-30.25	307.30	0.00	0.00	0.00	100.00
23.083	0.361	-30.25	131.66	0.00	0.00	0.00	100.00
23.444	0.056	-27.81	20.75	0.00	0.00	0.00	100.00
23.500	0.862	-27.81	322.60	0.00	0.00	0.00	100.00
24.362	0.718	-27.81	276.06	0.00	0.00	0.00	100.00
25.080	0.862	-24.03	340.05	0.00	0.00	0.00	100.00
25.942	0.558	-24.03	224.87	0.00	0.00	0.00	100.00
26.500	0.034	-24.03	13.86	0.00	0.00	0.00	100.00
26.534	0.862	-18.82	353.80	0.00	0.00	0.00	100.00
27.396	0.417	-18.82	173.86	0.00	0.00	0.00	100.00
27.814	0.862	-13.24	363.37	0.00	0.00	0.00	100.00
28.676	0.609	-13.24	259.96	0.00	0.00	0.00	100.00
29.285	0.715	-7.58	308.34	0.00	0.00	0.00	100.00
30.000	0.531	-7.58	230.49	0.00	0.00	0.00	100.00

30.531	0.862	-1.57	376.74	0.00	0.00	0.00	100.00
31.393	0.546	-1.57	239.96	0.00	0.00	0.00	100.00
31.939	0.862	3.19	379.97	0.00	0.00	0.00	100.00
32.801	0.685	3.19	302.61	0.00	0.00	0.00	100.00
33.486	0.514	6.43	227.59	0.00	0.00	0.00	100.00
34.000	0.862	6.43	382.33	0.00	0.00	0.00	100.00
34.862	0.608	6.43	270.47	0.00	0.00	0.00	100.00
35.470	0.862	6.56	384.82	0.00	0.00	0.00	100.00
36.332	0.862	6.56	386.25	0.00	0.00	0.00	100.00
37.194	0.100	6.56	44.74	0.00	0.00	0.00	100.00
37.294	0.862	6.70	387.83	0.00	0.00	0.00	100.00
38.156	0.847	6.70	382.47	0.00	0.00	0.00	100.00
39.003	0.862	6.85	390.58	0.00	0.00	0.00	100.00
39.865	0.799	6.85	363.09	0.00	0.00	0.00	100.00
40.663	0.862	7.00	393.18	0.00	0.00	0.00	100.00
41.525	0.748	7.00	342.04	0.00	0.00	0.00	100.00
42.273	0.862	7.15	395.62	0.00	0.00	0.00	100.00
43.135	0.752	7.15	345.94	0.00	0.00	0.00	100.00
43.887	0.862	7.29	397.99	0.00	0.00	0.00	100.00
44.749	0.752	7.29	348.43	0.00	0.00	0.00	100.00
45.501	0.862	7.44	400.30	0.00	0.00	0.00	100.00
46.363	0.762	7.44	354.74	0.00	0.00	0.00	100.00
47.125	0.375	7.58	175.07	0.00	0.00	0.00	100.00
47.500	0.862	7.58	403.07	0.00	0.00	0.00	100.00
48.362	0.393	7.58	184.26	0.00	0.00	0.00	100.00
48.755	0.862	7.77	404.78	0.00	0.00	0.00	100.00
49.617	0.758	7.77	357.07	0.00	0.00	0.00	100.00
50.376	0.862	7.97	406.89	0.00	0.00	0.00	100.00
51.238	0.749	7.97	354.49	0.00	0.00	0.00	100.00
51.987	0.862	8.16	408.90	0.00	0.00	0.00	100.00
52.849	0.747	8.16	355.20	0.00	0.00	0.00	100.00
53.596	0.862	8.36	410.81	0.00	0.00	0.00	100.00
54.458	0.746	8.36	356.50	0.00	0.00	0.00	100.00
55.204	0.796	8.56	380.81	0.00	0.00	0.00	100.00
56.000	0.824	8.56	395.46	0.00	0.00	0.00	100.00
56.824	0.862	8.76	414.50	0.00	0.00	0.00	100.00
57.686	0.771	8.76	371.63	0.00	0.00	0.00	100.00
58.458	0.862	8.95	416.34	0.00	0.00	0.00	100.00
59.320	0.803	8.95	388.77	0.00	0.00	0.00	100.00
60.123	0.862	9.14	418.12	0.00	0.00	0.00	100.00
60.985	0.847	9.14	411.75	0.00	0.00	0.00	100.00
61.832	0.862	10.23	419.73	0.00	0.00	0.00	100.00
62.694	0.741	10.23	361.08	0.00	0.00	0.00	100.00
63.435	0.862	11.42	420.68	0.00	0.00	0.00	100.00
64.297	0.703	11.42	343.51	0.00	0.00	0.00	100.00
65.000	0.004	11.42	2.04	0.00	0.00	0.00	100.00
65.004	0.862	12.66	421.07	0.00	0.00	0.00	100.00
65.866	0.672	12.66	328.37	0.00	0.00	0.00	100.00
66.538	0.862	13.88	420.94	0.00	0.00	0.00	100.00
67.400	0.723	13.88	352.98	0.00	0.00	0.00	100.00
68.124	0.862	15.12	420.21	0.00	0.00	0.00	100.00
68.986	0.684	15.12	333.02	0.00	0.00	0.00	100.00
69.670	0.862	16.33	418.89	0.00	0.00	0.00	100.00
70.532	0.731	16.33	354.26	0.00	0.00	0.00	100.00
71.263	0.862	17.45	416.92	0.00	0.00	0.00	100.00
72.125	0.788	17.45	380.05	0.00	0.00	0.00	100.00
72.913	0.862	18.44	414.31	0.00	0.00	0.00	100.00
73.775	0.862	18.44	412.73	0.00	0.00	0.00	100.00
74.637	0.066	18.44	31.33	0.00	0.00	0.00	100.00
74.702	0.862	19.59	410.88	0.00	0.00	0.00	100.00
75.564	0.781	19.59	370.37	0.00	0.00	0.00	100.00
76.345	0.862	20.87	407.06	0.00	0.00	0.00	100.00
77.207	0.725	20.87	340.54	0.00	0.00	0.00	100.00
77.932	0.862	22.22	402.67	0.00	0.00	0.00	100.00
78.794	0.676	22.22	314.00	0.00	0.00	0.00	100.00
79.470	0.862	23.53	397.71	0.00	0.00	0.00	100.00
80.332	0.722	23.53	330.71	0.00	0.00	0.00	100.00
81.054	0.862	24.85	391.86	0.00	0.00	0.00	100.00
81.916	0.584	24.85	263.50	0.00	0.00	0.00	100.00
82.500	0.103	24.85	46.17	0.00	0.00	0.00	100.00
82.603	0.862	26.11	385.47	0.00	0.00	0.00	100.00
83.465	0.743	26.11	329.14	0.00	0.00	0.00	100.00
84.208	0.862	27.27	378.23	0.00	0.00	0.00	100.00
85.070	0.820	27.27	355.81	0.00	0.00	0.00	100.00
85.889	0.862	28.26	369.95	0.00	0.00	0.00	100.00

86.751	0.749	28.26	317.66	0.00	0.00	0.00	100.00
87.500	0.243	28.26	102.33	0.00	0.00	0.00	100.00
87.743	0.862	30.12	360.55	0.00	0.00	0.00	100.00
88.605	0.766	30.12	316.49	0.00	0.00	0.00	100.00
89.370	0.630	32.26	257.51	0.00	0.00	0.00	100.00
90.000	0.862	32.26	347.39	0.00	0.00	0.00	100.00
90.862	0.063	32.26	25.13	0.00	0.00	0.00	100.00
90.925	0.862	34.52	339.95	0.00	0.00	0.00	100.00
91.787	0.213	34.52	82.84	0.00	0.00	0.00	100.00
92.000	0.405	34.52	156.45	0.00	0.00	0.00	100.00
92.405	0.862	36.65	327.60	0.00	0.00	0.00	100.00
93.267	0.703	36.65	261.50	0.00	0.00	0.00	100.00
93.970	0.862	38.63	313.66	0.00	0.00	0.00	100.00
94.832	0.620	38.63	220.39	0.00	0.00	0.00	100.00
95.452	0.862	40.53	299.04	0.00	0.00	0.00	100.00
96.314	0.678	40.53	228.82	0.00	0.00	0.00	100.00
96.992	0.008	42.18	2.81	0.00	0.00	0.00	100.00
97.000	0.862	42.18	282.37	0.00	0.00	0.00	100.00
97.862	0.724	42.18	229.69	0.00	0.00	0.00	100.00
98.586	0.862	43.54	264.05	0.00	0.00	0.00	100.00
99.448	0.862	43.54	253.63	0.00	0.00	0.00	100.00
100.310	0.029	43.54	8.21	0.00	0.00	0.00	100.00
100.339	0.862	43.65	242.83	0.00	0.00	0.00	100.00
101.201	0.299	43.65	81.81	0.00	0.00	0.00	100.00
101.500	0.536	43.65	143.45	0.00	0.00	0.00	100.00
102.036	0.862	43.77	221.79	0.00	0.00	0.00	100.00
102.898	0.791	43.77	193.84	0.00	0.00	0.00	100.00
103.689	0.862	43.89	200.92	0.00	0.00	0.00	100.00
104.551	0.449	43.89	100.34	0.00	0.00	0.00	100.00
105.000	0.323	43.89	70.29	0.00	0.00	0.00	100.00
105.323	0.862	44.01	180.10	0.00	0.00	0.00	100.00
106.185	0.748	44.01	147.37	0.00	0.00	0.00	100.00
106.933	0.567	44.17	106.06	0.00	0.00	0.00	100.00
107.500	0.500	44.17	89.37	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 (--)		
2.672	0.000	156.777	-0.710	0.0000000000E+000	0.0000000000E+000	4.1155227264E-001	0.060	7.458	8.317		
3.534	0.217	156.189	-0.710	1.6570832175E+001	1.2766297186E-002	3.8034616227E+001	0.060	7.458	8.317		
4.396	0.387	155.553	-0.715	6.5573789735E+001	3.6772174696E-001	8.07856461 99E+001	0.060	3.140	3.497		
5.000	0.540	155.142	-0.685	1.2444908133E+002	1.3803973056E+000	1.1244471901E+002	0.060	2.388	2.659		
5.862	0.752	154.548	-0.628	2.3972126728E+002	4.4673950242E+000	1.3882898745E+002	0.060	1.865	2.075		
6.724	1.068	154.059	-0.597	3.6379796230E+002	8.9768739550E+000	1.9662280734E+002	0.060	1.653	1.836		
7.000	1.136	153.869	-0.684	4.2270893119E+002	1.1509257978E+001	2.1733009064E+002	0.060	1.605	1.782		
7.862	1.354	153.281	-0.662	6.2039859282E+002	2.0612333489E+001	2.3121320638E+002	0.073	1.502	1.663		
8.370	1.510	152.962	-0.571	7.3836176748E+002	2.6638487422E+001	2.2393072499E+002	0.086	1.468	1.621		
9.232	1.832	152.498	-0.527	9.1911597700E+002	3.6511172713E+001	2.0443849414E+002	0.102	1.431	1.573		
10.094	2.174	152.053	-0.509	1.0908250801E+003	4.6098594903E+001	2.0657469689E+002	0.113	1.391	1.523		
10.956	2.528	151.621	-0.500	1.2752622217E+003	5.7436798023E+001	2.1146244931E+002	0.127	1.375	1.496		
11.000	2.548	151.600	-0.466	1.2845887438E+003	5.8042716415E+001	2.1163734862E+002	0.127	1.375	1.495		
11.186	2.631	151.514	-0.479	1.3242035773E+003	6.0646610382E+001	2.1739885044E+002	0.130	1.374	1.492		
12.000	2.946	151.121	-0.488	1.5171247030E+003	7.4356276301E+001	2.4839260909E+002	0.147	1.385	1.489		
12.862	3.270	150.696	-0.493	1.7416272918E+003	9.1537259592E+001	2.6705784160E+002	0.165	1.409	1.496		
13.133	3.372	150.563	-0.463	1.8145134100E+003	9.7308439359E+001	2.6835963288E+002	0.171	1.419	1.500		
13.995	3.688	150.172	-0.464	2.0437102046E+003	1.1681624559E+002	2.8415485964E+002	0.191	1.460	1.517		
14.821	3.972	149.779	-0.460	2.2929287970E+003	1.3971166165E+002	3.0095804023E+002	0.213	1.517	1.542		
15.683	4.243	149.395	-0.438	2.5517245105E+003	1.6488684020E+002	3.0277632137E+002	0.237	1.589	1.573		
16.398	4.478	149.088	-0.421	2.7697239834E+003	1.8705364936E+002	3.0465334047E+002	0.256	1.660	1.603		
17.000	4.657	148.841	-0.407	2.9529943517E+003	2.0636136734E+002	3.1268354868E+002	0.272	1.728	1.630		
17.862	4.920	148.492	-0.398	3.2327039515E+003	2.3766425137E+002	2.8194767274E+002	0.298	1.857	1.682		

17.937	4.948	148.468	-0.336	3.2535197885E+003	2.4007084964E+002	2.7956056296E+002	0.300	1.868	1.686
18.799	5.228	148.178	-0.325	3.5074597113E+003	2.7008140088E+002	2.9113134775E+002	0.322	2.021	1.743
19.577	5.498	147.934	-0.298	3.7316353547E+003	2.9725387697E+002	2.8490328973E+002	0.341	2.190	1.801
20.439	5.786	147.689	-0.283	3.9742605919E+003	3.2800417119E+002	2.8167013787E+002	0.362	2.427	1.875
20.500	5.807	147.673	-0.270	3.9913750762E+003	3.3023080931E+002	2.8198054688E+002	0.363	2.447	1.881
21.359	6.105	147.440	-0.265	4.2372077464E+003	3.6252117220E+002	2.8787006569E+002	0.384	2.778	1.973
22.221	6.383	147.216	-0.248	4.4868398941E+003	3.9627387577E+002	2.8286253044E+002	0.405	3.219	2.080
23.083	6.682	147.012	-0.231	4.7248784510E+003	4.2944240524E+002	2.6777285177E+002	0.424	3.775	2.198
23.444	6.814	146.934	-0.214	4.8201497431E+003	4.4305159391E+002	2.4299758332E+002	0.431	4.043	2.249
23.500	6.833	146.923	-0.201	4.8336589675E+003	4.4500706708E+002	2.4089240514E+002	0.432	4.084	2.257
24.362	7.114	146.749	-0.185	5.0574192103E+003	4.7833362506E+002	2.4295506158E+002	0.450	4.811	2.389
25.080	7.373	146.630	-0.158	5.2218323952E+003	5.0407749180E+002	2.2732496701E+002	0.463	5.419	2.497
25.942	7.628	146.500	-0.142	5.4159333580E+003	5.3632814715E+002	2.1174919517E+002	0.480	6.068	2.633
26.500	7.806	146.429	-0.127	5.5293127358E+003	5.5604752729E+002	2.0938521097E+002	0.490	6.361	2.717
26.534	7.817	146.425	-0.101	5.5364687300E+003	5.5733829249E+002	2.0879099032E+002	0.491	6.372	2.722
27.396	8.025	146.339	-0.093	5.6950872101E+003	5.8747412027E+002	1.7680245555E+002	0.507	6.309	2.840
27.814	8.133	146.306	-0.067	5.7674448827E+003	6.0232950326E+002	1.6898644892E+002	0.515	6.131	2.893
28.676	8.284	146.253	-0.052	5.9054142049E+003	6.3281639183E+002	1.5372068953E+002	0.533	5.634	2.992
29.285	8.403	146.229	-0.028	5.9962992147E+003	6.5478196935E+002	1.4090638977E+002	0.546	5.232	3.055
30.000	8.486	146.217	-0.004	6.0900907471E+003	6.7962657043E+002	1.1167467986E+002	0.562	4.782	3.114
30.531	8.564	146.225	0.030	6.1417081432E+003	6.9576942816E+002	9.3039141843E+001	0.571	4.470	3.140
31.393	8.622	146.259	0.049	6.2160026934E+003	7.2231149667E+002	7.5509108789E+001	0.589	4.044	3.171
31.939	8.672	146.294	0.076	6.2535553622E+003	7.3807685657E+002	6.5130025737E+001	0.600	3.831	3.180
32.801	8.696	146.366	0.090	6.3047842950E+003	7.6261508971E+002	4.5019846497E+001	0.618	3.556	3.189
33.486	8.725	146.433	0.106	6.3277734198E+003	7.7788982799E+002	2.8701704258E+001	0.629	3.432	3.185
34.000	8.726	146.492	0.121	6.3406507872E+003	7.8869663555E+002	2.0581514082E+001	0.637	3.357	3.181
34.862	8.736	146.599	0.129	6.3519477503E+003	8.0373993337E+002	9.3381056583E+000	0.647	3.271	3.171
35.470	8.750	146.681	0.141	6.3560092383E+003	8.1319774014E+002	4.2747695208E+000	0.653	3.223	3.163
36.332	8.776	146.807	0.146	6.3567513943E+003	8.2477295005E+002	-1.5763969425E+000	0.660	3.167	3.154
37.194	8.804	146.934	0.147	6.3532914424E+003	8.3385530324E+002	-5.5364522544E+000	0.665	3.120	3.148
37.294	8.807	146.948	0.157	6.3527222502E+003	8.3475135735E+002	-5.8635460361E+000	0.665	3.114	3.147
38.156	8.843	147.085	0.161	6.3465409566E+003	8.4215827997E+002	-8.1063827555E+000	0.668	3.064	3.142
39.003	8.881	147.223	0.169	6.3388953053E+003	8.4791994687E+002	-9.7860497000E+000	0.671	3.013	3.136
39.865	8.929	147.374	0.173	6.3297926215E+003	8.5294691975E+002	-1.0783005404E+001	0.672	2.958	3.128
40.663	8.970	147.511	0.180	6.3210152421E+003	8.5634123406E+002	-1.1857025539E+001	0.673	2.911	3.118
41.525	9.025	147.672	0.186	6.3099874442E+003	8.5933936536E+002	-1.3024029762E+001	0.673	2.859	3.099
42.273	9.071	147.810	0.190	6.3001011128E+003	8.6123129034E+002	-1.3956027246E+001	0.672	2.816	3.079
43.135	9.132	147.979	0.193	6.2873435006E+003	8.6291999946E+002	-1.4889073924E+001	0.672	2.768	3.046
43.887	9.179	148.121	0.180	6.2760956061E+003	8.6393480253E+002	-1.4740648445E+001	0.670	2.730	3.014
44.749	9.218	148.270	0.171	6.2636127044E+003	8.6455577407E+002	-1.4657355764E+001	0.669	2.692	2.974
45.501	9.249	148.397	0.167	6.2524675214E+003	8.6490772739E+002	-1.4977156081E+001	0.667	2.663	2.937
46.363	9.280	148.540	0.164	6.2393931292E+003	8.6517416194E+002	-1.5325588927E+001	0.666	2.631	2.891
47.125	9.303	148.663	0.161	6.2276118405E+003	8.6535490786E+002	-1.5723090073E+001	0.664	2.605	2.850
47.500	9.313	148.723	0.161	6.2216649179E+003	8.6543639325E+002	-1.6039117297E+001	0.663	2.593	2.829
48.362	9.337	148.862	0.161	6.2074639254E+003	8.6563926727E+002	-1.6792187003E+001	0.661	2.565	2.778
48.755	9.348	148.925	0.164	6.2008036774E+003	8.6573822039E+002	-1.7330089465E+001	0.660	2.552	2.754
49.617	9.374	149.068	0.169	6.1851225121E+003	8.6597705037E+002	-1.8977500501E+001	0.659	2.524	2.697
50.376	9.401	149.199	0.175	6.1702047001E+003	8.6619646233E+002	-2.0266213787E+001	0.657	2.498	2.644
51.238	9.433	149.352	0.180	6.1521499693E+003	8.6642720053E+002	-2.1715608925E+001	0.656	2.467	2.581
51.987	9.465	149.488	0.186	6.1353799193E+003	8.6657387239E+002	-2.3138097699E+001	0.654	2.439	2.523
52.849	9.505	149.652	0.193	6.1146879586E+003	8.6663847069E+002	-2.4876975259E+001	0.653	2.406	2.454
53.596	9.544	149.798	0.192	6.0955386413E+003	8.6655448514E+002	-2.5627227056E+001	0.651	2.377	2.392
54.458	9.580	149.961	0.190	6.0734536543E+003	8.6622648930E+002	-2.6228825191E+001	0.649	2.344	2.323
55.204	9.614	150.104	0.188	6.0534830008E+003	8.6570851751E+002	-2.6726327408E+001	0.648	2.316	2.265
56.000	9.641	150.251	0.185	6.0322438882E+003	8.6488384436E+002	-2.7086880602E+001	0.646	2.287	2.205
56.824	9.669	150.404	0.188	6.0095789729E+003	8.6371113560E+002	-2.8390059276E+001	0.643	2.256	2.145
57.686	9.701	150.568	0.191	5.9842977009E+003	8.6205527097E+002	-2.9991280186E+001	0.641	2.222	2.084
58.458	9.730	150.716	0.204	5.9607130861E+003	8.6020879972E+002	-3.3361732920E+001	0.638	2.191	2.032
59.320	9.780	150.901	0.208	5.9292784426E+003	8.5726527775E+002	-3.7192718030E+001	0.634	2.151	1.971
60.123	9.813	151.062	0.192	5.8988613258E+003	8.5410841448E+002	-3.8743704610E+001	0.631	2.112	1.919
60.985	9.834	151.221	0.185	5.8646547720E+003	8.5028249268E+002	-4.0369774119E+001	0.626	2.070	1.868
61.832	9.855	151.378	0.191	5.8298844310E+003	8.4615706052E+002	-4.1683114876E+001	0.622	2.028	1.823
62.694	9.869	151.547	0.197	5.7933936595E+003	8.4163854019E+002	-4.3692995925E+001	0.618	1.986	1.784
63.435	9.881	151.693	0.204	5.7601681288E+003	8.3735871949E+002	-4.5735976366E+001	0.614	1.950	1.753
64.297	9.887	151.874	0.210	5.7198664028E+003	8.3199374835E+002	-4.7957593827E+001	0.610	1.910	1.721
65.000	9.893	152.021	0.210	5.6854382697E+003	8.2724898149E+002	-5.1758246376E+001	0.606	1.879	1.698
65.004	9.893	152.022	0.225	5.6852223961E+003	8.2721837679E+002	-5.1783250845E+001	0.606	1.878	1.698
65.866	9.893	152.216	0.223	5.6391031673E+003	8.2063501764E+002	-5.6145114067E+001	0.601	1.839	1.671
66.538	9.889	152.364	0.217	5.5999751518E+003	8.1488756513E+002	-6.0821399140E+001	0.597	1.808	1.650
67.400	9.862	152.549	0.221	5.5446555337E+003	8.0651748966E+002	-6.7639890914E+001	0.591	1.769	1.624
68.124	9.848	152.714	0.245	5.4936254150E+003	7.9857977953E+002	-7.6765086171E+001	0.586	1.736	1.603
68.986	9.839	152.938	0.265	5.4210652002E+003	7.8700122173E+002	-8.7692391908E+001	0.578	1.696	1.576
69.670	9.840	153.124	0.276	5.3591645128E+003	7.7696429414E+002	-9.2796049104E+001	0.571	1.665	1.554
70.532	9.829	153.365	0.274	5.2766610550E+003	7.6343812778E+002	-9.8419144315E+001	0.563	1.627	1.529
71.263	9.811	153.561	0.274	5.2030762702E+003	7.5127570075E+002	-9.8988465668E+001	0.555	1.597	1.508

72.125	9.780	153.802	0.276	5.1195029964E+003	7.3732434421E+002	-9.7281504551E+001	0.546	1.567	1.487
72.913	9.747	154.016	0.268	5.0425931204E+003	7.2441988603E+002	-9.8544081027E+001	0.538	1.542	1.471
73.775	9.688	154.245	0.261	4.9567410490E+003	7.0994951500E+002	-9.9196337259E+001	0.529	1.517	1.454
74.637	9.623	154.467	0.257	4.8715731285E+003	6.9555165888E+002	-9.6503308318E+001	0.521	1.494	1.440
74.702	9.617	154.483	0.266	4.8652571876E+003	6.9448049327E+002	-9.6917216790E+001	0.520	1.493	1.439
75.564	9.541	154.714	0.278	4.7750414791E+003	6.7912854332E+002	-1.0984241449E+002	0.511	1.470	1.426
76.345	9.488	154.939	0.304	4.6856436991E+003	6.6384297296E+002	-1.2096291673E+002	0.502	1.450	1.415
77.207	9.434	155.213	0.318	4.5752543039E+003	6.4493097714E+002	-1.2850202175E+002	0.490	1.427	1.403
77.932	9.387	155.443	0.319	4.4818336259E+003	6.2893702148E+002	-1.2987115920E+002	0.480	1.408	1.394
78.794	9.311	155.719	0.320	4.3688604811E+003	6.0965230293E+002	-1.3150009019E+002	0.468	1.388	1.384
79.470	9.251	155.935	0.323	4.2797042807E+003	5.9448720245E+002	-1.3302619062E+002	0.459	1.373	1.377
80.332	9.156	156.215	0.329	4.1637385243E+003	5.7483170148E+002	-1.3701321614E+002	0.447	1.354	1.368
81.054	9.083	156.457	0.330	4.0633208737E+003	5.5784485854E+002	-1.3778379034E+002	0.437	1.339	1.361
81.916	8.965	156.738	0.323	3.9458977017E+003	5.3803607945E+002	-1.3380950969E+002	0.425	1.324	1.353
82.500	8.880	156.924	0.320	3.8687049323E+003	5.2504128681E+002	-1.3762493120E+002	0.418	1.315	1.349
82.603	8.867	156.958	0.331	3.8544731024E+003	5.2264297329E+002	-1.3847409227E+002	0.416	1.314	1.348
83.465	8.730	157.243	0.341	3.7358905979E+003	5.0268714883E+002	-1.4206224415E+002	0.404	1.300	1.341
84.208	8.628	157.506	0.369	3.6274803310E+003	4.8444278011E+002	-1.5123438958E+002	0.393	1.288	1.335
85.070	8.514	157.836	0.397	3.4918159423E+003	4.6171080344E+002	-1.6270753950E+002	0.379	1.275	1.329
85.889	8.428	158.173	0.424	3.3542853685E+003	4.3884546571E+002	-1.7220966618E+002	0.364	1.262	1.323
86.751	8.341	158.549	0.429	3.2018161329E+003	4.1385328187E+002	-1.7291419167E+002	0.347	1.250	1.319
87.500	8.253	158.863	0.418	3.0749378023E+003	3.9333032188E+002	-1.6602582050E+002	0.333	1.240	1.316
87.743	8.222	158.963	0.420	3.0348940915E+003	3.8694876463E+002	-1.6575142882E+002	0.329	1.237	1.316
88.605	8.086	159.327	0.412	2.8894266147E+003	3.6404159480E+002	-1.6322793807E+002	0.313	1.227	1.314
89.370	7.948	159.634	0.390	2.7682284648E+003	3.4545441248E+002	-1.5301407539E+002	0.301	1.221	1.315
90.000	7.789	159.872	0.388	2.6746348490E+003	3.3139487295E+002	-1.5059400174E+002	0.291	1.217	1.316
90.862	7.586	160.213	0.398	2.5425204714E+003	3.1196257257E+002	-1.6204589991E+002	0.280	1.213	1.320
90.925	7.573	160.240	0.428	2.5322709595E+003	3.1047378645E+002	-1.6266375683E+002	0.279	1.213	1.320
91.787	7.349	160.609	0.428	2.3923364012E+003	2.9027998453E+002	-1.6181051136E+002	0.266	1.211	1.326
92.000	7.294	160.700	0.442	2.3579073345E+003	2.8534886445E+002	-1.6329089636E+002	0.263	1.211	1.327
92.405	7.197	160.882	0.461	2.2905097967E+003	2.7573097947E+002	-1.6789861910E+002	0.257	1.211	1.330
93.267	6.959	161.285	0.478	2.1429407963E+003	2.5483082559E+002	-1.7400179056E+002	0.243	1.212	1.338
93.970	6.781	161.630	0.517	2.0190728268E+003	2.3738417593E+002	-1.8062512541E+002	0.230	1.214	1.345
94.832	6.556	162.093	0.557	1.8587894538E+003	2.1505293014E+002	-1.9186797398E+002	0.214	1.219	1.355
95.452	6.422	162.455	0.599	1.7372419072E+003	1.9825731706E+002	-1.9750130280E+002	0.201	1.224	1.364
96.314	6.210	162.981	0.603	1.5653477098E+003	1.7470085482E+002	-1.9367796222E+002	0.183	1.233	1.377
96.992	6.034	163.384	0.595	1.4370892465E+003	1.5730786344E+002	-1.9065689618E+002	0.169	1.241	1.387
97.000	6.031	163.389	0.586	1.4354824736E+003	1.5709129414E+002	-1.9056698067E+002	0.169	1.241	1.387
97.862	5.755	163.894	0.579	1.2807647307E+003	1.3649801574E+002	-1.7378169120E+002	0.152	1.252	1.401
98.586	5.512	164.307	0.571	1.1583678025E+003	1.2046524773E+002	-1.6477068957E+002	0.138	1.262	1.413
99.448	5.186	164.800	0.564	1.0206629401E+003	1.0291740265E+002	-1.5467022706E+002	0.123	1.276	1.429
100.310	4.845	165.279	0.555	8.9170774507E+002	8.6818774359E+001	-1.4658968779E+002	0.108	1.291	1.446
100.339	4.834	165.294	0.550	8.8752917673E+002	8.6301596396E+001	-1.4626687927E+002	0.107	1.292	1.447
101.201	4.486	165.769	0.553	7.6726172212E+002	7.1783882286E+001	-1.3639897093E+002	0.093	1.309	1.467
101.500	4.369	165.937	0.568	7.2678939789E+002	6.7046698616E+001	-1.3810412453E+002	0.088	1.315	1.473
102.036	4.163	166.243	0.583	6.5004761241E+002	5.7867029454E+001	-1.4319532436E+002	0.079	1.327	1.486
102.898	3.847	166.753	0.585	5.2647883481E+002	4.3282802801E+001	-1.3622946628E+002	0.062	1.347	1.509
103.689	3.547	167.210	0.621	4.2394133004E+002	3.1536924918E+001	-1.3418313481E+002	0.060	1.370	1.535
104.551	3.287	167.780	0.629	3.0406000895E+002	1.8181211907E+001	-1.2050519156E+002	0.060	1.402	1.571
105.000	3.110	168.035	0.512	2.5428372781E+002	1.3005203478E+001	-9.1079582612E+001	0.060	1.416	1.587
105.323	2.940	168.175	0.545	2.2946566003E+002	1.0787075671E+001	-8.0304794652E+001	0.060	1.429	1.601
106.185	2.612	168.680	0.681	1.5235851015E+002	5.6729823166E+000	-9.5383113825E+001	0.060	1.496	1.676
106.933	2.480	169.271	0.758	7.7124695561E+001	2.2802350054E+000	-8.6117046547E+001	0.060	1.594	1.786
107.500	2.335	169.677	0.758	3.4501638536E+001	9.2906130026E-001	-7.1905801154E+001	0.060	1.664	1.864

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)
2.672	0.862	1.180	-43.062	-4.152	-4.899	100.013	118.003

3.534	0.862	1.180	-43.062	-12.455	-14.696	100.372	118.426
4.396	0.604	0.826	-43.062	-19.514	-16.120	101.516	83.862
5.000	0.862	1.180	-43.062	-26.345	-31.084	103.236	121.805
5.862	0.862	1.180	-43.062	-34.194	-40.345	104.727	123.565
6.724	0.276	0.378	-43.062	-39.375	-14.872	108.292	40.901
7.000	0.862	1.180	-43.062	-44.855	-52.923	109.542	129.246
7.862	0.508	0.695	-43.062	-51.567	-35.838	110.724	76.951
8.370	0.862	1.167	-42.382	-58.040	-67.733	110.329	128.754
9.232	0.862	1.167	-42.382	-66.285	-77.355	110.031	128.406
10.094	0.862	1.167	-42.382	-74.530	-86.977	111.862	130.544
10.956	0.044	0.060	-42.382	-78.864	-4.712	112.383	6.714
11.000	0.186	0.252	-42.382	-79.923	-20.131	112.622	28.368
11.186	0.814	1.078	-40.992	-83.716	-90.274	115.106	124.123
12.000	0.862	1.142	-40.992	-91.245	-104.207	117.874	134.618
12.862	0.271	0.359	-40.992	-96.523	-34.631	119.112	42.735
13.133	0.862	1.115	-39.347	-100.432	-111.952	120.098	133.874
13.995	0.826	1.068	-39.347	-107.816	-115.180	124.612	133.123
14.821	0.862	1.082	-37.193	-112.617	-121.865	125.473	135.778
15.683	0.715	0.898	-37.193	-118.932	-106.747	127.042	114.026
16.398	0.602	0.738	-35.325	-121.252	-89.463	127.407	94.004
17.000	0.862	1.057	-35.325	-126.672	-133.836	131.030	138.441
17.862	0.075	0.092	-35.325	-130.149	-11.933	127.490	11.689
17.937	0.862	1.033	-33.448	-129.739	-134.038	129.001	133.275
18.799	0.778	0.933	-33.448	-135.314	-126.227	129.081	120.413
19.577	0.862	1.013	-31.691	-136.404	-138.189	128.883	130.569
20.439	0.061	0.071	-31.691	-139.275	-9.945	129.673	9.259
20.500	0.859	1.010	-31.691	-142.220	-143.588	130.433	131.688
21.359	0.862	0.998	-30.248	-143.347	-143.044	130.863	130.586
22.221	0.862	0.998	-30.248	-148.475	-148.161	130.328	130.053
23.083	0.361	0.417	-30.248	-152.111	-63.478	129.756	54.149
23.444	0.056	0.064	-27.814	-144.734	-9.224	125.933	8.026
23.500	0.862	0.975	-27.814	-147.126	-143.393	128.900	125.629
24.362	0.718	0.811	-27.814	-151.240	-122.703	126.818	102.889
25.080	0.862	0.944	-24.033	-138.500	-130.723	125.206	118.175
25.942	0.558	0.611	-24.033	-141.402	-86.447	123.794	75.682
26.500	0.034	0.037	-24.033	-142.611	-5.327	125.492	4.687
26.534	0.862	0.911	-18.823	-116.148	-105.781	119.338	108.686
27.396	0.417	0.441	-18.823	-117.848	-51.981	119.683	52.790
27.814	0.862	0.886	-13.237	-83.973	-74.363	114.279	101.200
28.676	0.609	0.626	-13.237	-85.042	-53.200	114.563	71.668
29.285	0.715	0.722	-7.583	-45.790	-33.046	108.228	78.108
30.000	0.531	0.535	-7.583	-46.138	-24.703	107.207	57.399
30.531	0.862	0.862	-1.569	-1.045	-0.901	101.527	87.552
31.393	0.546	0.546	-1.569	-1.051	-0.574	101.431	55.430
31.939	0.862	0.863	3.191	35.487	30.638	97.134	83.862
32.801	0.685	0.686	3.191	35.581	24.400	97.754	67.037
33.486	0.514	0.517	6.428	60.164	31.134	95.765	49.558
34.000	0.862	0.867	6.428	60.293	52.303	96.483	83.698
34.862	0.608	0.612	6.428	60.490	37.001	96.864	59.250
35.470	0.862	0.868	6.555	61.643	53.487	97.242	84.377
36.332	0.862	0.868	6.555	61.872	53.687	97.836	84.892
37.194	0.100	0.100	6.555	62.000	6.218	98.153	9.844
37.294	0.862	0.868	6.699	63.216	54.868	98.197	85.230
38.156	0.847	0.853	6.699	63.442	54.109	98.573	84.073
39.003	0.862	0.868	6.847	64.795	56.257	98.750	85.736
39.865	0.799	0.804	6.847	65.012	52.296	99.089	79.708
40.663	0.862	0.869	7.004	66.433	57.697	99.238	86.189
41.525	0.748	0.753	7.004	66.640	50.193	99.445	74.902
42.273	0.862	0.869	7.148	67.962	59.044	99.562	86.497
43.135	0.752	0.757	7.148	68.168	51.630	99.698	75.511
43.887	0.862	0.869	7.293	69.488	60.389	99.836	86.763
44.749	0.752	0.759	7.293	69.691	52.869	99.893	75.780
45.501	0.862	0.869	7.436	71.007	61.729	99.928	86.871
46.363	0.762	0.768	7.436	71.208	54.704	99.945	76.781
47.125	0.375	0.379	7.578	72.456	27.425	99.949	37.831
47.500	0.862	0.870	7.578	72.609	63.143	99.944	86.914
48.362	0.393	0.397	7.578	72.765	28.865	99.940	39.646
48.755	0.862	0.870	7.771	74.432	64.757	99.933	86.943
49.617	0.758	0.765	7.771	74.629	57.125	99.930	76.492
50.376	0.862	0.870	7.966	76.358	66.464	99.933	86.985
51.238	0.749	0.756	7.966	76.549	57.905	99.951	75.607
51.987	0.862	0.871	8.163	78.287	68.177	99.981	87.068
52.849	0.747	0.755	8.163	78.473	59.222	100.029	75.490
53.596	0.862	0.871	8.359	80.210	69.886	100.099	87.215
54.458	0.746	0.754	8.359	80.390	60.647	100.181	75.577

55.204	0.796	0.805	8.560	82.147	66.095	100.276	80.682
56.000	0.824	0.834	8.560	82.331	68.637	100.379	83.682
56.824	0.862	0.872	8.757	84.096	73.348	100.524	87.676
57.686	0.771	0.780	8.757	84.285	65.760	100.653	78.531
58.458	0.862	0.873	8.951	86.016	75.062	100.951	88.095
59.320	0.803	0.813	8.951	86.202	70.091	101.094	82.200
60.123	0.862	0.873	9.138	87.872	76.722	101.260	88.411
60.985	0.847	0.858	9.138	88.057	75.552	101.383	86.986
61.832	0.862	0.876	10.230	96.888	84.869	101.659	89.049
62.694	0.741	0.753	10.230	97.016	73.011	101.829	76.633
63.435	0.862	0.879	11.418	106.423	93.592	102.188	89.867
64.297	0.703	0.718	11.418	106.488	76.422	102.371	73.468
65.000	0.004	0.004	11.418	106.517	0.453	102.580	0.436
65.004	0.862	0.884	12.663	116.099	102.576	102.959	90.966
65.866	0.672	0.689	12.663	116.105	79.994	103.312	71.180
66.538	0.862	0.888	13.884	125.259	111.226	104.097	92.435
67.400	0.723	0.745	13.884	125.175	93.269	104.630	77.961
68.124	0.862	0.893	15.117	134.086	119.729	106.125	94.762
68.986	0.684	0.709	15.117	133.902	94.886	106.691	75.604
69.670	0.862	0.898	16.329	142.297	127.820	107.668	96.714
70.532	0.731	0.761	16.329	141.990	108.100	108.135	82.326
71.263	0.862	0.904	17.454	149.394	134.998	108.388	97.943
72.125	0.788	0.826	17.454	148.950	123.059	108.486	89.628
72.913	0.862	0.909	18.444	155.062	140.906	109.126	99.163
73.775	0.862	0.909	18.444	154.473	140.371	109.080	99.122
74.637	0.066	0.069	18.444	154.156	10.655	108.881	7.526
74.702	0.862	0.915	19.594	161.164	147.467	110.192	100.827
75.564	0.781	0.828	19.594	160.452	132.931	111.207	92.133
76.345	0.862	0.923	20.874	167.519	154.550	113.230	104.464
77.207	0.725	0.776	20.874	166.657	129.294	113.305	87.903
77.932	0.862	0.931	22.215	173.512	161.565	114.183	106.321
78.794	0.676	0.730	22.215	172.484	125.985	114.219	83.427
79.470	0.862	0.940	23.534	178.592	167.919	115.120	108.240
80.332	0.722	0.787	23.534	177.326	139.631	115.603	91.029
81.054	0.862	0.950	24.847	182.689	173.547	115.871	110.073
81.916	0.584	0.644	24.847	181.330	116.700	115.368	74.248
82.500	0.103	0.113	24.847	180.687	20.449	116.129	13.142
82.603	0.862	0.960	26.113	185.743	178.317	116.572	111.912
83.465	0.743	0.827	26.113	184.043	152.257	117.582	97.274
84.208	0.862	0.970	27.271	187.365	181.712	119.454	115.849
85.070	0.820	0.922	27.271	185.355	170.942	120.577	111.201
85.889	0.862	0.979	28.259	187.300	183.306	121.900	119.301
86.751	0.749	0.850	28.259	185.180	157.394	120.708	102.596
87.500	0.243	0.276	28.259	183.924	50.705	119.852	33.041
87.743	0.862	0.997	30.119	189.369	188.722	120.892	120.480
88.605	0.766	0.885	30.119	187.185	165.658	119.090	105.394
89.370	0.630	0.745	32.264	191.924	142.908	118.257	88.055
90.000	0.862	1.019	32.264	189.116	192.791	118.431	120.733
90.862	0.063	0.075	32.264	187.203	13.948	119.322	8.890
90.925	0.862	1.046	34.520	190.827	199.652	119.812	125.353
91.787	0.213	0.258	34.520	188.245	48.652	119.585	30.907
92.000	0.405	0.492	34.520	186.858	91.884	120.077	59.046
92.405	0.862	1.074	36.646	188.109	202.105	121.031	130.036
93.267	0.703	0.876	36.646	184.225	161.329	121.539	106.434
93.970	0.862	1.104	38.632	183.006	201.949	122.884	135.604
94.832	0.620	0.793	38.632	178.861	141.896	123.941	98.326
95.452	0.862	1.134	40.535	176.359	200.031	124.449	141.153
96.314	0.678	0.892	40.535	171.572	153.058	122.952	109.684
96.992	0.008	0.011	42.179	170.412	1.938	123.163	1.401
97.000	0.862	1.163	42.179	167.485	194.827	121.531	141.371
97.862	0.724	0.977	42.179	162.150	158.479	119.951	117.235
98.586	0.862	1.189	43.541	156.984	186.685	118.412	140.815
99.448	0.862	1.189	43.541	150.786	179.314	116.892	139.007
100.310	0.029	0.039	43.541	147.585	5.808	116.399	4.580
100.339	0.862	1.191	43.654	144.381	172.020	115.236	137.296
101.201	0.299	0.413	43.654	140.184	57.950	114.329	47.262
101.500	0.536	0.741	43.654	137.103	101.621	115.486	85.598
102.036	0.862	1.194	43.772	131.881	157.438	115.308	137.654
102.898	0.791	1.095	43.772	125.683	137.600	113.444	124.200
103.689	0.862	1.196	43.892	119.476	142.916	114.021	136.391
104.551	0.449	0.623	43.892	114.532	71.377	110.430	68.820
105.000	0.323	0.448	43.892	111.613	49.997	106.218	47.581
105.323	0.862	1.199	44.015	107.101	128.378	105.370	126.302
106.185	0.748	1.041	44.015	100.953	105.048	104.104	108.327
106.933	0.567	0.790	44.172	95.920	75.802	102.158	80.732

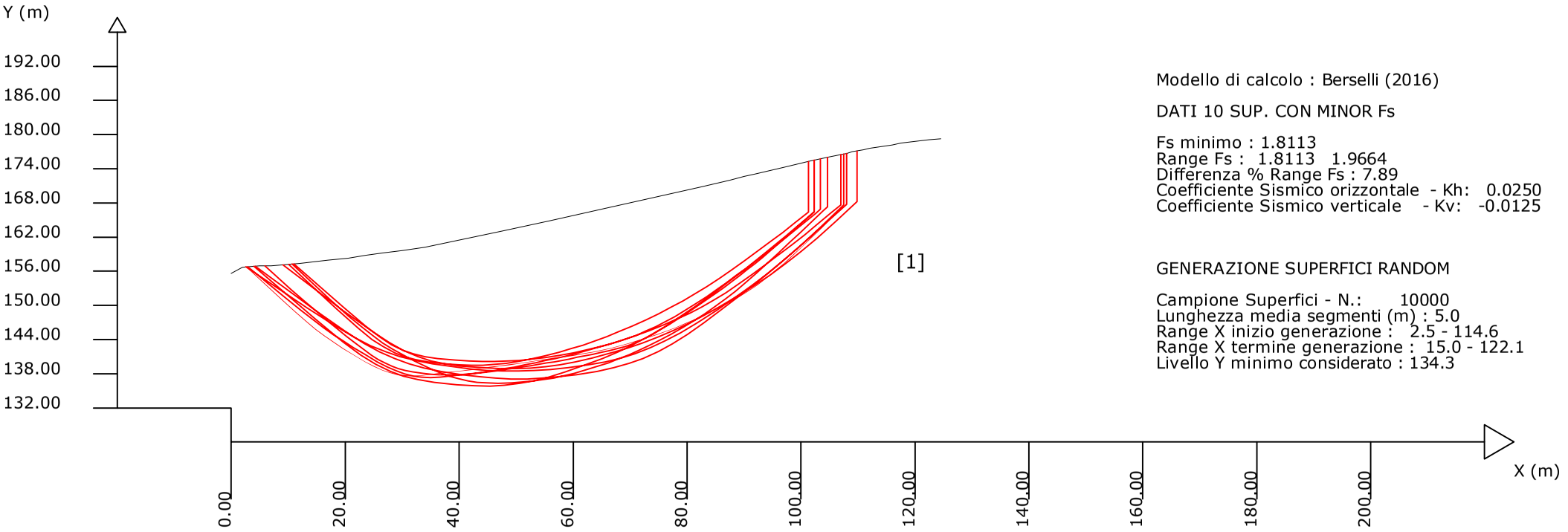
107.500	0.500	0.697	44.172	91.636	63.879	101.682	70.883

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 : 14/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Berselli (2016)

DATI 10 SUP. CON MINOR Fs

Fs minimo : 1.8113
Range Fs : 1.8113 1.9664
Differenza % Range Fs : 7.89
Coefficiente Sismico orizzontale - Kh: 0.0250
Coefficiente Sismico verticale - Kv: -0.0125

GENERAZIONE SUPERFICI RANDOM

Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 5.0
Range X inizio generazione : 2.5 - 114.6
Range X termine generazione : 15.0 - 122.1
Livello Y minimo considerato : 134.3

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

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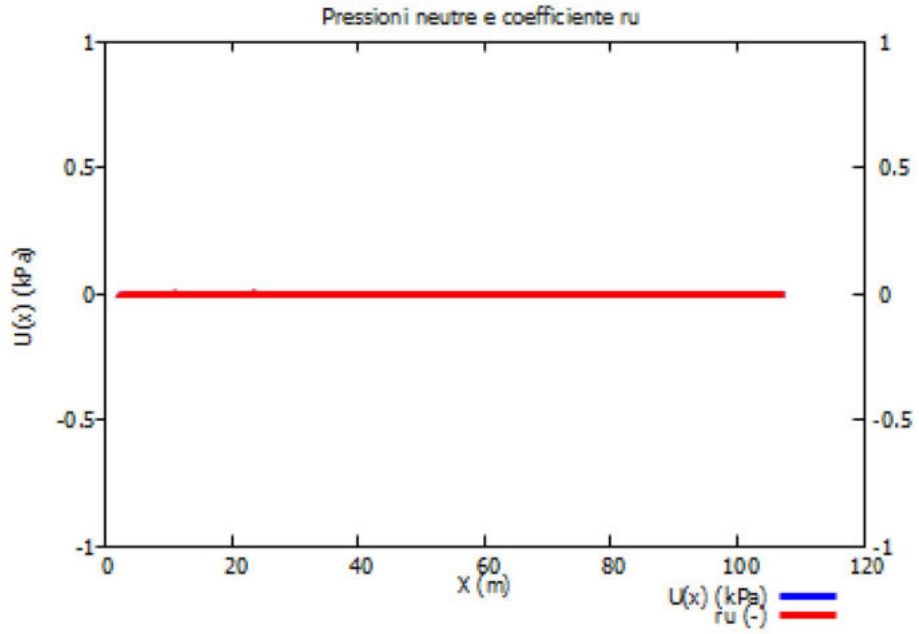
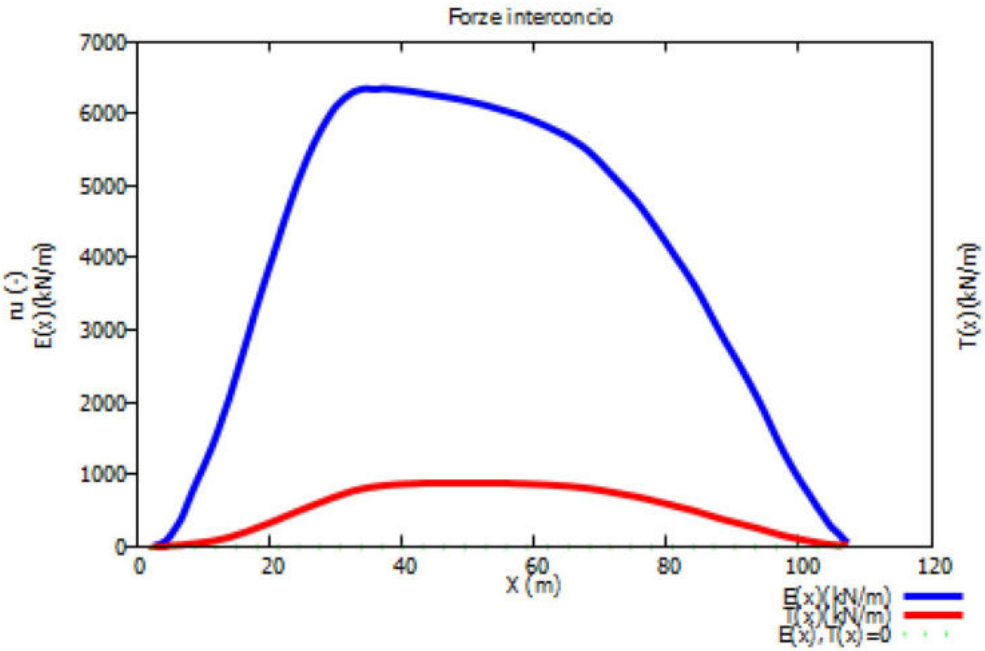
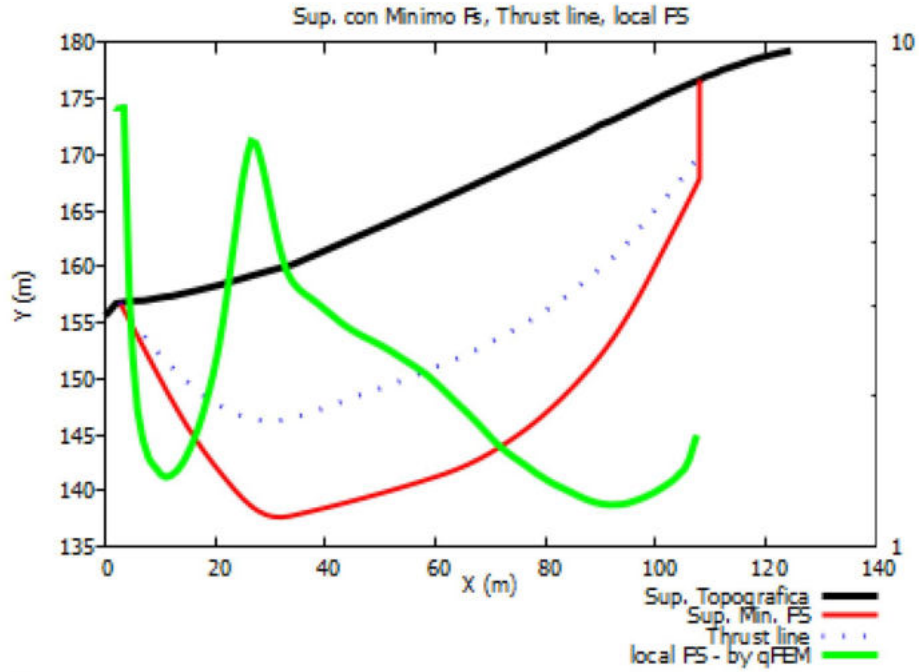
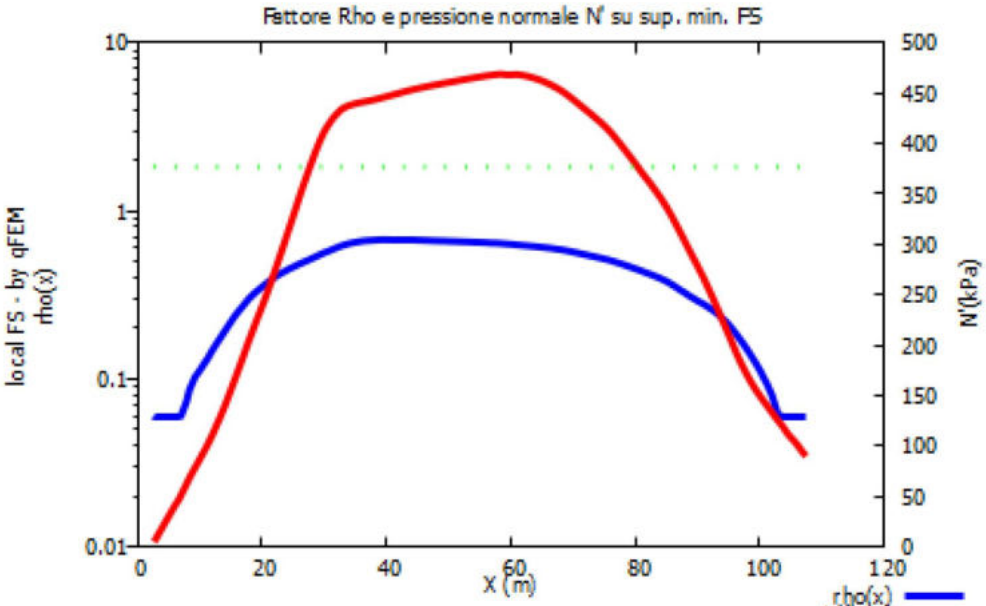




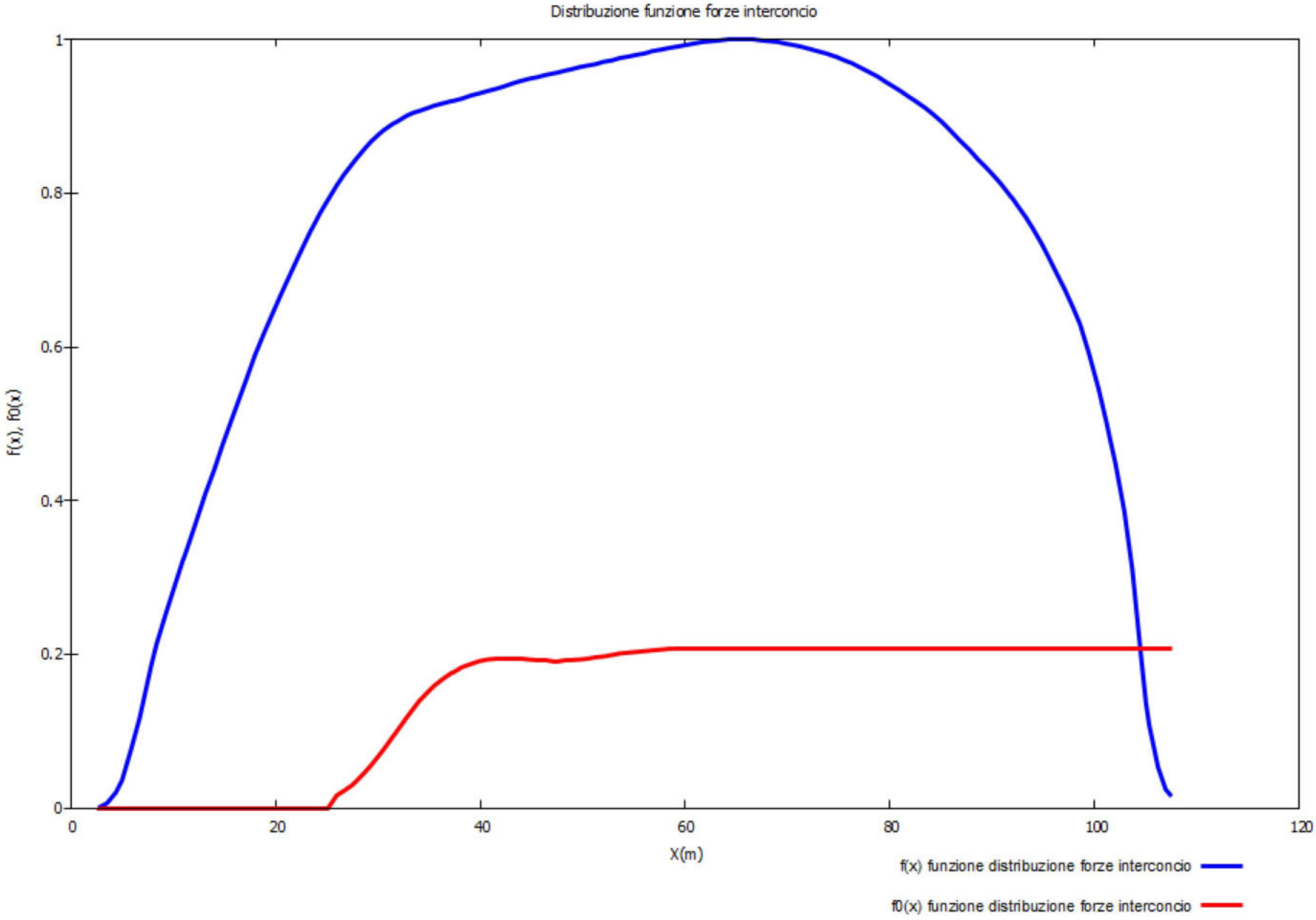




Metodo di calcolo: BORSELLI (2016)

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

14/11/21 12:15


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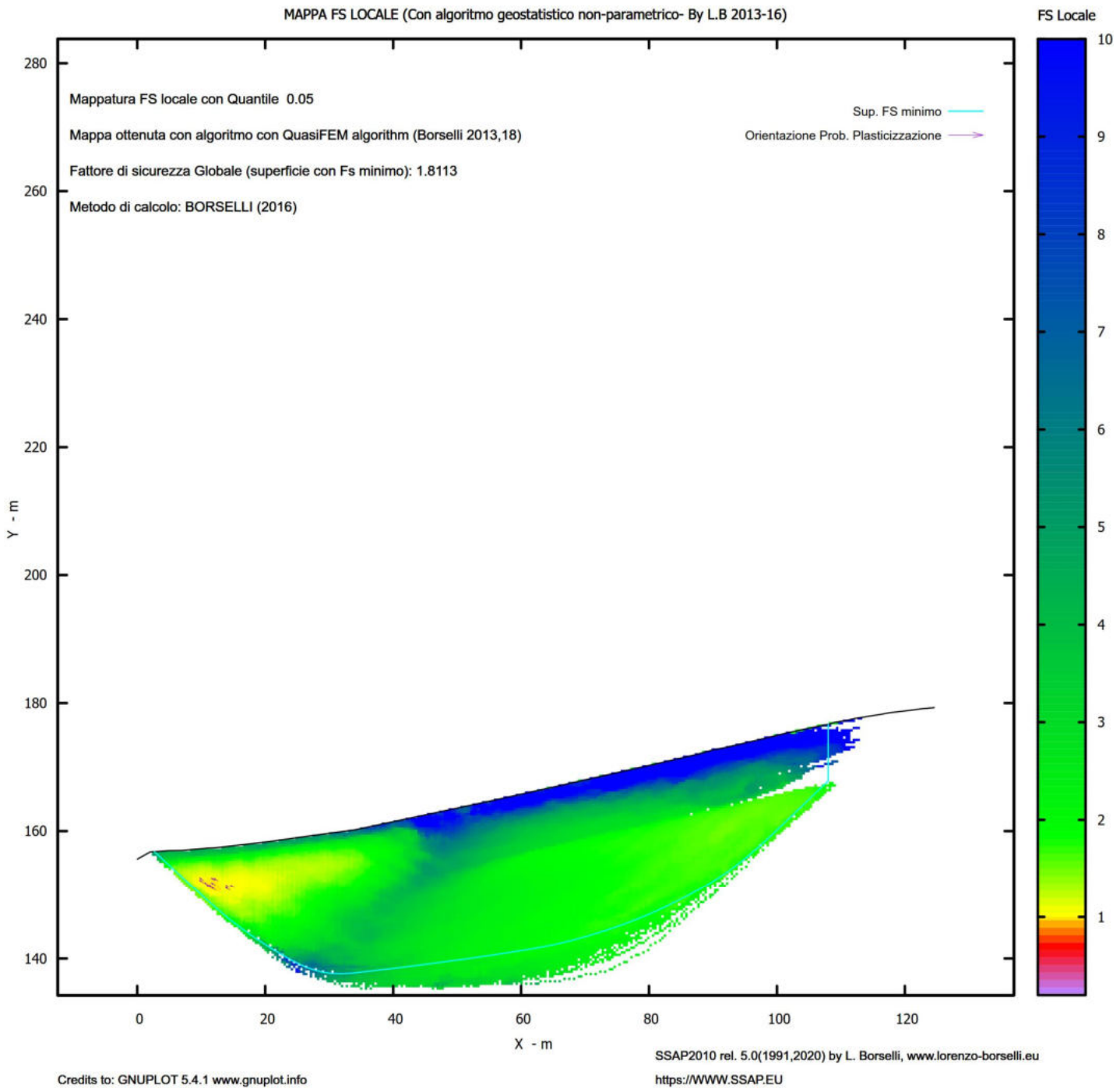
0.2
0.4
0.6
0.8
1
0
20
40
60
80
100
120
f(x) funzione distribuzione forze interconcio
f0(x) funzione distribuzione forze interconcio



Credits to: GNUPLOT 5.4.1 www.gnuplot.info

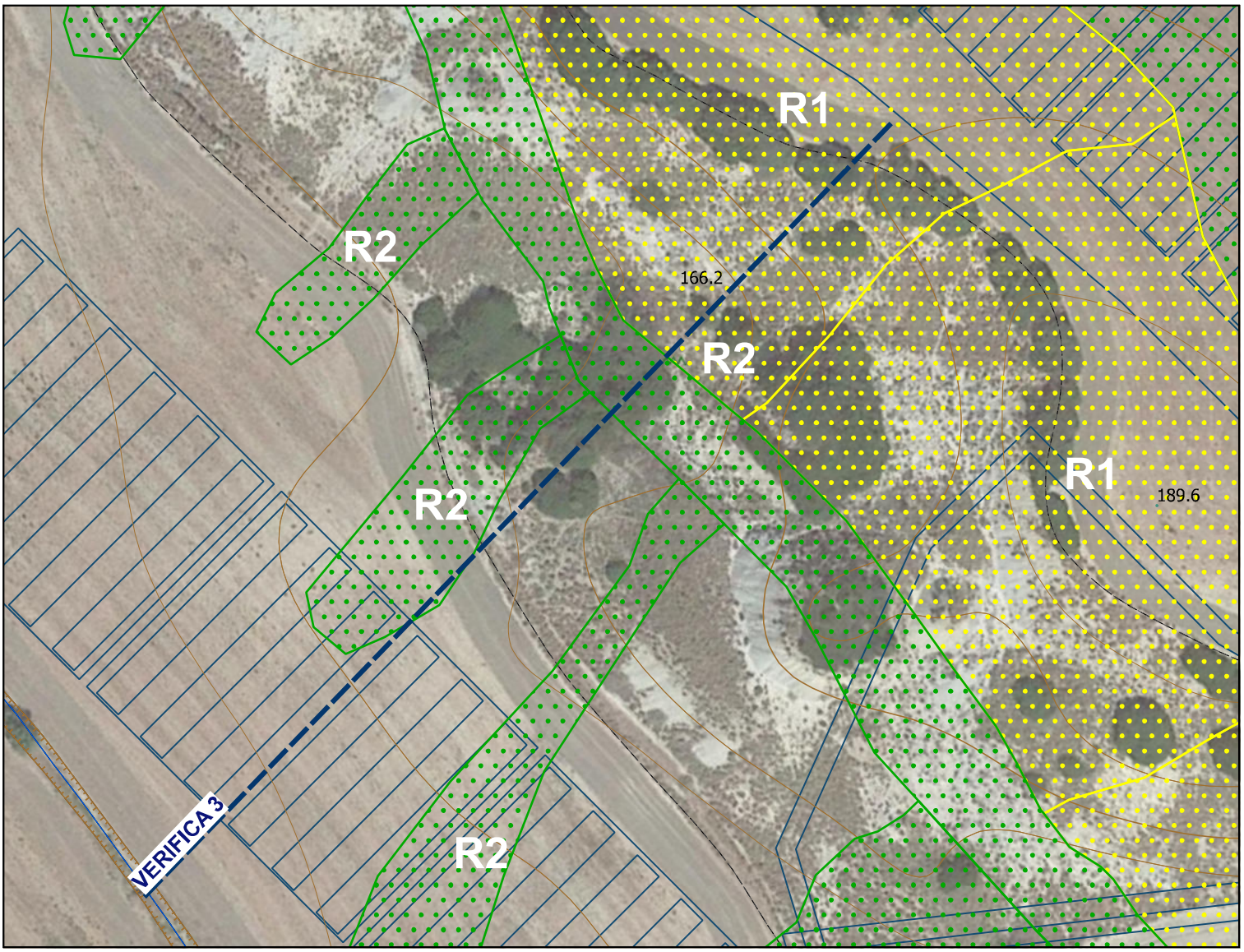
SSAP2010 rel. 5.0(1991,2020) by L. Borselli, www.lorenzo-borselli.eu

https://WWW.SSAP.EU

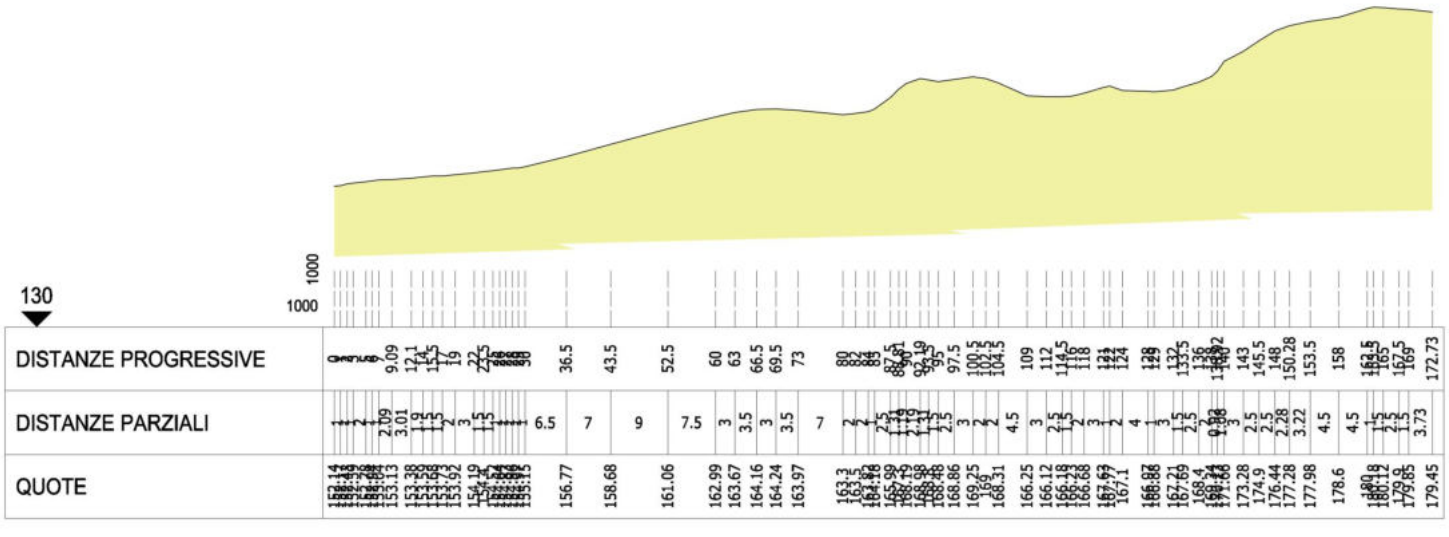
SEZIONE DI VERIFICA N. 3

CONDIZIONE DRENATA

SEZIONE DI VERIFICA N. 3



0 10 20 m



Report elaborazioni

SSAP 5.0 - Slope Stability Analysis Program (1991,2020)
WWW.SSAP.EU
Build No. 11719
BY
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** Gia' Ricercatore CNR-IRPI fino a Luglio 2011

Ultima Revisione struttura tabelle del report: 12 settembre 2020

File report: C:\SSAP\CRACO\MIADONNA\VERIFICA3\DRENATA\MORG\MORG.txt
Data: 14/11/2021
Localita' :
Descrizione:
Modello pendio: VERIFICA3DRENATA.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	152.14	-	-	-	-	-	-
1.00	152.17	-	-	-	-	-	-
2.00	152.43	-	-	-	-	-	-
3.00	152.59	-	-	-	-	-	-
5.00	152.78	-	-	-	-	-	-
6.00	152.94	-	-	-	-	-	-
7.00	153.04	-	-	-	-	-	-
9.09	153.13	-	-	-	-	-	-
12.10	153.38	-	-	-	-	-	-
14.00	153.59	-	-	-	-	-	-
15.50	153.68	-	-	-	-	-	-
17.00	153.73	-	-	-	-	-	-
19.00	153.92	-	-	-	-	-	-
22.00	154.19	-	-	-	-	-	-
23.50	154.40	-	-	-	-	-	-
25.00	154.52	-	-	-	-	-	-
26.00	154.64	-	-	-	-	-	-
27.00	154.83	-	-	-	-	-	-
28.00	154.96	-	-	-	-	-	-
29.00	154.97	-	-	-	-	-	-
30.00	155.15	-	-	-	-	-	-
36.50	156.77	-	-	-	-	-	-
43.50	158.68	-	-	-	-	-	-
52.50	161.06	-	-	-	-	-	-
60.00	162.99	-	-	-	-	-	-
63.00	163.67	-	-	-	-	-	-
66.50	164.16	-	-	-	-	-	-
69.50	164.24	-	-	-	-	-	-
73.00	163.97	-	-	-	-	-	-
80.00	163.30	-	-	-	-	-	-
82.00	163.50	-	-	-	-	-	-
84.00	163.82	-	-	-	-	-	-
85.00	164.18	-	-	-	-	-	-
87.50	165.99	-	-	-	-	-	-
88.81	167.30	-	-	-	-	-	-
90.00	168.19	-	-	-	-	-	-
92.19	168.98	-	-	-	-	-	-
93.50	168.80	-	-	-	-	-	-
95.00	168.48	-	-	-	-	-	-
97.50	168.87	-	-	-	-	-	-
100.50	169.25	-	-	-	-	-	-
102.50	169.00	-	-	-	-	-	-
104.50	168.31	-	-	-	-	-	-
109.00	166.25	-	-	-	-	-	-
112.00	166.12	-	-	-	-	-	-

114.50	166.18	-	-	-	-	-	-
116.00	166.23	-	-	-	-	-	-
118.00	166.68	-	-	-	-	-	-
121.00	167.63	-	-	-	-	-	-
122.00	167.77	-	-	-	-	-	-
124.00	167.10	-	-	-	-	-	-
128.00	166.97	-	-	-	-	-	-
129.00	166.88	-	-	-	-	-	-
132.00	167.21	-	-	-	-	-	-
133.50	167.69	-	-	-	-	-	-
136.00	168.40	-	-	-	-	-	-
138.00	169.34	-	-	-	-	-	-
138.92	170.13	-	-	-	-	-	-
140.00	171.66	-	-	-	-	-	-
143.00	173.28	-	-	-	-	-	-
145.50	174.90	-	-	-	-	-	-
148.00	176.44	-	-	-	-	-	-
150.28	177.28	-	-	-	-	-	-
153.50	177.98	-	-	-	-	-	-
158.00	178.60	-	-	-	-	-	-
162.50	180.00	-	-	-	-	-	-
163.50	180.18	-	-	-	-	-	-
165.00	180.12	-	-	-	-	-	-
167.50	179.91	-	-	-	-	-	-
169.00	179.85	-	-	-	-	-	-
172.73	179.45	-	-	-	-	-	-

ASSENZA DI FALDA

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

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

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

---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
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): 6.9 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 3.45 158.91
LIVELLO MINIMO CONSIDERATO (Ymin): 126.90
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 20.73 169.28

*** 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 : 0.0250
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0125
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) 1.6664 - Min. - X Y Lambda= 0.5205

X	Y
133.51	167.69
134.92	166.86
135.58	166.50
136.00	166.29
136.34	166.15
136.69	166.06
136.99	166.00
137.34	165.97
137.72	165.96
138.22	165.98
138.63	166.01
139.00	166.05
139.34	166.10
139.70	166.18
140.03	166.27
140.38	166.38
140.76	166.51
141.18	166.68
141.58	166.85
141.96	167.01
142.34	167.17
142.71	167.33
143.08	167.50
143.45	167.67
143.83	167.86
144.22	168.05
144.60	168.24
144.97	168.43
145.34	168.63
145.71	168.83
146.08	169.04
146.45	169.26
146.83	169.48
147.22	169.72
147.60	169.95
147.97	170.19
148.34	170.43
148.72	170.67
149.09	170.92
149.46	171.17
149.84	171.44
150.24	171.71
150.61	171.98
150.98	172.25
151.35	172.53
151.72	172.82
152.09	173.11
152.46	173.41
152.85	173.73
153.25	174.07
153.63	174.40
153.99	174.74
154.35	175.08
154.62	175.34
154.62	178.13

Fattore di sicurezza (FS) 1.6687 - N.2 -- X Y Lambda= 0.5286

X	Y
133.74	167.76
135.60	166.79
136.43	166.38
136.95	166.17
137.35	166.06
137.78	166.01
138.13	166.00
138.55	166.05
139.02	166.14
139.66	166.30
140.20	166.45
140.69	166.60
141.15	166.76
141.62	166.93

142.07 167.11
142.53 167.31
143.01 167.53
143.54 167.78
144.03 168.02
144.51 168.27
144.98 168.51
145.45 168.77
145.92 169.03
146.39 169.30
146.88 169.59
147.40 169.90
147.88 170.21
148.35 170.52
148.80 170.84
149.27 171.18
149.73 171.53
150.19 171.90
150.68 172.31
151.20 172.76
151.69 173.19
152.16 173.63
152.62 174.07
153.10 174.53
153.61 175.06
153.87 175.33
153.87 178.03

Fattore di sicurezza (FS) 1.6728 - N.3 -- X Y Lambda= 0.5246
133.13 167.57
134.54 166.73
135.18 166.37
135.59 166.17
135.91 166.04
136.25 165.95
136.54 165.91
136.87 165.89
137.24 165.90
137.72 165.94
138.12 165.98
138.50 166.03
138.85 166.09
139.21 166.16
139.55 166.24
139.90 166.34
140.27 166.45
140.68 166.58
141.06 166.70
141.43 166.83
141.79 166.96
142.15 167.10
142.51 167.24
142.88 167.39
143.26 167.54
143.65 167.71
144.02 167.88
144.38 168.05
144.74 168.23
145.10 168.42
145.45 168.61
145.81 168.82
146.18 169.04
146.57 169.28
146.95 169.51
147.32 169.75
147.68 169.98
148.05 170.23
148.41 170.47
148.78 170.73
149.16 170.99
149.56 171.27
149.93 171.55
150.28 171.83
150.63 172.12

150.99 172.43
151.34 172.75
151.69 173.10
152.06 173.47
152.45 173.88
152.83 174.28
153.20 174.67
153.57 175.07
153.83 175.34
153.83 178.03

Fattore di sicurezza (FS) 1.6751 - N.4 -- X Y Lambda= 0.5365
133.86 167.79
135.62 166.96
136.41 166.60
136.91 166.42
137.31 166.32
137.72 166.27
138.07 166.26
138.48 166.29
138.94 166.37
139.54 166.51
140.05 166.64
140.51 166.77
140.94 166.91
141.38 167.07
141.80 167.25
142.24 167.44
142.69 167.67
143.19 167.93
143.67 168.18
144.13 168.42
144.59 168.67
145.04 168.92
145.50 169.17
145.96 169.43
146.44 169.70
146.93 169.98
147.38 170.25
147.82 170.54
148.25 170.83
148.69 171.16
149.12 171.49
149.56 171.85
150.02 172.25
150.53 172.70
151.00 173.13
151.45 173.57
151.90 174.00
152.35 174.46
152.84 174.99
153.09 175.26
153.09 177.89

Fattore di sicurezza (FS) 1.6760 - N.5 -- X Y Lambda= 0.5313
133.84 167.79
135.74 166.93
136.58 166.58
137.12 166.40
137.53 166.31
137.97 166.28
138.34 166.29
138.77 166.35
139.24 166.47
139.87 166.65
140.42 166.83
140.94 166.99
141.42 167.16
141.91 167.33
142.38 167.51
142.87 167.69
143.37 167.89
143.90 168.11

144.39 168.33
144.87 168.54
145.34 168.77
145.82 169.01
146.29 169.26
146.77 169.52
147.26 169.80
147.79 170.11
148.29 170.41
148.77 170.71
149.25 171.01
149.74 171.33
150.22 171.65
150.71 171.99
151.22 172.34
151.77 172.73
152.25 173.10
152.72 173.49
153.17 173.88
153.64 174.33
154.15 174.85
154.67 175.42
154.67 178.14

Fattore di sicurezza (FS) 1.6772 - N.6 -- X Y Lambda= 0.5144
134.04 167.84
135.67 166.88
136.41 166.47
136.88 166.25
137.25 166.12
137.64 166.03
137.96 165.99
138.34 165.99
138.77 166.02
139.35 166.10
139.82 166.18
140.24 166.26
140.63 166.37
141.04 166.49
141.42 166.63
141.82 166.79
142.25 166.98
142.72 167.21
143.17 167.43
143.60 167.65
144.03 167.87
144.45 168.10
144.86 168.32
145.28 168.56
145.70 168.80
146.14 169.05
146.57 169.30
147.00 169.54
147.42 169.79
147.85 170.04
148.28 170.29
148.71 170.54
149.15 170.79
149.60 171.05
150.02 171.31
150.43 171.57
150.83 171.85
151.24 172.15
151.64 172.45
152.06 172.79
152.49 173.14
152.95 173.55
153.39 173.94
153.81 174.33
154.22 174.72
154.64 175.14
154.90 175.40
154.90 178.17

Fattore di sicurezza (FS) 1.6772 - N.7 -- X Y Lambda= 0.5265

X	Y
133.20	167.59
135.10	166.66
135.96	166.27
136.51	166.07
136.93	165.95
137.38	165.89
137.76	165.89
138.20	165.92
138.70	166.01
139.36	166.16
139.91	166.30
140.41	166.44
140.87	166.60
141.35	166.78
141.81	166.97
142.29	167.18
142.79	167.43
143.35	167.72
143.86	168.00
144.35	168.27
144.83	168.56
145.32	168.86
145.79	169.16
146.28	169.48
146.77	169.83
147.29	170.20
147.79	170.56
148.29	170.92
148.79	171.28
149.28	171.65
149.78	172.01
150.27	172.39
150.78	172.77
151.30	173.17
151.79	173.55
152.28	173.95
152.75	174.35
153.24	174.78
153.76	175.27
153.76	178.02

Fattore di sicurezza (FS) 1.6802 - N.8 -- X Y Lambda= 0.5216

X	Y
131.95	167.20
133.70	166.19
134.49	165.75
134.99	165.52
135.39	165.37
135.81	165.28
136.16	165.24
136.57	165.24
137.03	165.27
137.64	165.36
138.15	165.44
138.61	165.53
139.03	165.64
139.47	165.77
139.88	165.91
140.31	166.08
140.76	166.28
141.27	166.52
141.75	166.74
142.22	166.97
142.67	167.19
143.13	167.42
143.58	167.64
144.03	167.88
144.49	168.11
144.96	168.36
145.42	168.60
145.87	168.85
146.32	169.10
146.78	169.35

147.23 169.61
147.69 169.88
148.16 170.16
148.66 170.46
149.11 170.75
149.55 171.05
149.98 171.35
150.42 171.69
150.85 172.04
151.29 172.42
151.75 172.82
152.24 173.28
152.71 173.72
153.17 174.16
153.63 174.60
154.08 175.04
154.35 175.32
154.35 178.10

Fattore di sicurezza (FS) 1.6816 - N.9 -- X Y Lambda= 0.5108
132.61 167.41
134.54 166.39
135.41 165.97
135.98 165.73
136.42 165.60
136.88 165.52
137.27 165.49
137.72 165.50
138.24 165.56
138.92 165.67
139.48 165.78
139.97 165.91
140.43 166.04
140.92 166.22
141.36 166.40
141.84 166.63
142.34 166.88
142.90 167.19
143.44 167.50
143.95 167.79
144.46 168.08
144.96 168.37
145.46 168.67
145.96 168.97
146.47 169.27
146.99 169.59
147.50 169.90
148.00 170.22
148.49 170.54
148.99 170.86
149.50 171.20
150.01 171.54
150.54 171.91
151.10 172.30
151.60 172.67
152.07 173.06
152.53 173.46
153.02 173.93
153.53 174.48
154.13 175.16
154.40 175.48
154.40 178.10

Fattore di sicurezza (FS) 1.6820 - N.10 -- X Y Lambda= 0.5154
132.34 167.32
134.46 166.28
135.41 165.84
136.02 165.62
136.49 165.49
136.99 165.42
137.41 165.41
137.89 165.46
138.44 165.55

139.16	165.72
139.77	165.87
140.34	166.03
140.87	166.19
141.40	166.37
141.92	166.57
142.45	166.78
143.00	167.02
143.60	167.30
144.16	167.56
144.72	167.83
145.26	168.10
145.81	168.38
146.35	168.66
146.90	168.95
147.47	169.26
148.07	169.59
148.62	169.92
149.15	170.25
149.66	170.59
150.20	170.98
150.71	171.37
151.24	171.79
151.79	172.25
152.39	172.78
152.96	173.28
153.51	173.78
154.06	174.29
154.60	174.79
155.21	175.37
155.49	175.64
155.49	178.25

---------- 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	1.666	1404.7	843.0	477.4	Surplus
2	1.669	1337.1	801.3	455.7	Surplus
3	1.673	1376.7	823.0	471.4	Surplus
4	1.675	1230.7	734.7	422.5	Surplus
5	1.676	1349.4	805.1	463.7	Surplus
6	1.677	1426.5	850.6	490.9	Surplus
7	1.677	1332.0	794.2	458.4	Surplus
8	1.680	1510.7	899.1	521.7	Surplus
9	1.682	1478.8	879.4	511.5	Surplus
10	1.682	1599.4	950.9	553.4	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 422.5

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)
133.510	0.263	-30.50	0.61	0.00	0.00	26.00	19.50
133.773	0.263	-30.50	1.84	0.00	0.00	26.00	19.50
134.036	0.263	-30.50	3.06	0.00	0.00	26.00	19.50
134.300	0.263	-30.50	4.29	0.00	0.00	26.00	19.50
134.563	0.263	-30.50	5.52	0.00	0.00	26.00	19.50
134.826	0.098	-30.50	2.37	0.00	0.00	26.00	19.50
134.925	0.263	-29.17	7.18	0.00	0.00	26.00	19.50

135.188	0.263	-29.17	8.36	0.00	0.00	26.00	19.50
135.451	0.125	-29.17	4.37	0.00	0.00	26.00	19.50
135.576	0.263	-25.96	10.05	0.00	0.00	26.00	19.50
135.839	0.161	-25.96	6.66	0.00	0.00	26.00	19.50
136.000	0.001	-25.96	0.04	0.00	0.00	26.00	19.50
136.001	0.263	-21.50	11.87	0.00	0.00	26.00	19.50
136.264	0.078	-21.50	3.75	0.00	0.00	26.00	19.50
136.342	0.263	-15.54	13.36	0.00	0.00	26.00	19.50
136.606	0.085	-15.54	4.53	0.00	0.00	26.00	19.50
136.691	0.263	-10.49	14.68	0.00	0.00	26.00	19.50
136.954	0.041	-10.49	2.38	0.00	0.00	26.00	19.50
136.995	0.263	-5.26	15.68	0.00	0.00	26.00	19.50
137.258	0.081	-5.26	4.96	0.00	0.00	26.00	19.50
137.339	0.263	-1.02	16.66	0.00	0.00	26.00	19.50
137.602	0.121	-1.02	7.90	0.00	0.00	26.00	19.50
137.723	0.263	1.87	17.62	0.00	0.00	26.00	19.50
137.987	0.013	1.87	0.90	0.00	0.00	26.00	19.50
138.000	0.220	1.87	15.45	0.00	0.00	26.00	19.50
138.220	0.263	3.77	19.49	0.00	0.00	26.00	19.50
138.484	0.144	3.77	11.14	0.00	0.00	26.00	19.50
138.628	0.263	6.30	21.18	0.00	0.00	26.00	19.50
138.891	0.029	6.30	2.37	0.00	0.00	26.00	19.50
138.920	0.077	6.30	6.50	0.00	0.00	26.00	19.50
138.997	0.263	9.20	23.24	0.00	0.00	26.00	19.50
139.261	0.077	9.20	7.09	0.00	0.00	26.00	19.50
139.337	0.263	12.14	25.48	0.00	0.00	26.00	19.50
139.601	0.096	12.14	9.76	0.00	0.00	26.00	19.50
139.697	0.263	14.86	27.75	0.00	0.00	26.00	19.50
139.961	0.039	14.86	4.30	0.00	0.00	26.00	19.50
140.000	0.031	14.86	3.40	0.00	0.00	26.00	19.50
140.031	0.263	17.54	29.00	0.00	0.00	26.00	19.50
140.294	0.090	17.54	10.01	0.00	0.00	26.00	19.50
140.385	0.263	19.84	29.39	0.00	0.00	26.00	19.50
140.648	0.109	19.84	12.21	0.00	0.00	26.00	19.50
140.757	0.263	21.67	29.72	0.00	0.00	26.00	19.50
141.020	0.163	21.67	18.50	0.00	0.00	26.00	19.50
141.183	0.263	22.19	30.04	0.00	0.00	26.00	19.50
141.446	0.135	22.19	15.46	0.00	0.00	26.00	19.50
141.581	0.263	22.75	30.31	0.00	0.00	26.00	19.50
141.845	0.119	22.75	13.75	0.00	0.00	26.00	19.50
141.964	0.263	23.33	30.55	0.00	0.00	26.00	19.50
142.227	0.110	23.33	12.77	0.00	0.00	26.00	19.50
142.337	0.263	23.92	30.76	0.00	0.00	26.00	19.50
142.600	0.108	23.92	12.71	0.00	0.00	26.00	19.50
142.708	0.263	24.49	30.94	0.00	0.00	26.00	19.50
142.972	0.028	24.49	3.33	0.00	0.00	26.00	19.50
143.000	0.077	24.49	9.10	0.00	0.00	26.00	19.50
143.077	0.263	25.05	31.22	0.00	0.00	26.00	19.50
143.341	0.110	25.05	13.11	0.00	0.00	26.00	19.50
143.450	0.263	25.59	31.57	0.00	0.00	26.00	19.50
143.714	0.117	25.59	14.07	0.00	0.00	26.00	19.50
143.831	0.263	26.10	31.90	0.00	0.00	26.00	19.50
144.094	0.131	26.10	15.95	0.00	0.00	26.00	19.50
144.225	0.263	26.74	32.22	0.00	0.00	26.00	19.50
144.488	0.115	26.74	14.12	0.00	0.00	26.00	19.50
144.603	0.263	27.42	32.51	0.00	0.00	26.00	19.50
144.866	0.108	27.42	13.42	0.00	0.00	26.00	19.50
144.975	0.263	28.11	32.75	0.00	0.00	26.00	19.50
145.238	0.103	28.11	12.87	0.00	0.00	26.00	19.50
145.341	0.159	28.80	19.87	0.00	0.00	26.00	19.50
145.500	0.212	28.80	26.62	0.00	0.00	26.00	19.50
145.712	0.263	29.47	33.09	0.00	0.00	26.00	19.50
145.976	0.103	29.47	12.98	0.00	0.00	26.00	19.50
146.079	0.263	30.14	33.17	0.00	0.00	26.00	19.50
146.342	0.108	30.14	13.61	0.00	0.00	26.00	19.50
146.450	0.263	30.77	33.23	0.00	0.00	26.00	19.50
146.713	0.114	30.77	14.42	0.00	0.00	26.00	19.50
146.828	0.263	31.37	33.27	0.00	0.00	26.00	19.50
147.091	0.129	31.37	16.30	0.00	0.00	26.00	19.50
147.220	0.263	31.81	33.27	0.00	0.00	26.00	19.50
147.483	0.117	31.81	14.78	0.00	0.00	26.00	19.50
147.600	0.263	32.27	33.26	0.00	0.00	26.00	19.50
147.863	0.111	32.27	14.01	0.00	0.00	26.00	19.50
147.974	0.026	32.73	3.23	0.00	0.00	26.00	19.50
148.000	0.263	32.73	33.04	0.00	0.00	26.00	19.50

148.263	0.082	32.73	10.16	0.00	0.00	26.00	19.50
148.345	0.263	33.20	32.53	0.00	0.00	26.00	19.50
148.608	0.109	33.20	13.35	0.00	0.00	26.00	19.50
148.717	0.263	33.65	31.95	0.00	0.00	26.00	19.50
148.981	0.107	33.65	12.91	0.00	0.00	26.00	19.50
149.088	0.263	34.10	31.36	0.00	0.00	26.00	19.50
149.351	0.111	34.10	13.10	0.00	0.00	26.00	19.50
149.462	0.263	34.54	30.73	0.00	0.00	26.00	19.50
149.726	0.117	34.54	13.56	0.00	0.00	26.00	19.50
149.843	0.263	34.95	30.07	0.00	0.00	26.00	19.50
150.106	0.129	34.95	14.62	0.00	0.00	26.00	19.50
150.236	0.044	35.63	4.95	0.00	0.00	26.00	19.50
150.280	0.263	35.63	29.18	0.00	0.00	26.00	19.50
150.543	0.070	35.63	7.59	0.00	0.00	26.00	19.50
150.613	0.263	36.33	28.28	0.00	0.00	26.00	19.50
150.876	0.108	36.33	11.34	0.00	0.00	26.00	19.50
150.984	0.263	37.04	27.24	0.00	0.00	26.00	19.50
151.247	0.103	37.04	10.41	0.00	0.00	26.00	19.50
151.350	0.263	37.74	26.18	0.00	0.00	26.00	19.50
151.613	0.108	37.74	10.49	0.00	0.00	26.00	19.50
151.721	0.263	38.43	25.07	0.00	0.00	26.00	19.50
151.984	0.104	38.43	9.70	0.00	0.00	26.00	19.50
152.088	0.263	39.11	23.92	0.00	0.00	26.00	19.50
152.352	0.111	39.11	9.79	0.00	0.00	26.00	19.50
152.462	0.263	39.75	22.72	0.00	0.00	26.00	19.50
152.725	0.120	39.75	10.06	0.00	0.00	26.00	19.50
152.845	0.263	40.33	21.46	0.00	0.00	26.00	19.50
153.109	0.139	40.33	11.01	0.00	0.00	26.00	19.50
153.248	0.252	41.35	19.22	0.00	0.00	26.00	19.50
153.500	0.126	41.35	9.25	0.00	0.00	26.00	19.50
153.626	0.263	42.42	18.61	0.00	0.00	26.00	19.50
153.889	0.105	42.42	7.13	0.00	0.00	26.00	19.50
153.994	0.263	43.52	17.06	0.00	0.00	26.00	19.50
154.257	0.097	43.52	6.00	0.00	0.00	26.00	19.50
154.354	0.263	44.57	15.48	0.00	0.00	26.00	19.50

LEGENDA SIMBOLI

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

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TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	ht (m)	yt (m)	yt' (--)	E(x) (kN/m)	T(x) (kN/m)	E' (kN)	rho(x) (--)	FS_qFEM (--)	FS_srmFEM (--)		
133.510	0.000	167.693	-0.367	0.0000000000E+000	0.0000000000E+000	4.1951981498E-001	0.056	50.000	50.000		
133.773	0.058	167.595	-0.367	4.6558797447E-001	1.5048585133E-003	3.1167621187E+000	0.056	50.000	50.000		
134.036	0.117	167.499	-0.383	1.6414154629E+000	3.6837471352E-002	8.3473254178E+000	0.056	34.446	16.605		
134.300	0.166	167.394	-0.369	4.8616337723E+000	4.5426391678E-001	1.7739382702E+001	0.056	9.478	5.765		
134.563	0.233	167.305	-0.333	1.0983705943E+001	1.4194083148E+000	3.3278439007E+001	0.102	6.542	3.911		
134.826	0.301	167.218	-0.317	2.2387432113E+001	3.3676038314E+000	4.1317313937E+001	0.168	5.877	3.160		
134.925	0.331	167.191	-0.290	2.6378222934E+001	4.0632416243E+000	4.2790307274E+001	0.183	5.782	3.010		
135.188	0.401	167.114	-0.268	3.9208204987E+001	6.4046671237E+000	5.0113394958E+001	0.225	5.853	2.699		
135.451	0.484	167.049	-0.231	5.2770003330E+001	9.0430235120E+000	5.0840314037E+001	0.258	6.218	2.521		
135.576	0.528	167.024	-0.185	5.9071937458E+001	1.0326620685E+001	5.1798023591E+001	0.271	6.486	2.466		
135.839	0.610	166.978	-0.159	7.3418333054E+001	1.3487714332E+001	5.2310516885E+001	0.301	6.976	2.389		
136.000	0.667	166.956	-0.132	8.1606471678E+001	1.5402456513E+001	5.5656363514E+001	0.317	7.184	2.361		
136.001	0.667	166.956	-0.093	8.1656309514E+001	1.5414970105E+001	5.5673656290E+001	0.317	7.185	2.361		
136.264	0.747	166.932	-0.081	9.5639455407E+001	1.9004473507E+001	4.7435978712E+001	0.343	6.939	2.333		
136.342	0.774	166.929	-0.023	9.9211623658E+001	2.0019305510E+001	4.6228755498E+001	0.350	6.710	2.330		
136.606	0.843	166.924	-0.010	1.1180469413E+002	2.3783992243E+001	4.7546630263E+001	0.376	5.658	2.323		
136.691	0.867	166.925	0.043	1.1583392381E+002	2.5086674838E+001	4.7883579086E+001	0.385	5.291	2.322		
136.954	0.930	166.939	0.056	1.2879089770E+002	2.9612348273E+001	4.3830932544E+001	0.418	4.203	2.323		
136.995	0.941	166.942	0.102	1.3056026285E+002	3.0280982219E+001	4.3167191183E+001	0.422	4.062	2.324		
137.258	0.993	166.970	0.117	1.4222424142E+002	3.4870181783E+001	4.5736712000E+001	0.453	3.346	2.331		
137.339	1.013	166.982	0.171	1.4594626280E+002	3.6446949106E+001	4.4161713322E+001	0.464	3.171	2.335		
137.602	1.064	167.029	0.205	1.5584062107E+002	4.1099035174E+001	3.8980090485E+001	0.496	2.777	2.350		

137.723	1.098	167.061	0.280	1.6064253744E+002	4.3662558083E+001	3.8723263402E+001	0.514	2.654	2.361
137.987	1.165	167.137	0.290	1.7032231353E+002	4.9164910129E+001	3.5678633289E+001	0.551	2.468	2.388
138.000	1.169	167.141	0.362	1.7079505987E+002	4.9452830415E+001	3.5531021637E+001	0.553	2.461	2.389
138.220	1.242	167.221	0.396	1.7828847463E+002	5.4279711555E+001	3.3033829834E+001	0.579	2.384	2.412
138.484	1.337	167.333	0.428	1.8668810664E+002	6.0205753463E+001	2.9952546589E+001	0.610	2.328	2.431
138.628	1.390	167.396	0.515	1.9085299635E+002	6.3327657806E+001	2.8343753359E+001	0.626	2.306	2.437
138.891	1.508	167.543	0.557	1.9805531062E+002	6.9474043498E+001	2.5601615758E+001	0.658	2.264	2.421
138.920	1.521	167.559	0.567	1.9878415639E+002	7.0112790593E+001	2.4984750262E+001	0.661	2.260	2.419
138.997	1.556	167.603	0.606	2.0063045903E+002	7.1809506941E+001	2.3418028162E+001	0.666	2.247	2.410
139.261	1.676	167.765	0.620	2.0642493695E+002	7.7552164719E+001	2.1234029605E+001	0.684	2.194	2.360
139.337	1.712	167.814	0.606	2.0803414012E+002	7.9206127194E+001	1.9845967576E+001	0.689	2.178	2.344
139.601	1.813	167.971	0.587	2.1220654285E+002	8.4030029135E+001	1.3869629566E+001	0.701	2.118	2.275
139.697	1.846	168.025	0.590	2.1347486158E+002	8.5589542139E+001	1.2972953575E+001	0.704	2.097	2.250
139.961	1.935	168.184	0.593	2.1676674223E+002	8.9927280430E+001	9.8848129992E+000	0.713	2.031	2.174
140.000	1.945	168.205	0.519	2.1714165935E+002	9.0464413402E+001	9.0110934369E+000	0.714	2.022	2.164
140.031	1.953	168.220	0.559	2.1740994559E+002	9.0860264279E+001	8.6189589621E+000	0.716	2.015	2.156
140.294	2.018	168.369	0.546	2.1964946739E+002	9.4416013599E+001	5.9242655267E+000	0.736	1.947	2.081
140.385	2.034	168.413	0.502	2.2010433919E+002	9.5320200719E+001	4.7437847688E+000	0.741	1.926	2.058
140.648	2.072	168.547	0.505	2.2112614754E+002	9.7759722850E+001	2.3881100934E+000	0.755	1.864	1.991
140.757	2.087	168.601	0.522	2.2131885298E+002	9.8553329730E+001	1.4926334674E+000	0.759	1.839	1.964
141.020	2.123	168.741	0.534	2.2153403263E+002	1.0032426733E+002	-2.4260455123E-001	0.770	1.781	1.901
141.183	2.146	168.829	0.548	2.2138759281E+002	1.0113568240E+002	-1.3215970011E+000	0.775	1.748	1.865
141.446	2.184	168.974	0.534	2.2085959818E+002	1.0214013234E+002	-2.6241907453E+000	0.781	1.702	1.812
141.581	2.196	169.041	0.528	2.2046276247E+002	1.0241236411E+002	-3.3748375064E+000	0.783	1.684	1.791
141.845	2.229	169.185	0.540	2.1935132321E+002	1.0271830379E+002	-4.5105685036E+000	0.785	1.652	1.752
141.964	2.242	169.248	0.515	2.1879927779E+002	1.0278829483E+002	-4.7829865845E+000	0.785	1.639	1.737
142.227	2.262	169.382	0.501	2.1745729359E+002	1.0279206370E+002	-5.1442436130E+000	0.786	1.615	1.709
142.337	2.268	169.435	0.480	2.1689064794E+002	1.0276579623E+002	-5.3227164236E+000	0.785	1.607	1.698
142.600	2.277	169.561	0.471	2.1538888819E+002	1.0261895988E+002	-5.6870364470E+000	0.785	1.588	1.676
142.708	2.278	169.610	0.463	2.1477259286E+002	1.0254314072E+002	-5.8796429272E+000	0.785	1.581	1.668
142.972	2.282	169.733	0.466	2.1309702375E+002	1.0229722217E+002	-6.3034207983E+000	0.784	1.564	1.648
143.000	2.281	169.745	0.440	2.1291897735E+002	1.0226757922E+002	-6.3241201786E+000	0.784	1.563	1.646
143.077	2.280	169.779	0.484	2.1242513979E+002	1.0218441783E+002	-6.6689058811E+000	0.784	1.558	1.640
143.341	2.288	169.910	0.496	2.1042585391E+002	1.0180931581E+002	-7.8723469170E+000	0.781	1.540	1.619
143.450	2.291	169.965	0.539	2.0954711695E+002	1.0162670687E+002	-8.4118165262E+000	0.780	1.533	1.609
143.714	2.311	170.112	0.557	2.0706569747E+002	1.0106306071E+002	-9.7192207951E+000	0.777	1.512	1.583
143.831	2.320	170.177	0.603	2.0591559150E+002	1.0077761674E+002	-1.0381773406E+001	0.775	1.502	1.570
144.094	2.356	170.341	0.635	2.0286624661E+002	9.9957995181E+001	-1.2430408331E+001	0.771	1.478	1.539
144.225	2.378	170.427	0.642	2.0118243966E+002	9.9465599432E+001	-1.2912832644E+001	0.769	1.465	1.522
144.488	2.412	170.594	0.608	1.9775072085E+002	9.8395847448E+001	-1.2173836535E+001	0.764	1.440	1.490
144.603	2.417	170.657	0.576	1.9639525086E+002	9.7948058870E+001	-1.2284053496E+001	0.762	1.431	1.478
144.866	2.436	170.812	0.575	1.9286798503E+002	9.6703849440E+001	-1.2983759382E+001	0.756	1.408	1.451
144.975	2.438	170.871	0.573	1.9148060017E+002	9.6193607740E+001	-1.3332253758E+001	0.753	1.400	1.441
145.238	2.452	171.025	0.572	1.8763838021E+002	9.4700284913E+001	-1.4023209596E+001	0.746	1.379	1.415
145.341	2.452	171.080	0.566	1.8621528614E+002	9.4126886705E+001	-1.4493607656E+001	0.743	1.371	1.407
145.500	2.458	171.173	0.584	1.8374292698E+002	9.3096818940E+001	-1.5795442469E+001	0.738	1.359	1.393
145.712	2.464	171.297	0.602	1.8032275584E+002	9.1603216233E+001	-1.6842194382E+001	0.731	1.343	1.374
145.976	2.478	171.460	0.603	1.7564824199E+002	8.9471421748E+001	-1.7002789738E+001	0.721	1.324	1.352
146.079	2.478	171.518	0.606	1.7392522556E+002	8.8657719078E+001	-1.7317649097E+001	0.717	1.317	1.344
146.342	2.489	171.682	0.610	1.6895608566E+002	8.6246581277E+001	-1.8273057118E+001	0.705	1.299	1.323
146.450	2.489	171.744	0.604	1.6701057406E+002	8.5273153008E+001	-1.8810821352E+001	0.700	1.293	1.315
146.713	2.494	171.906	0.611	1.6155430843E+002	8.2492915743E+001	-2.1451353326E+001	0.686	1.278	1.297
146.828	2.495	171.975	0.610	1.5906854197E+002	8.1201706259E+001	-2.1667420235E+001	0.679	1.272	1.290
147.091	2.496	172.136	0.612	1.5342418629E+002	7.8244520975E+001	-2.1104494434E+001	0.664	1.261	1.277
147.220	2.496	172.215	0.616	1.5072267199E+002	7.6823551595E+001	-2.1249876032E+001	0.656	1.256	1.272
147.483	2.496	172.378	0.619	1.4496188971E+002	7.3780454729E+001	-2.0555029766E+001	0.639	1.249	1.264
147.600	2.495	172.450	0.607	1.4262607644E+002	7.2544470805E+001	-2.0204837032E+001	0.632	1.247	1.262
147.863	2.488	172.609	0.567	1.3716507657E+002	6.9624079896E+001	-1.9371903706E+001	0.616	1.244	1.259
147.974	2.471	172.663	0.482	1.3507958723E+002	6.8500060635E+001	-1.8728755689E+001	0.609	1.243	1.259
148.000	2.467	172.675	0.498	1.3460060123E+002	6.8241213901E+001	-1.8862106148E+001	0.608	1.243	1.259
148.263	2.430	172.806	0.492	1.2923064606E+002	6.5244775711E+001	-1.9638906822E+001	0.594	1.244	1.261
148.345	2.415	172.845	0.499	1.2764723917E+002	6.4345215719E+001	-1.9923468263E+001	0.589	1.245	1.262
148.608	2.377	172.979	0.501	1.2196054517E+002	6.1019959098E+001	-2.0962558259E+001	0.572	1.248	1.268
148.717	2.358	173.031	0.525	1.1970369260E+002	5.9666852233E+001	-2.1546082640E+001	0.565	1.250	1.270
148.981	2.326	173.174	0.552	1.1349223584E+002	5.5874395876E+001	-2.4574452005E+001	0.543	1.256	1.278
149.088	2.316	173.236	0.591	1.1081057113E+002	5.4213337208E+001	-2.5318468243E+001	0.533	1.259	1.282
149.351	2.295	173.393	0.572	1.0392271926E+002	4.9946389993E+001	-2.3367607235E+001	0.506	1.268	1.293
149.462	2.276	173.450	0.525	1.0145692813E+002	4.8426801687E+001	-2.2542204900E+001	0.496	1.271	1.298
149.726	2.235	173.590	0.515	9.5301461254E+001	4.4700549637E+001	-2.1773539540E+001	0.471	1.280	1.309
149.843	2.210	173.646	0.487	9.2828827667E+001	4.3237734419E+001	-2.1308992349E+001	0.462	1.283	1.313
150.106	2.156	173.775	0.475	8.7070016448E+001	3.9906086448E+001	-2.0422680972E+001	0.439	1.292	1.325
150.236	2.122	173.832	0.442	8.4518209852E+001	3.8467621369E+001	-2.0027371536E+001	0.429	1.295	1.330
150.280	2.110	173.852	0.460	8.3630472993E+001	3.7968827988E+001	-2.0255701163E+001	0.425	1.296	1.332
150.543	2.043	173.974	0.456	7.8107015104E+001	3.4924216194E+001	-2.0028968370E+001	0.405	1.305	1.344
150.613	2.024	174.004	0.470	7.6730727678E+001	3.4172615249E+001	-2.0179055615E+001	0.400	1.307	1.347

150.876	1.956	174.130	0.472	7.1018193591E+001	3.1068361011E+001	-2.0866400630E+001	0.379	1.317	1.361
150.984	1.926	174.179	0.493	6.8810199105E+001	2.9873527196E+001	-2.1142803685E+001	0.370	1.321	1.368
151.247	1.861	174.313	0.502	6.2846699181E+001	2.6649818334E+001	-2.1688950213E+001	0.344	1.334	1.385
151.350	1.834	174.363	0.529	6.0660813190E+001	2.5470469787E+001	-2.1990784540E+001	0.335	1.340	1.392
151.613	1.774	174.506	0.520	5.4413749066E+001	2.2101595570E+001	-2.0661647007E+001	0.305	1.357	1.413
151.721	1.739	174.556	0.490	5.2321441653E+001	2.0979536323E+001	-1.9949722580E+001	0.295	1.363	1.421
151.984	1.663	174.688	0.490	4.6719724856E+001	1.7980764932E+001	-1.9593321062E+001	0.265	1.383	1.444
152.088	1.628	174.736	0.477	4.4746833409E+001	1.6926692020E+001	-1.9304874222E+001	0.254	1.390	1.452
152.352	1.542	174.864	0.475	3.9412957012E+001	1.4077886803E+001	-1.9057620229E+001	0.223	1.413	1.477
152.462	1.501	174.913	0.465	3.7362446975E+001	1.2986297627E+001	-1.8867960342E+001	0.210	1.423	1.488
152.725	1.407	175.038	0.462	3.2197508571E+001	1.0270730394E+001	-1.8573843197E+001	0.176	1.450	1.517
152.845	1.360	175.090	0.463	3.0027912707E+001	9.1572318903E+000	-1.8398115677E+001	0.161	1.462	1.531
153.109	1.261	175.215	0.464	2.5010897762E+001	6.7096075065E+000	-1.7981687267E+001	0.126	1.492	1.563
153.248	1.205	175.277	0.454	2.2582216407E+001	5.6002977154E+000	-1.7715268232E+001	0.108	1.510	1.583
153.500	1.098	175.392	0.444	1.7983519424E+001	3.4364846327E+000	-1.6818589881E+001	0.071	1.543	1.619
153.626	1.040	175.445	0.449	1.5962688564E+001	2.5778842937E+000	-1.6369741144E+001	0.056	1.560	1.639
153.889	0.922	175.567	0.459	1.1503698676E+001	1.0222336350E+000	-1.5060321438E+001	0.056	1.597	1.683
153.994	0.872	175.614	0.577	9.9979130758E+000	6.5977843668E-001	-1.5091731057E+001	0.056	1.614	1.704
154.257	0.788	175.780	0.574	5.5099527210E+000	1.1017645558E-001	-1.1818253044E+001	0.056	1.671	1.763
154.354	0.737	175.821	0.574	4.5501228930E+000	6.4377806046E-002	-1.1881815212E+001	0.056	1.670	1.780

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)
133.510	0.263	0.306	-30.501	-0.975	-0.298	20.361	6.223
133.773	0.263	0.306	-30.501	-2.924	-0.894	22.212	6.788
134.036	0.263	0.306	-30.501	-4.874	-1.489	25.506	7.795
134.300	0.263	0.306	-30.501	-6.823	-2.085	29.486	9.011
134.563	0.263	0.306	-30.501	-8.773	-2.681	35.270	10.779
134.826	0.098	0.114	-30.501	-10.111	-1.154	36.089	4.120
134.925	0.263	0.302	-29.168	-11.082	-3.342	39.394	11.880
135.188	0.263	0.302	-29.168	-12.907	-3.892	42.307	12.758
135.451	0.125	0.143	-29.168	-14.252	-2.036	43.848	6.263
135.576	0.263	0.293	-25.963	-14.256	-4.175	47.345	13.866
135.839	0.161	0.179	-25.963	-15.492	-2.767	48.580	8.677
136.000	0.001	0.001	-25.963	-15.963	-0.016	51.245	0.051
136.001	0.263	0.283	-21.496	-14.389	-4.072	52.218	14.778
136.264	0.078	0.084	-21.496	-15.342	-1.287	52.865	4.436
136.342	0.263	0.273	-15.545	-11.920	-3.258	55.249	15.101
136.606	0.085	0.088	-15.545	-12.540	-1.105	57.376	5.056
136.691	0.263	0.268	-10.494	-8.637	-2.313	59.148	15.840
136.954	0.041	0.042	-10.494	-8.950	-0.375	59.380	2.485
136.995	0.263	0.264	-5.262	-3.962	-1.048	59.446	15.720
137.258	0.081	0.081	-5.262	-4.092	-0.331	61.752	4.998
137.339	0.263	0.263	-1.017	0.458	0.121	59.496	15.669
137.602	0.121	0.121	-1.017	0.472	0.057	62.226	7.542
137.723	0.263	0.263	1.874	3.859	1.017	61.122	16.103
137.987	0.013	0.013	1.874	3.930	0.052	62.064	0.824
138.000	0.220	0.221	1.874	4.040	0.891	63.075	13.915
138.220	0.263	0.264	3.772	6.701	1.768	63.847	16.849
138.484	0.144	0.144	3.772	6.997	1.011	65.113	9.408
138.628	0.263	0.265	6.302	10.762	2.851	65.152	17.260
138.891	0.029	0.029	6.302	11.058	0.319	65.894	1.901
138.920	0.077	0.078	6.302	11.224	0.875	66.380	5.174
138.997	0.263	0.267	9.201	16.080	4.289	65.902	17.579
139.261	0.077	0.078	9.201	16.867	1.309	67.900	5.269
139.337	0.263	0.269	12.138	22.201	5.980	66.622	17.944
139.601	0.096	0.099	12.138	23.206	2.290	68.385	6.749
139.697	0.263	0.272	14.855	28.573	7.784	67.898	18.497

139.961	0.039	0.041	14.855	29.531	1.207	69.374	2.835
140.000	0.031	0.032	14.855	29.679	0.954	69.585	2.237
140.031	0.263	0.276	17.537	34.146	9.430	67.473	18.633
140.294	0.090	0.095	17.537	34.395	3.256	67.950	6.432
140.385	0.263	0.280	19.840	38.102	10.666	66.302	18.560
140.648	0.109	0.116	19.840	38.333	4.433	66.789	7.723
140.757	0.263	0.283	21.675	41.176	11.668	65.554	18.575
141.020	0.163	0.175	21.675	41.401	7.261	66.074	11.588
141.183	0.263	0.284	22.188	42.335	12.039	66.087	18.794
141.446	0.135	0.146	22.188	42.532	6.197	66.604	9.705
141.581	0.263	0.286	22.751	43.499	12.421	66.536	18.999
141.845	0.119	0.129	22.751	43.676	5.633	66.831	8.619
141.964	0.263	0.287	23.332	44.635	12.800	66.689	19.125
142.227	0.110	0.119	23.332	44.793	5.353	66.905	7.995
142.337	0.263	0.288	23.925	45.736	13.175	66.687	19.211
142.600	0.108	0.119	23.925	45.878	5.445	66.863	7.936
142.708	0.263	0.289	24.492	46.758	13.530	66.625	19.279
142.972	0.028	0.031	24.492	46.857	1.456	66.751	2.074
143.000	0.077	0.085	24.492	46.927	3.980	66.827	5.668
143.077	0.263	0.291	25.052	47.908	13.925	66.738	19.399
143.341	0.110	0.121	25.052	48.184	5.850	67.065	8.143
143.450	0.263	0.292	25.592	49.142	14.348	67.032	19.571
143.714	0.117	0.129	25.592	49.408	6.396	67.364	8.721
143.831	0.263	0.293	26.099	50.306	14.751	67.397	19.762
144.094	0.131	0.146	26.099	50.569	7.377	67.813	9.892
144.225	0.263	0.295	26.745	51.621	15.221	67.642	19.945
144.488	0.115	0.129	26.745	51.854	6.670	67.808	8.723
144.603	0.263	0.297	27.423	52.895	15.692	67.725	20.091
144.866	0.108	0.122	27.423	53.103	6.477	67.906	8.283
144.975	0.263	0.299	28.115	54.113	16.155	67.837	20.253
145.238	0.103	0.117	28.115	54.296	6.348	67.961	7.945
145.341	0.159	0.181	28.799	55.201	10.008	67.836	12.299
145.500	0.212	0.242	28.799	55.333	13.407	68.128	16.507
145.712	0.263	0.302	29.473	56.202	16.999	68.080	20.592
145.976	0.103	0.118	29.473	56.286	6.667	68.079	8.064
146.079	0.263	0.304	30.137	57.060	17.374	68.079	20.729
146.342	0.108	0.125	30.137	57.120	7.128	68.078	8.495
146.450	0.263	0.306	30.773	57.813	17.718	68.203	20.902
146.713	0.114	0.133	30.773	57.849	7.688	68.510	9.105
146.828	0.263	0.308	31.366	58.449	18.025	68.066	20.991
147.091	0.129	0.151	31.366	58.461	8.832	67.992	10.272
147.220	0.263	0.310	31.808	58.879	18.244	67.875	21.032
147.483	0.117	0.138	31.808	58.871	8.104	67.479	9.289
147.600	0.263	0.311	32.267	59.269	18.457	67.324	20.966
147.863	0.111	0.131	32.267	59.242	7.774	66.916	8.781
147.974	0.026	0.030	32.733	59.640	1.815	66.537	2.025
148.000	0.263	0.313	32.733	59.291	18.560	66.809	20.913
148.263	0.082	0.097	32.733	58.839	5.707	66.337	6.435
148.345	0.263	0.315	33.195	58.755	18.489	66.330	20.872
148.608	0.109	0.130	33.195	58.243	7.588	65.876	8.583
148.717	0.263	0.316	33.653	58.075	18.371	66.032	20.888
148.981	0.107	0.129	33.653	57.541	7.422	66.122	8.529
149.088	0.263	0.318	34.104	57.325	18.230	65.768	20.915
149.351	0.111	0.134	34.104	56.761	7.617	64.271	8.625
149.462	0.263	0.320	34.540	56.486	18.057	63.793	20.393
149.726	0.117	0.143	34.540	55.889	7.966	62.634	8.928
149.843	0.263	0.321	34.951	55.547	17.845	62.027	19.927
150.106	0.129	0.158	34.951	54.908	8.673	60.902	9.619
150.236	0.044	0.054	35.625	55.030	2.985	60.327	3.272
150.280	0.263	0.324	35.625	54.301	17.591	59.973	19.428
150.543	0.070	0.086	35.625	53.477	4.578	59.085	5.058
150.613	0.263	0.327	36.328	53.005	17.324	58.524	19.128
150.876	0.108	0.134	36.328	52.045	6.948	57.593	7.689
150.984	0.263	0.330	37.041	51.397	16.956	57.054	18.822
151.247	0.103	0.128	37.041	50.409	6.476	56.083	7.205
151.350	0.263	0.333	37.740	49.683	16.544	55.662	18.534
151.613	0.108	0.136	37.740	48.638	6.631	53.839	7.340
151.721	0.263	0.336	38.434	47.815	16.073	53.260	17.904
151.984	0.104	0.133	38.434	46.738	6.219	51.978	6.916
152.088	0.263	0.339	39.110	45.840	15.556	51.289	17.405
152.352	0.111	0.142	39.110	44.702	6.367	50.149	7.142
152.462	0.263	0.342	39.749	43.702	14.968	49.342	16.899
152.725	0.120	0.156	39.749	42.496	6.625	48.126	7.503
152.845	0.263	0.345	40.334	41.388	14.297	47.115	16.275
153.109	0.139	0.183	40.334	40.079	7.333	45.677	8.357

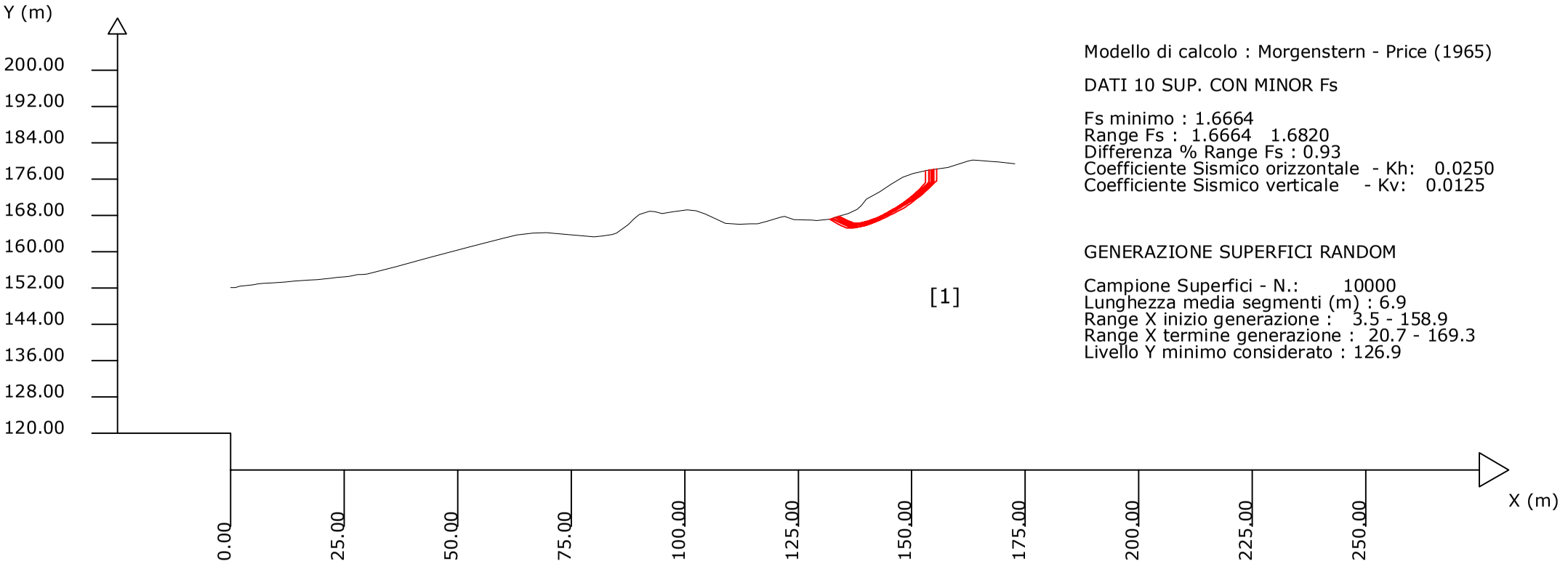
153.248	0.252	0.336	41.348	38.930	13.061	44.760	15.017
153.500	0.126	0.167	41.348	37.587	6.284	43.086	7.204
153.626	0.263	0.357	42.425	36.162	12.900	41.190	14.693
153.889	0.105	0.143	42.425	34.680	4.943	39.048	5.566
153.994	0.263	0.363	43.517	33.207	12.058	36.927	13.409
154.257	0.097	0.134	43.517	31.689	4.240	35.255	4.717
154.354	0.263	0.370	44.569	30.131	11.137	33.834	12.506

LEGENDA SIMBOLI

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

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

Data : 14/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Morgenstern - Price (1965)

DATI 10 SUP. CON MINOR Fs

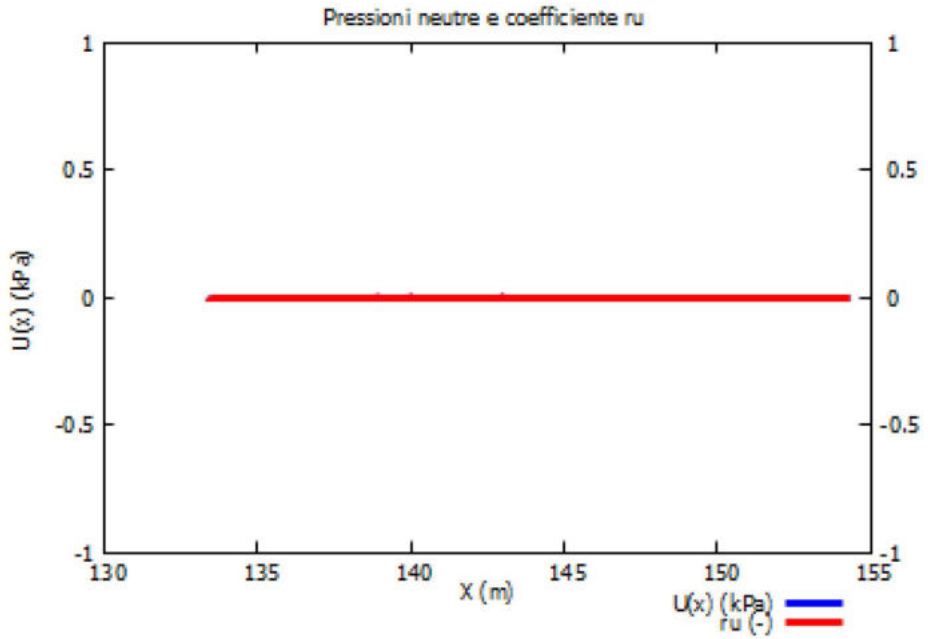
Fs minimo : 1.6664
Range Fs : 1.6664 1.6820
Differenza % Range Fs : 0.93
Coefficiente Sismico orizzontale - Kh: 0.0250
Coefficiente Sismico verticale - Kv: 0.0125

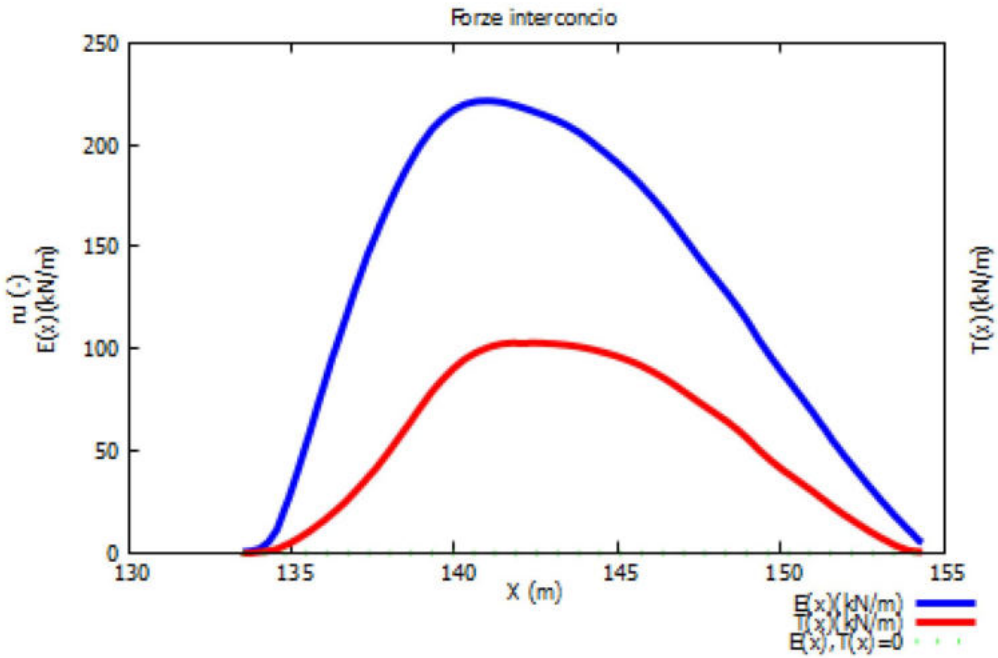
GENERAZIONE SUPERFICI RANDOM

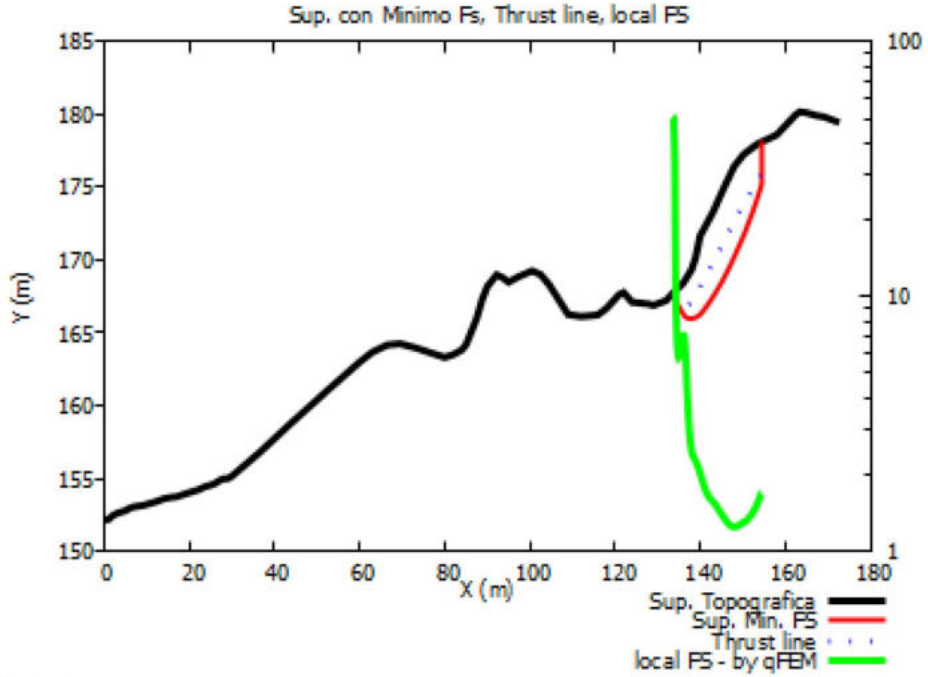
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 6.9
Range X inizio generazione : 3.5 - 158.9
Range X termine generazione : 20.7 - 169.3
Livello Y minimo considerato : 126.9

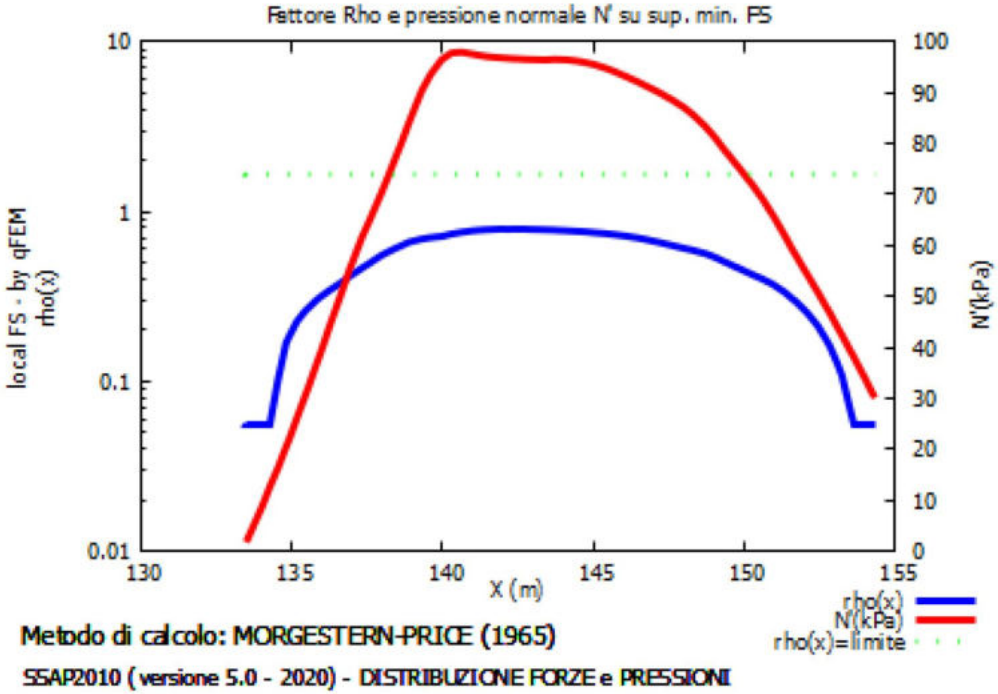
Parametri Geotecnici degli strati # ----------

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





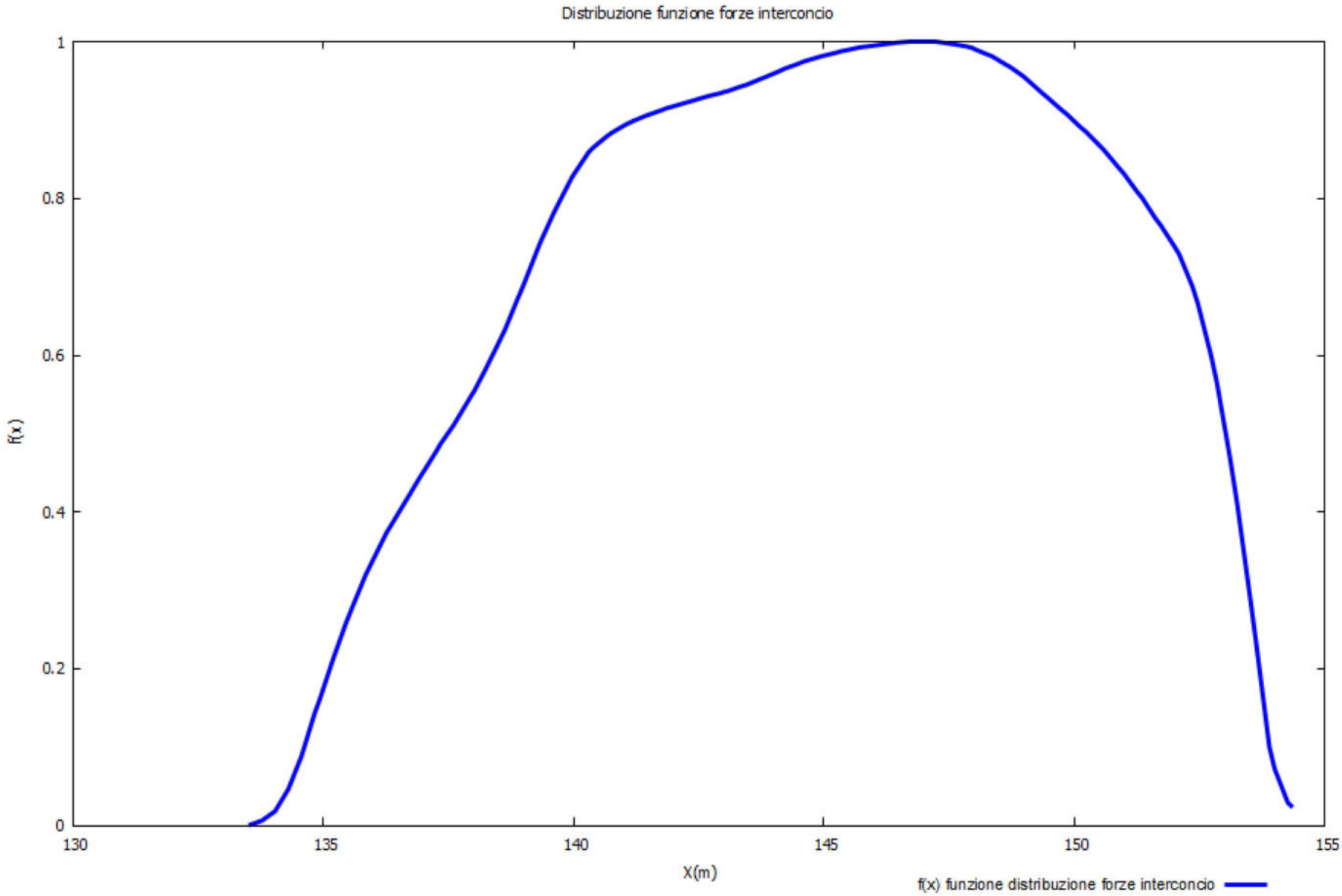


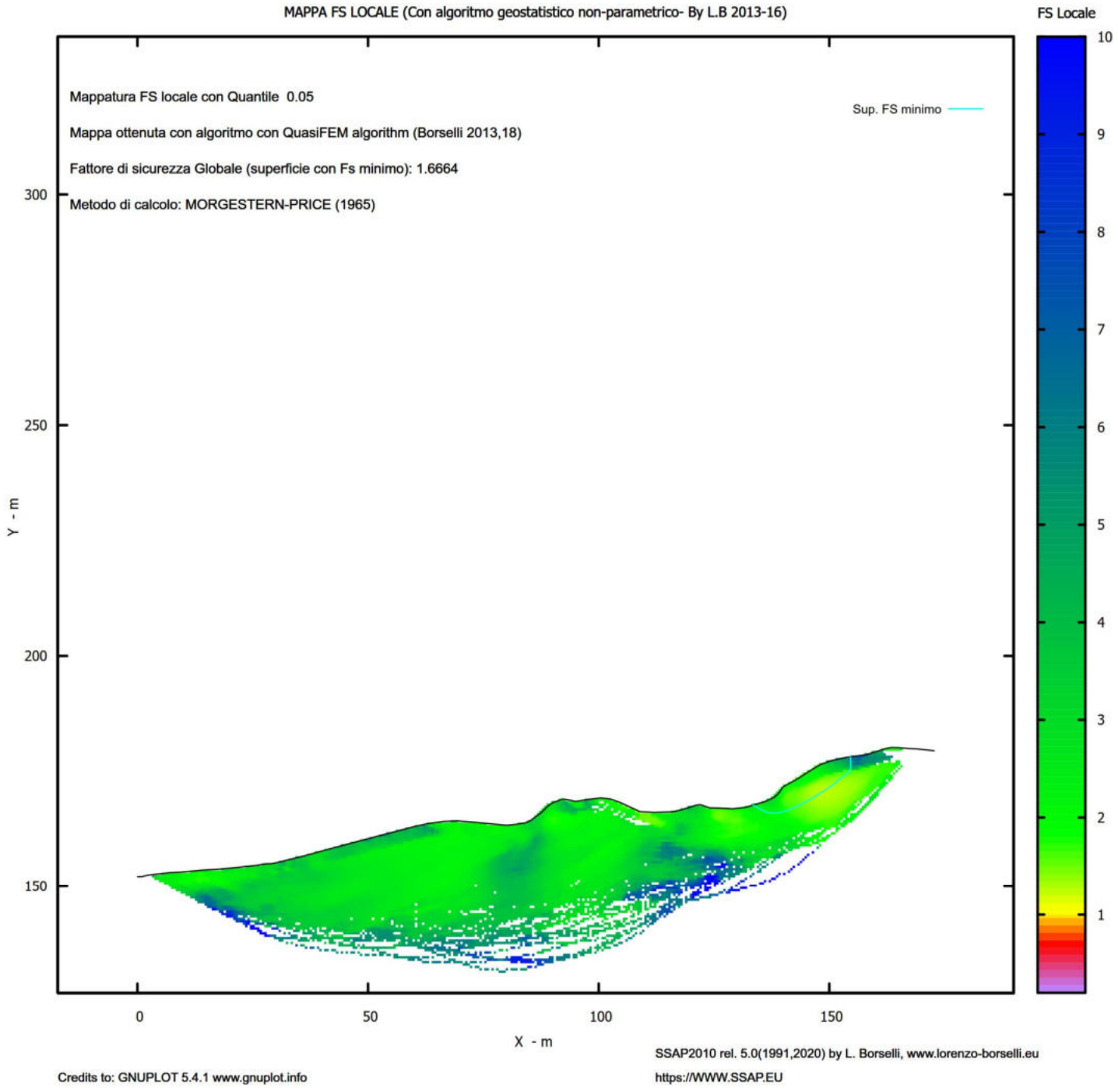


Metodo di calcolo: MORGESTERN-PRICE (1965)

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

14/11/21 12:22


Distribuzione funzione forze interconcio
1
0.8
0.6
0.4
0.2
0
F(x)
130
135
140
145
150
155
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): 1.6664
Metodo di calcolo: MORGESTERN-PRICE (1965)
Sup. FS minimo
Y - m
X - m
300
250
200
150
0
50
100
150
10
9
8
7
6
5
4
3
2
1
Credits to: GNUPLOT 5.4.1 www.gnuplot.info
SSAP2010 rel. 5.0(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\MIADONNA\VERIFICA3\DRENATA\BERSELLI\BERSELLI.txt
Data: 14/11/2021
Localita' :
Descrizione:
Modello pendio: VERIFICA3DRENATA.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	152.14	-	-	-	-	-	-
1.00	152.17	-	-	-	-	-	-
2.00	152.43	-	-	-	-	-	-
3.00	152.59	-	-	-	-	-	-
5.00	152.78	-	-	-	-	-	-
6.00	152.94	-	-	-	-	-	-
7.00	153.04	-	-	-	-	-	-
9.09	153.13	-	-	-	-	-	-
12.10	153.38	-	-	-	-	-	-
14.00	153.59	-	-	-	-	-	-
15.50	153.68	-	-	-	-	-	-
17.00	153.73	-	-	-	-	-	-
19.00	153.92	-	-	-	-	-	-
22.00	154.19	-	-	-	-	-	-
23.50	154.40	-	-	-	-	-	-
25.00	154.52	-	-	-	-	-	-
26.00	154.64	-	-	-	-	-	-
27.00	154.83	-	-	-	-	-	-
28.00	154.96	-	-	-	-	-	-
29.00	154.97	-	-	-	-	-	-
30.00	155.15	-	-	-	-	-	-
36.50	156.77	-	-	-	-	-	-
43.50	158.68	-	-	-	-	-	-
52.50	161.06	-	-	-	-	-	-
60.00	162.99	-	-	-	-	-	-
63.00	163.67	-	-	-	-	-	-
66.50	164.16	-	-	-	-	-	-
69.50	164.24	-	-	-	-	-	-
73.00	163.97	-	-	-	-	-	-
80.00	163.30	-	-	-	-	-	-
82.00	163.50	-	-	-	-	-	-
84.00	163.82	-	-	-	-	-	-
85.00	164.18	-	-	-	-	-	-
87.50	165.99	-	-	-	-	-	-
88.81	167.30	-	-	-	-	-	-
90.00	168.19	-	-	-	-	-	-
92.19	168.98	-	-	-	-	-	-
93.50	168.80	-	-	-	-	-	-
95.00	168.48	-	-	-	-	-	-
97.50	168.87	-	-	-	-	-	-
100.50	169.25	-	-	-	-	-	-
102.50	169.00	-	-	-	-	-	-
104.50	168.31	-	-	-	-	-	-
109.00	166.25	-	-	-	-	-	-
112.00	166.12	-	-	-	-	-	-

114.50	166.18	-	-	-	-	-	-
116.00	166.23	-	-	-	-	-	-
118.00	166.68	-	-	-	-	-	-
121.00	167.63	-	-	-	-	-	-
122.00	167.77	-	-	-	-	-	-
124.00	167.10	-	-	-	-	-	-
128.00	166.97	-	-	-	-	-	-
129.00	166.88	-	-	-	-	-	-
132.00	167.21	-	-	-	-	-	-
133.50	167.69	-	-	-	-	-	-
136.00	168.40	-	-	-	-	-	-
138.00	169.34	-	-	-	-	-	-
138.92	170.13	-	-	-	-	-	-
140.00	171.66	-	-	-	-	-	-
143.00	173.28	-	-	-	-	-	-
145.50	174.90	-	-	-	-	-	-
148.00	176.44	-	-	-	-	-	-
150.28	177.28	-	-	-	-	-	-
153.50	177.98	-	-	-	-	-	-
158.00	178.60	-	-	-	-	-	-
162.50	180.00	-	-	-	-	-	-
163.50	180.18	-	-	-	-	-	-
165.00	180.12	-	-	-	-	-	-
167.50	179.91	-	-	-	-	-	-
169.00	179.85	-	-	-	-	-	-
172.73	179.45	-	-	-	-	-	-

ASSENZA DI FALDA

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

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

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

---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
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): 6.9 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 3.45 158.91
LIVELLO MINIMO CONSIDERATO (Ymin): 126.90
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 20.73 169.28

*** 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 : 0.0250
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0125
COEFFICIENTE c=Kv/Kh UTILIZZATO : 0.5000
FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00

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

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

Fattore di sicurezza (FS) 1.6730 - Min. - X Y Lambda= 0.3323

X	Y
133.85	167.79
135.06	167.06
135.63	166.73
136.00	166.54
136.31	166.41
136.62	166.31
136.89	166.25
137.19	166.20
137.53	166.17
137.96	166.15
138.31	166.14
138.63	166.15
138.92	166.18
139.23	166.22
139.52	166.28
139.83	166.36
140.16	166.45
140.54	166.58
140.88	166.70
141.21	166.82
141.53	166.94
141.85	167.07
142.16	167.21
142.48	167.36
142.81	167.51
143.16	167.69
143.49	167.86
143.82	168.03
144.14	168.20
144.47	168.37
144.79	168.55
145.11	168.73
145.44	168.92
145.77	169.11
146.10	169.31
146.43	169.50
146.76	169.69
147.08	169.89
147.41	170.09
147.74	170.29
148.07	170.49
148.41	170.70
148.74	170.91
149.06	171.12
149.37	171.33
149.70	171.56
150.01	171.78
150.34	172.02
150.67	172.28
151.01	172.55
151.34	172.81
151.67	173.08
151.99	173.34
152.31	173.62
152.63	173.90
152.95	174.19
153.28	174.49
153.62	174.81
153.95	175.12
154.21	175.37
154.21	178.08

Fattore di sicurezza (FS) 1.6737 - N.2 -- X Y Lambda= 0.3343

X	Y
133.56	167.71
135.16	166.71
135.88	166.28
136.35	166.05
136.71	165.90
137.09	165.81
137.41	165.76
137.78	165.75

138.20 165.78
138.78 165.85
139.24 165.92
139.65 166.00
140.03 166.10
140.43 166.23
140.79 166.36
141.18 166.53
141.59 166.73
142.06 166.97
142.50 167.20
142.93 167.43
143.36 167.65
143.77 167.87
144.19 168.09
144.61 168.31
145.03 168.54
145.46 168.77
145.88 168.99
146.29 169.22
146.69 169.46
147.11 169.70
147.52 169.95
147.94 170.20
148.37 170.48
148.82 170.77
149.24 171.05
149.64 171.34
150.03 171.63
150.44 171.96
150.83 172.29
151.24 172.65
151.65 173.04
152.10 173.47
152.53 173.89
152.95 174.30
153.37 174.72
153.78 175.14
154.04 175.40
154.04 178.05

Fattore di sicurezza (FS) 1.6824 - N.3 -- X Y Lambda= 0.3364
132.43 167.35
134.31 166.28
135.14 165.84
135.67 165.60
136.08 165.47
136.51 165.40
136.87 165.38
137.29 165.41
137.77 165.49
138.43 165.64
138.97 165.77
139.46 165.91
139.91 166.06
140.38 166.24
140.82 166.42
141.29 166.63
141.77 166.87
142.30 167.15
142.80 167.42
143.29 167.69
143.77 167.96
144.25 168.23
144.72 168.51
145.20 168.80
145.69 169.10
146.20 169.42
146.68 169.73
147.16 170.04
147.63 170.36
148.11 170.69
148.58 171.03
149.07 171.39

149.57 171.76
150.11 172.18
150.59 172.57
151.05 172.97
151.49 173.39
151.96 173.87
152.46 174.42
153.04 175.09
153.04 177.88

Fattore di sicurezza (FS) 1.6828 - N.4 -- X Y Lambda= 0.3302
134.33 167.92
135.79 167.13
136.45 166.80
136.88 166.62
137.21 166.51
137.56 166.44
137.85 166.42
138.19 166.42
138.57 166.46
139.07 166.54
139.50 166.62
139.88 166.71
140.25 166.80
140.62 166.91
140.97 167.02
141.34 167.15
141.72 167.30
142.14 167.48
142.54 167.65
142.92 167.83
143.30 168.00
143.67 168.19
144.04 168.37
144.42 168.57
144.80 168.77
145.20 169.00
145.59 169.21
145.97 169.43
146.35 169.65
146.73 169.88
147.10 170.11
147.49 170.35
147.88 170.61
148.30 170.88
148.68 171.14
149.05 171.41
149.40 171.69
149.77 172.00
150.13 172.31
150.50 172.65
150.88 173.02
151.29 173.44
151.69 173.85
152.07 174.25
152.45 174.65
152.83 175.06
152.83 177.83

Fattore di sicurezza (FS) 1.6832 - N.5 -- X Y Lambda= 0.3346
132.77 167.46
134.46 166.55
135.23 166.17
135.72 165.97
136.10 165.85
136.50 165.78
136.84 165.76
137.22 165.77
137.66 165.83
138.23 165.93
138.72 166.03
139.18 166.13
139.61 166.23

140.04 166.35
140.47 166.47
140.90 166.60
141.35 166.75
141.83 166.92
142.28 167.08
142.72 167.25
143.14 167.43
143.57 167.62
143.99 167.81
144.43 168.02
144.87 168.24
145.33 168.49
145.79 168.73
146.23 168.97
146.67 169.21
147.11 169.45
147.54 169.70
147.99 169.96
148.44 170.22
148.91 170.50
149.35 170.77
149.78 171.05
150.20 171.33
150.63 171.63
151.06 171.94
151.50 172.27
151.95 172.63
152.44 173.03
152.89 173.41
153.32 173.79
153.73 174.19
154.16 174.63
154.63 175.13
154.89 175.43
154.89 178.17

Fattore di sicurezza (FS) 1.6892 - N.6 -- X Y Lambda= 0.3410
133.95 167.82
135.82 167.09
136.65 166.79
137.18 166.65
137.58 166.59
138.01 166.58
138.37 166.62
138.79 166.72
139.26 166.86
139.88 167.09
140.43 167.30
140.93 167.51
141.40 167.71
141.87 167.92
142.33 168.15
142.80 168.38
143.28 168.63
143.79 168.91
144.28 169.18
144.76 169.45
145.24 169.72
145.72 169.99
146.20 170.27
146.68 170.55
147.17 170.84
147.68 171.14
148.15 171.44
148.62 171.74
149.09 172.05
149.56 172.37
150.02 172.70
150.49 173.05
150.97 173.42
151.48 173.82
151.97 174.21
152.45 174.59

152.93 174.98
153.18 175.20
153.18 177.91

Fattore di sicurezza (FS) 1.6902 - N.7 -- X Y Lambda= 0.3324
133.65 167.73
135.25 167.08
135.99 166.79
136.47 166.64
136.86 166.55
137.26 166.49
137.61 166.47
138.00 166.48
138.43 166.52
138.97 166.60
139.43 166.67
139.86 166.76
140.26 166.85
140.68 166.96
141.07 167.08
141.49 167.21
141.92 167.37
142.40 167.56
142.84 167.73
143.26 167.92
143.67 168.11
144.09 168.31
144.49 168.52
144.90 168.75
145.33 168.99
145.78 169.26
146.22 169.53
146.65 169.79
147.07 170.05
147.50 170.31
147.92 170.58
148.35 170.85
148.78 171.13
149.23 171.42
149.65 171.70
150.07 171.99
150.48 172.28
150.90 172.59
151.32 172.90
151.74 173.22
152.18 173.56
152.63 173.92
153.06 174.28
153.48 174.63
153.89 175.00
154.31 175.38
154.31 178.09

Fattore di sicurezza (FS) 1.6910 - N.8 -- X Y Lambda= 0.3326
133.64 167.73
135.52 166.90
136.37 166.55
136.91 166.37
137.34 166.27
137.79 166.23
138.17 166.22
138.60 166.26
139.09 166.35
139.71 166.49
140.26 166.63
140.76 166.76
141.24 166.90
141.72 167.05
142.20 167.21
142.68 167.38
143.19 167.58
143.74 167.80
144.24 168.01

144.71 168.24
145.17 168.47
145.64 168.73
146.09 169.01
146.56 169.31
147.05 169.64
147.58 170.01
148.09 170.38
148.59 170.74
149.08 171.10
149.57 171.46
150.06 171.83
150.56 172.20
151.06 172.58
151.58 172.98
152.07 173.36
152.54 173.76
153.01 174.17
153.49 174.61
154.01 175.12
154.27 175.38
154.27 178.09

Fattore di sicurezza (FS) 1.6917 - N.9 -- X Y Lambda= 0.3340
132.47 167.36
133.90 166.54
134.55 166.18
134.98 165.98
135.32 165.85
135.67 165.76
135.97 165.71
136.32 165.68
136.70 165.68
137.19 165.71
137.61 165.74
137.98 165.79
138.33 165.85
138.69 165.93
139.03 166.02
139.38 166.13
139.76 166.26
140.17 166.42
140.57 166.57
140.96 166.72
141.34 166.87
141.71 167.02
142.09 167.17
142.47 167.32
142.85 167.48
143.23 167.64
143.61 167.79
143.98 167.95
144.36 168.11
144.73 168.28
145.11 168.44
145.49 168.61
145.88 168.78
146.28 168.97
146.65 169.14
147.02 169.33
147.38 169.52
147.75 169.73
148.10 169.94
148.47 170.16
148.85 170.41
149.24 170.67
149.63 170.93
150.01 171.19
150.39 171.45
150.77 171.70
151.14 171.96
151.52 172.22
151.89 172.48
152.27 172.75

152.65 173.01
153.03 173.28
153.41 173.55
153.78 173.81
154.16 174.07
154.54 174.34
154.92 174.60
155.29 174.87
155.67 175.13
156.05 175.40
156.35 175.61
156.35 178.37

Fattore di sicurezza (FS) 1.6918 - N.10 -- X Y Lambda= 0.3380
133.64 167.73
134.83 167.00
135.38 166.68
135.72 166.50
136.00 166.39
136.29 166.31
136.53 166.27
136.81 166.26
137.13 166.27
137.55 166.30
137.89 166.34
138.20 166.39
138.49 166.44
138.79 166.52
139.07 166.60
139.36 166.71
139.67 166.83
140.02 166.98
140.35 167.13
140.67 167.27
140.98 167.41
141.29 167.56
141.59 167.70
141.90 167.86
142.21 168.01
142.53 168.17
142.85 168.34
143.16 168.50
143.47 168.66
143.79 168.82
144.10 168.98
144.42 169.14
144.74 169.31
145.06 169.47
145.37 169.64
145.67 169.81
145.97 169.98
146.28 170.16
146.58 170.35
146.89 170.55
147.22 170.76
147.56 171.00
147.88 171.23
148.18 171.46
148.47 171.70
148.77 171.96
149.07 172.23
149.37 172.52
149.69 172.84
150.04 173.21
150.36 173.56
150.67 173.91
150.96 174.27
151.27 174.66
151.27 177.50

---------- 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	1.673	1340.9	801.5	459.2	Surplus
2	1.674	1393.9	832.8	477.8	Surplus
3	1.682	1365.6	811.7	472.7	Surplus
4	1.683	1196.8	711.2	414.5	Surplus
5	1.683	1478.3	878.3	512.2	Surplus
6	1.689	1126.3	666.8	392.8	Surplus
7	1.690	1296.7	767.2	452.8	Surplus
8	1.691	1355.9	801.8	473.9	Surplus
9	1.692	1562.2	923.4	546.4	Surplus
10	1.692	1067.8	631.2	373.5	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 373.5

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)
133.845	0.260	-31.02	0.61	0.00	0.00	26.00	19.50
134.105	0.260	-31.02	1.82	0.00	0.00	26.00	19.50
134.366	0.260	-31.02	3.03	0.00	0.00	26.00	19.50
134.626	0.260	-31.02	4.25	0.00	0.00	26.00	19.50
134.886	0.175	-31.02	3.54	0.00	0.00	26.00	19.50
135.061	0.260	-29.78	6.25	0.00	0.00	26.00	19.50
135.321	0.260	-29.78	7.43	0.00	0.00	26.00	19.50
135.581	0.047	-29.78	1.46	0.00	0.00	26.00	19.50
135.628	0.260	-26.91	8.77	0.00	0.00	26.00	19.50
135.888	0.112	-26.91	4.11	0.00	0.00	26.00	19.50
136.000	0.002	-26.91	0.09	0.00	0.00	26.00	19.50
136.002	0.260	-23.04	10.40	0.00	0.00	26.00	19.50
136.263	0.046	-23.04	1.98	0.00	0.00	26.00	19.50
136.309	0.260	-17.93	11.78	0.00	0.00	26.00	19.50
136.569	0.047	-17.93	2.23	0.00	0.00	26.00	19.50
136.616	0.260	-13.59	13.00	0.00	0.00	26.00	19.50
136.876	0.014	-13.59	0.72	0.00	0.00	26.00	19.50
136.890	0.260	-9.10	13.98	0.00	0.00	26.00	19.50
137.150	0.045	-9.10	2.48	0.00	0.00	26.00	19.50
137.194	0.260	-5.32	14.94	0.00	0.00	26.00	19.50
137.454	0.077	-5.32	4.56	0.00	0.00	26.00	19.50
137.531	0.260	-2.62	15.91	0.00	0.00	26.00	19.50
137.791	0.166	-2.62	10.52	0.00	0.00	26.00	19.50
137.957	0.043	-0.67	2.76	0.00	0.00	26.00	19.50
138.000	0.260	-0.67	17.42	0.00	0.00	26.00	19.50
138.260	0.047	-0.67	3.27	0.00	0.00	26.00	19.50
138.307	0.260	1.95	18.79	0.00	0.00	26.00	19.50
138.567	0.058	1.95	4.37	0.00	0.00	26.00	19.50
138.626	0.260	4.98	20.14	0.00	0.00	26.00	19.50
138.886	0.033	4.98	2.62	0.00	0.00	26.00	19.50
138.918	0.002	8.06	0.12	0.00	0.00	26.00	19.50
138.920	0.260	8.06	21.68	0.00	0.00	26.00	19.50
139.180	0.051	8.06	4.43	0.00	0.00	26.00	19.50
139.231	0.260	10.97	23.73	0.00	0.00	26.00	19.50
139.491	0.029	10.97	2.76	0.00	0.00	26.00	19.50
139.520	0.260	13.84	25.56	0.00	0.00	26.00	19.50
139.780	0.048	13.84	4.93	0.00	0.00	26.00	19.50
139.829	0.171	16.29	17.90	0.00	0.00	26.00	19.50
140.000	0.156	16.29	16.68	0.00	0.00	26.00	19.50
140.156	0.260	18.21	28.02	0.00	0.00	26.00	19.50
140.416	0.121	18.21	13.15	0.00	0.00	26.00	19.50
140.537	0.260	19.14	28.44	0.00	0.00	26.00	19.50
140.798	0.086	19.14	9.42	0.00	0.00	26.00	19.50
140.883	0.260	20.21	28.77	0.00	0.00	26.00	19.50

141.143	0.069	20.21	7.65	0.00	0.00	26.00	19.50
141.212	0.260	21.33	29.06	0.00	0.00	26.00	19.50
141.472	0.057	21.33	6.40	0.00	0.00	26.00	19.50
141.529	0.260	22.45	29.29	0.00	0.00	26.00	19.50
141.790	0.061	22.45	6.92	0.00	0.00	26.00	19.50
141.851	0.260	23.52	29.49	0.00	0.00	26.00	19.50
142.111	0.053	23.52	6.04	0.00	0.00	26.00	19.50
142.164	0.260	24.58	29.65	0.00	0.00	26.00	19.50
142.424	0.060	24.58	6.84	0.00	0.00	26.00	19.50
142.484	0.260	25.56	29.77	0.00	0.00	26.00	19.50
142.744	0.067	25.56	7.72	0.00	0.00	26.00	19.50
142.811	0.189	26.45	21.64	0.00	0.00	26.00	19.50
143.000	0.159	26.45	18.30	0.00	0.00	26.00	19.50
143.159	0.260	26.91	30.10	0.00	0.00	26.00	19.50
143.419	0.074	26.91	8.61	0.00	0.00	26.00	19.50
143.493	0.260	27.39	30.34	0.00	0.00	26.00	19.50
143.753	0.067	27.39	7.85	0.00	0.00	26.00	19.50
143.820	0.260	27.89	30.56	0.00	0.00	26.00	19.50
144.081	0.063	27.89	7.40	0.00	0.00	26.00	19.50
144.143	0.260	28.38	30.75	0.00	0.00	26.00	19.50
144.403	0.064	28.38	7.57	0.00	0.00	26.00	19.50
144.467	0.260	28.86	30.93	0.00	0.00	26.00	19.50
144.727	0.061	28.86	7.28	0.00	0.00	26.00	19.50
144.789	0.260	29.33	31.08	0.00	0.00	26.00	19.50
145.049	0.063	29.33	7.60	0.00	0.00	26.00	19.50
145.112	0.260	29.79	31.22	0.00	0.00	26.00	19.50
145.372	0.067	29.79	8.03	0.00	0.00	26.00	19.50
145.439	0.061	30.23	7.35	0.00	0.00	26.00	19.50
145.500	0.260	30.23	31.35	0.00	0.00	26.00	19.50
145.760	0.013	30.23	1.59	0.00	0.00	26.00	19.50
145.773	0.260	30.40	31.39	0.00	0.00	26.00	19.50
146.033	0.071	30.40	8.52	0.00	0.00	26.00	19.50
146.104	0.260	30.58	31.44	0.00	0.00	26.00	19.50
146.364	0.067	30.58	8.14	0.00	0.00	26.00	19.50
146.431	0.260	30.76	31.48	0.00	0.00	26.00	19.50
146.691	0.066	30.76	8.03	0.00	0.00	26.00	19.50
146.758	0.260	30.94	31.51	0.00	0.00	26.00	19.50
147.018	0.065	30.94	7.90	0.00	0.00	26.00	19.50
147.083	0.260	31.11	31.54	0.00	0.00	26.00	19.50
147.343	0.067	31.11	8.13	0.00	0.00	26.00	19.50
147.410	0.260	31.29	31.56	0.00	0.00	26.00	19.50
147.670	0.069	31.29	8.34	0.00	0.00	26.00	19.50
147.739	0.260	31.46	31.57	0.00	0.00	26.00	19.50
147.999	0.001	31.46	0.10	0.00	0.00	26.00	19.50
148.000	0.073	31.46	8.80	0.00	0.00	26.00	19.50
148.073	0.260	31.63	31.31	0.00	0.00	26.00	19.50
148.333	0.080	31.63	9.50	0.00	0.00	26.00	19.50
148.412	0.260	32.43	30.85	0.00	0.00	26.00	19.50
148.672	0.065	32.43	7.66	0.00	0.00	26.00	19.50
148.737	0.260	33.26	30.38	0.00	0.00	26.00	19.50
148.998	0.060	33.26	7.00	0.00	0.00	26.00	19.50
149.058	0.260	34.11	29.88	0.00	0.00	26.00	19.50
149.318	0.056	34.11	6.36	0.00	0.00	26.00	19.50
149.374	0.260	34.93	29.35	0.00	0.00	26.00	19.50
149.634	0.062	34.93	6.96	0.00	0.00	26.00	19.50
149.696	0.260	35.75	28.78	0.00	0.00	26.00	19.50
149.957	0.057	35.75	6.26	0.00	0.00	26.00	19.50
150.014	0.260	36.55	28.17	0.00	0.00	26.00	19.50
150.274	0.006	36.55	0.66	0.00	0.00	26.00	19.50
150.280	0.056	36.55	6.04	0.00	0.00	26.00	19.50
150.336	0.260	37.30	27.38	0.00	0.00	26.00	19.50
150.597	0.070	37.30	7.21	0.00	0.00	26.00	19.50
150.666	0.260	37.99	26.42	0.00	0.00	26.00	19.50
150.926	0.086	37.99	8.61	0.00	0.00	26.00	19.50
151.013	0.260	38.63	25.38	0.00	0.00	26.00	19.50
151.273	0.071	38.63	6.81	0.00	0.00	26.00	19.50
151.344	0.260	39.29	24.35	0.00	0.00	26.00	19.50
151.604	0.065	39.29	5.91	0.00	0.00	26.00	19.50
151.669	0.260	39.96	23.31	0.00	0.00	26.00	19.50
151.929	0.060	39.96	5.23	0.00	0.00	26.00	19.50
151.989	0.260	40.63	22.25	0.00	0.00	26.00	19.50
152.249	0.063	40.63	5.26	0.00	0.00	26.00	19.50
152.312	0.260	41.27	21.15	0.00	0.00	26.00	19.50
152.572	0.059	41.27	4.66	0.00	0.00	26.00	19.50
152.631	0.260	41.91	20.02	0.00	0.00	26.00	19.50

152.891	0.062	41.91	4.67	0.00	0.00	26.00	19.50
152.953	0.260	42.51	18.85	0.00	0.00	26.00	19.50
153.214	0.067	42.51	4.70	0.00	0.00	26.00	19.50
153.281	0.219	43.07	14.94	0.00	0.00	26.00	19.50
153.500	0.119	43.07	7.79	0.00	0.00	26.00	19.50
153.619	0.260	43.34	16.25	0.00	0.00	26.00	19.50
153.879	0.071	43.34	4.27	0.00	0.00	26.00	19.50
153.950	0.260	43.62	14.83	0.00	0.00	26.00	19.50

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

X (m)	ht (m)	yt (m)	yt' (--)	E(x) (kN/m)	T(x) (kN/m)	E' (kN)	rho(x) (--)	FS_qFEM (--)	FS_srmFEM (--)		
133.845	0.000	167.788	-0.377	0.0000000000E+000	0.0000000000E+000	5.4974050081E-001	0.056	50.000	50.000		
134.105	0.058	167.689	-0.377	4.5834786092E-001	9.2520447027E-004	2.9743786741E+000	0.056	50.000	50.000		
134.366	0.117	167.592	-0.386	1.5473938708E+000	2.1283906355E-002	8.4138810487E+000	0.056	25.420	15.116		
134.626	0.170	167.489	-0.376	4.8355941335E+000	3.2511124308E-001	2.1426117352E+001	0.056	7.455	5.092		
134.886	0.234	167.397	-0.367	1.2694139561E+001	1.3754542123E+000	4.3498005208E+001	0.095	5.387	3.487		
135.061	0.272	167.329	-0.335	2.1864167498E+001	2.8146829728E+000	4.9787296497E+001	0.149	5.106	3.008		
135.321	0.343	167.251	-0.271	3.3791860500E+001	4.8220597781E+000	4.5533567365E+001	0.193	5.142	2.672		
135.581	0.429	167.188	-0.237	4.5552598185E+001	6.9895221930E+000	4.6544390388E+001	0.225	5.504	2.491		
135.628	0.446	167.178	-0.181	4.7745648296E+001	7.4241517883E+000	4.6839327107E+001	0.231	5.592	2.467		
135.888	0.532	167.133	-0.161	6.0008831303E+001	1.0062485717E+001	4.7639429181E+001	0.264	6.225	2.382		
136.000	0.574	167.118	-0.130	6.5373710634E+001	1.1369339000E+001	4.7500702147E+001	0.279	6.448	2.359		
136.002	0.575	167.118	-0.102	6.5491768100E+001	1.1398937862E+001	4.7491135377E+001	0.280	6.453	2.358		
136.263	0.660	167.092	-0.097	7.7797317633E+001	1.4629038099E+001	5.0956065226E+001	0.311	6.856	2.317		
136.309	0.676	167.088	-0.049	8.0181443265E+001	1.5332700153E+001	5.0888101844E+001	0.318	6.824	2.310		
136.569	0.748	167.077	-0.041	9.2369778217E+001	1.9176492611E+001	4.7226998325E+001	0.354	6.257	2.278		
136.616	0.762	167.076	0.004	9.4576767100E+001	1.9933925417E+001	4.7900054697E+001	0.361	6.065	2.272		
136.876	0.828	167.078	0.010	1.0791606967E+002	2.5106260094E+001	4.8974953405E+001	0.409	4.817	2.235		
136.890	0.831	167.078	0.067	1.0859103539E+002	2.5389972274E+001	4.8900120005E+001	0.412	4.752	2.233		
137.150	0.891	167.096	0.073	1.2154439301E+002	3.1440516075E+001	5.0243806969E+001	0.467	3.679	2.195		
137.194	0.902	167.100	0.127	1.2378660192E+002	3.2565853493E+001	4.9781816892E+001	0.477	3.528	2.189		
137.454	0.961	167.135	0.140	1.3591825256E+002	3.9313525009E+001	4.7142140469E+001	0.535	2.856	2.157		
137.531	0.981	167.147	0.211	1.3954745704E+002	4.1451797992E+001	4.6849917280E+001	0.552	2.703	2.148		
137.791	1.051	167.206	0.238	1.5134544554E+002	4.9027838123E+001	4.3462393981E+001	0.612	2.350	2.133		
137.957	1.102	167.249	0.273	1.5835881372E+002	5.3710335417E+001	4.1974941136E+001	0.646	2.215	2.130		
138.000	1.116	167.263	0.323	1.6015338648E+002	5.4933737320E+001	4.1350781946E+001	0.655	2.190	2.131		
138.260	1.203	167.347	0.334	1.7003729794E+002	6.1680568182E+001	3.6105402314E+001	0.690	2.086	2.142		
138.307	1.222	167.365	0.385	1.7171669874E+002	6.2844040901E+001	3.5127624995E+001	0.695	2.076	2.145		
138.567	1.313	167.465	0.396	1.7993737389E+002	6.8533298554E+001	2.9790624431E+001	0.719	2.045	2.167		
138.626	1.338	167.492	0.459	1.8165111008E+002	6.9749419397E+001	2.8800846627E+001	0.724	2.042	2.172		
138.886	1.435	167.611	0.465	1.8846601991E+002	7.4651877245E+001	2.3402009828E+001	0.741	2.040	2.191		
138.918	1.448	167.628	0.501	1.8922305510E+002	7.5218171370E+001	2.2627744944E+001	0.743	2.040	2.193		
138.920	1.449	167.629	0.529	1.8925728049E+002	7.5244042284E+001	2.2604134475E+001	0.743	2.040	2.193		
139.180	1.550	167.766	0.538	1.9494925796E+002	7.9629610356E+001	2.1608218819E+001	0.746	2.040	2.201		
139.231	1.572	167.796	0.580	1.9604280769E+002	8.0506879546E+001	2.0869005496E+001	0.747	2.039	2.201		
139.491	1.672	167.947	0.580	2.0055661937E+002	8.4457777578E+001	1.7028045892E+001	0.748	2.027	2.188		
139.520	1.684	167.964	0.630	2.0105141733E+002	8.4901097607E+001	1.6740900980E+001	0.749	2.025	2.187		
139.780	1.785	168.129	0.637	2.0482333198E+002	8.8741361066E+001	1.4192255334E+001	0.752	1.996	2.150		
139.829	1.805	168.160	0.651	2.0550719603E+002	8.9463177169E+001	1.3629746621E+001	0.752	1.989	2.142		
140.000	1.866	168.272	0.676	2.0753663596E+002	9.1826078076E+001	1.1806415574E+001	0.754	1.960	2.106		
140.156	1.930	168.382	0.649	2.0937612386E+002	9.4074042242E+001	1.0282857251E+001	0.766	1.929	2.066		
140.416	2.005	168.542	0.599	2.1140427864E+002	9.6923651482E+001	6.5794942163E+000	0.782	1.874	1.997		
140.537	2.033	168.610	0.570	2.1213255217E+002	9.8017450556E+001	5.5170883425E+000	0.787	1.851	1.967		
140.798	2.092	168.759	0.545	2.1329087429E+002	9.9953690672E+001	2.8818448074E+000	0.797	1.799	1.903		
140.883	2.102	168.799	0.500	2.1349345950E+002	1.0034726657E+002	2.1890738531E+000	0.799	1.785	1.887		
141.143	2.139	168.932	0.501	2.1392452186E+002	1.0140124880E+002	4.9963527170E-001	0.803	1.743	1.839		
141.212	2.145	168.964	0.456	2.1393783390E+002	1.0155871583E+002	-6.4437234117E-003	0.803	1.733	1.830		
141.472	2.163	169.082	0.453	2.1373948997E+002	1.0194404179E+002	-1.6226378072E+000	0.804	1.702	1.798		
141.529	2.165	169.107	0.478	2.1363607266E+002	1.0198247829E+002	-1.9950423021E+000	0.804	1.696	1.792		
141.790	2.184	169.234	0.480	2.1289950140E+002	1.0208782112E+002	-3.4053898367E+000	0.803	1.668	1.766		

141.851	2.187	169.261	0.471	2.1268285269E+002	1.0208348907E+002	-3.7143281113E+000	0.803	1.662	1.761
142.111	2.197	169.385	0.472	2.1152432440E+002	1.0198970318E+002	-4.8040985381E+000	0.803	1.637	1.740
142.164	2.198	169.409	0.489	2.1126523642E+002	1.0195647748E+002	-5.1266024887E+000	0.802	1.633	1.736
142.424	2.208	169.538	0.490	2.0961216982E+002	1.0164283860E+002	-6.3739650845E+000	0.801	1.610	1.716
142.484	2.209	169.566	0.514	2.0923012784E+002	1.0155963891E+002	-6.7194613505E+000	0.801	1.606	1.711
142.744	2.221	169.703	0.518	2.0709689953E+002	1.0098495131E+002	-8.0312917792E+000	0.799	1.584	1.690
142.811	2.222	169.736	0.536	2.0655889556E+002	1.0082726332E+002	-8.4590191290E+000	0.799	1.579	1.684
143.000	2.232	169.840	0.553	2.0471508246E+002	1.0022180107E+002	-9.9314721285E+000	0.797	1.563	1.667
143.159	2.241	169.928	0.582	2.0311561875E+002	9.9669665902E+001	-1.0636184382E+001	0.794	1.550	1.652
143.419	2.265	170.084	0.586	2.0010365466E+002	9.8543419888E+001	-1.0959572677E+001	0.787	1.528	1.625
143.493	2.267	170.124	0.594	1.9930488676E+002	9.8231299847E+001	-1.1181765809E+001	0.786	1.523	1.618
143.753	2.291	170.282	0.595	1.9603216837E+002	9.6922018430E+001	-1.1758773287E+001	0.779	1.501	1.589
143.820	2.292	170.319	0.596	1.9525774213E+002	9.6604793429E+001	-1.1924240557E+001	0.777	1.497	1.583
144.081	2.313	170.477	0.597	1.9177505150E+002	9.5157621731E+001	-1.2508457770E+001	0.769	1.476	1.555
144.143	2.314	170.511	0.612	1.9100274307E+002	9.4830321156E+001	-1.2785045486E+001	0.767	1.471	1.549
144.403	2.337	170.675	0.615	1.8715015073E+002	9.3177246542E+001	-1.3691467496E+001	0.759	1.451	1.521
144.467	2.338	170.710	0.599	1.8629324188E+002	9.2806682851E+001	-1.3888892541E+001	0.757	1.446	1.515
144.727	2.354	170.869	0.606	1.8218014405E+002	9.1018378114E+001	-1.4961522873E+001	0.748	1.427	1.489
144.789	2.356	170.905	0.595	1.8127818285E+002	9.0624615742E+001	-1.4988863977E+001	0.746	1.423	1.484
145.049	2.365	171.060	0.596	1.7712769600E+002	8.8807119497E+001	-1.4862343620E+001	0.737	1.405	1.460
145.112	2.367	171.098	0.601	1.7620190548E+002	8.8400897744E+001	-1.4856106021E+001	0.735	1.402	1.456
145.372	2.375	171.255	0.586	1.7205969508E+002	8.6570753180E+001	-1.4674367282E+001	0.725	1.387	1.435
145.439	2.372	171.290	0.525	1.7110165230E+002	8.6145514399E+001	-1.4691071252E+001	0.723	1.383	1.430
145.500	2.368	171.322	0.559	1.7018575882E+002	8.5734328298E+001	-1.5234538520E+001	0.721	1.381	1.426
145.760	2.364	171.469	0.564	1.6596275401E+002	8.3818025381E+001	-1.5267113057E+001	0.712	1.368	1.407
145.773	2.363	171.476	0.586	1.6576195371E+002	8.3724776044E+001	-1.5318474113E+001	0.711	1.367	1.406
146.033	2.364	171.629	0.580	1.6126221226E+002	8.1603606543E+001	-1.6449813095E+001	0.700	1.355	1.386
146.104	2.361	171.668	0.608	1.6011864825E+002	8.1052552023E+001	-1.6733894171E+001	0.697	1.352	1.381
146.364	2.370	171.830	0.615	1.5527238081E+002	7.8665174075E+001	-1.7617562765E+001	0.685	1.341	1.361
146.431	2.369	171.869	0.643	1.5410459529E+002	7.8077363174E+001	-1.7887954695E+001	0.682	1.338	1.356
146.691	2.386	172.041	0.658	1.4891608924E+002	7.5429563962E+001	-1.9782036841E+001	0.667	1.327	1.336
146.758	2.389	172.084	0.624	1.4760779409E+002	7.4748217444E+001	-1.9977282769E+001	0.663	1.325	1.331
147.018	2.394	172.244	0.615	1.4216916935E+002	7.1856743929E+001	-1.9123724126E+001	0.646	1.317	1.314
147.083	2.394	172.284	0.608	1.4095117442E+002	7.1202245526E+001	-1.8856732500E+001	0.642	1.316	1.311
147.343	2.396	172.442	0.609	1.3585900848E+002	6.8410976580E+001	-1.7498646739E+001	0.625	1.312	1.300
147.410	2.396	172.483	0.611	1.3472255871E+002	6.7780483225E+001	-1.7347928645E+001	0.621	1.311	1.298
147.670	2.397	172.642	0.603	1.2982182123E+002	6.4986195813E+001	-1.6849718841E+001	0.603	1.310	1.293
147.739	2.394	172.681	0.538	1.2870028037E+002	6.4332945195E+001	-1.6703416144E+001	0.599	1.309	1.292
147.999	2.373	172.819	0.528	1.2398168199E+002	6.1497786500E+001	-1.6121311224E+001	0.580	1.310	1.291
148.000	2.372	172.819	0.448	1.2396783086E+002	6.1489334190E+001	-1.6113463021E+001	0.580	1.310	1.291
148.073	2.361	172.851	0.495	1.2280515413E+002	6.0768082178E+001	-1.6599186777E+001	0.576	1.310	1.291
148.333	2.333	172.984	0.497	1.1794200211E+002	5.7684442102E+001	-1.7833433845E+001	0.558	1.310	1.295
148.412	2.320	173.020	0.506	1.1654479575E+002	5.6782548172E+001	-1.8152977049E+001	0.553	1.311	1.296
148.672	2.290	173.155	0.511	1.1132663900E+002	5.3399821882E+001	-1.9231469705E+001	0.532	1.312	1.303
148.737	2.280	173.187	0.525	1.1008808026E+002	5.2593464552E+001	-1.9529528444E+001	0.527	1.312	1.305
148.998	2.249	173.326	0.542	1.0448262507E+002	4.8966278148E+001	-2.2940170022E+001	0.504	1.313	1.314
149.058	2.244	173.360	0.593	1.0307716686E+002	4.8074483200E+001	-2.3543655420E+001	0.497	1.314	1.317
149.318	2.223	173.516	0.584	9.6638856606E+001	4.4038837676E+001	-2.2175498722E+001	0.469	1.316	1.329
149.374	2.214	173.545	0.524	9.5431882268E+001	4.3305032221E+001	-2.1735310788E+001	0.464	1.317	1.331
149.634	2.169	173.682	0.520	8.9641655128E+001	3.9864660418E+001	-2.1406367194E+001	0.440	1.320	1.342
149.696	2.157	173.713	0.498	8.8320519230E+001	3.9099362102E+001	-2.1282119011E+001	0.435	1.320	1.345
149.957	2.099	173.843	0.491	8.2697528752E+001	3.5934852468E+001	-2.0163622675E+001	0.412	1.324	1.357
150.014	2.084	173.868	0.473	8.1562762174E+001	3.5309896823E+001	-2.0065920153E+001	0.407	1.325	1.359
150.274	2.015	173.992	0.475	7.6080792269E+001	3.2385035716E+001	-1.8710264761E+001	0.386	1.331	1.371
150.280	2.013	173.995	0.424	7.5965267594E+001	3.2324558654E+001	-1.8686515864E+001	0.385	1.331	1.372
150.336	1.995	174.019	0.472	7.4892893848E+001	3.1766419357E+001	-1.9469770986E+001	0.382	1.332	1.374
150.597	1.923	174.145	0.476	6.9245815439E+001	2.8893524401E+001	-2.0473799801E+001	0.361	1.340	1.388
150.666	1.901	174.176	0.504	6.7841080018E+001	2.8187540702E+001	-2.0774142158E+001	0.356	1.343	1.392
150.926	1.833	174.311	0.511	6.1824479538E+001	2.5198724207E+001	-2.1960742338E+001	0.333	1.355	1.410
151.013	1.807	174.353	0.539	5.9960117357E+001	2.4280046501E+001	-2.2238114068E+001	0.326	1.359	1.416
151.273	1.744	174.498	0.547	5.3654208476E+001	2.1190628167E+001	-2.2562628479E+001	0.299	1.376	1.438
151.344	1.724	174.534	0.561	5.2080713045E+001	2.0425156679E+001	-2.2574480870E+001	0.292	1.380	1.444
151.604	1.660	174.684	0.553	4.5760455887E+001	1.7370603960E+001	-2.0378269477E+001	0.262	1.401	1.470
151.669	1.638	174.714	0.509	4.4508055213E+001	1.6774092372E+001	-1.9774434568E+001	0.256	1.406	1.476
151.929	1.555	174.849	0.508	3.8977947327E+001	1.4166427751E+001	-1.9185117799E+001	0.228	1.429	1.502
151.989	1.532	174.876	0.498	3.7861810222E+001	1.3647980226E+001	-1.9022884834E+001	0.223	1.433	1.508
152.249	1.441	175.008	0.501	3.2557906976E+001	1.1207483459E+001	-1.9346524650E+001	0.194	1.459	1.537
152.312	1.417	175.038	0.482	3.1353221148E+001	1.0663075489E+001	-1.9105758755E+001	0.187	1.466	1.544
152.572	1.314	175.164	0.476	2.6370144234E+001	8.4516632266E+000	-1.7778892965E+001	0.158	1.495	1.576
152.631	1.289	175.190	0.475	2.5341883897E+001	8.0061374624E+000	-1.7613474714E+001	0.152	1.501	1.583
152.891	1.180	175.315	0.470	2.0591965059E+001	6.0384624824E+000	-1.6495340598E+001	0.123	1.533	1.618
152.953	1.151	175.342	0.458	1.9587939083E+001	5.6270103249E+000	-1.6391644759E+001	0.116	1.542	1.628
153.214	1.034	175.463	0.464	1.4977304005E+001	3.7375885684E+000	-1.7020816888E+001	0.083	1.580	1.668
153.281	1.003	175.494	0.454	1.3848303554E+001	3.2998141400E+000	-1.6625488700E+001	0.075	1.592	1.681
153.500	0.897	175.593	0.468	1.0354242799E+001	2.0664669868E+000	-1.5882075872E+001	0.056	1.628	1.718

153.619	0.845	175.652	0.580	8.4693854781E+000	1.4903669503E+000	-1.5932860441E+001	0.056	1.655	1.745
153.879	0.760	175.813	0.568	4.2825355638E+000	5.8490612878E-001	-9.9950528790E+000	0.056	1.724	1.812
153.950	0.720	175.840	0.568	3.6879489747E+000	4.9811062722E-001	-9.5816341609E+000	0.056	1.734	1.825

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)
133.845	0.260	0.304	-31.017	-0.987	-0.300	20.352	6.177
134.105	0.260	0.304	-31.017	-2.960	-0.899	22.129	6.717
134.366	0.260	0.304	-31.017	-4.934	-1.498	25.020	7.594
134.626	0.260	0.304	-31.017	-6.908	-2.097	29.864	9.064
134.886	0.175	0.204	-31.017	-8.558	-1.746	35.880	7.322
135.061	0.260	0.300	-29.780	-9.912	-2.970	36.861	11.047
135.321	0.260	0.300	-29.780	-11.771	-3.528	39.212	11.752
135.581	0.047	0.054	-29.780	-12.868	-0.695	41.226	2.227
135.628	0.260	0.292	-26.906	-12.931	-3.772	43.520	12.695
135.888	0.112	0.126	-26.906	-14.076	-1.770	46.301	5.821
136.000	0.002	0.003	-26.906	-14.430	-0.040	46.930	0.131
136.002	0.260	0.283	-23.042	-13.558	-3.833	48.805	13.796
136.263	0.046	0.050	-23.042	-14.500	-0.728	52.821	2.652
136.309	0.260	0.273	-17.928	-12.236	-3.345	53.418	14.604
136.569	0.047	0.049	-17.928	-12.902	-0.633	55.869	2.740
136.616	0.260	0.268	-13.591	-10.239	-2.740	59.437	15.906
136.876	0.014	0.014	-13.591	-10.643	-0.151	60.901	0.866
136.890	0.260	0.263	-9.096	-7.077	-1.864	62.287	16.409
137.150	0.045	0.045	-9.096	-7.333	-0.331	64.685	2.919
137.194	0.260	0.261	-5.317	-3.876	-1.013	63.886	16.690
137.454	0.077	0.077	-5.317	-4.006	-0.309	66.043	5.090
137.531	0.260	0.260	-2.622	-1.269	-0.330	65.701	17.108
137.791	0.166	0.166	-2.622	-1.315	-0.218	66.270	11.011
137.957	0.043	0.043	-0.665	0.863	0.037	65.427	2.802
138.000	0.260	0.260	-0.665	0.896	0.233	65.314	16.991
138.260	0.047	0.047	-0.665	0.933	0.044	66.046	3.102
138.307	0.260	0.260	1.951	4.263	1.110	64.077	16.677
138.567	0.058	0.058	1.951	4.420	0.258	64.932	3.789
138.626	0.260	0.261	4.984	8.622	2.251	63.290	16.526
138.886	0.033	0.033	4.984	8.876	0.293	63.851	2.105
138.918	0.002	0.002	8.058	13.061	0.020	61.811	0.095
138.920	0.260	0.263	8.058	13.611	3.576	63.360	16.646
139.180	0.051	0.051	8.058	14.267	0.731	65.378	3.350
139.231	0.260	0.265	10.966	19.238	5.097	64.577	17.110
139.491	0.029	0.030	10.966	19.993	0.593	66.258	1.965
139.520	0.260	0.268	13.838	25.137	6.734	65.459	17.536
139.780	0.048	0.050	13.838	26.072	1.299	67.141	3.345
139.829	0.171	0.179	16.291	30.527	5.451	66.075	11.799
140.000	0.156	0.163	16.291	31.212	5.080	67.119	10.923
140.156	0.260	0.274	18.208	34.408	9.422	65.907	18.047
140.416	0.121	0.128	18.208	34.669	4.421	66.372	8.463
140.537	0.260	0.275	19.143	36.305	9.996	66.053	18.187
140.798	0.086	0.091	19.143	36.529	3.313	66.581	6.039
140.883	0.260	0.277	20.206	38.290	10.613	66.119	18.327
141.143	0.069	0.073	20.206	38.488	2.821	66.561	4.879
141.212	0.260	0.279	21.325	40.262	11.243	66.100	18.458
141.472	0.057	0.061	21.325	40.436	2.478	66.418	4.071
141.529	0.260	0.281	22.453	42.149	11.863	65.852	18.535
141.790	0.061	0.066	22.453	42.304	2.801	66.105	4.377
141.851	0.260	0.284	23.522	43.868	12.445	65.552	18.597
142.111	0.053	0.058	23.522	43.996	2.550	65.741	3.810
142.164	0.260	0.286	24.577	45.464	13.004	65.223	18.656

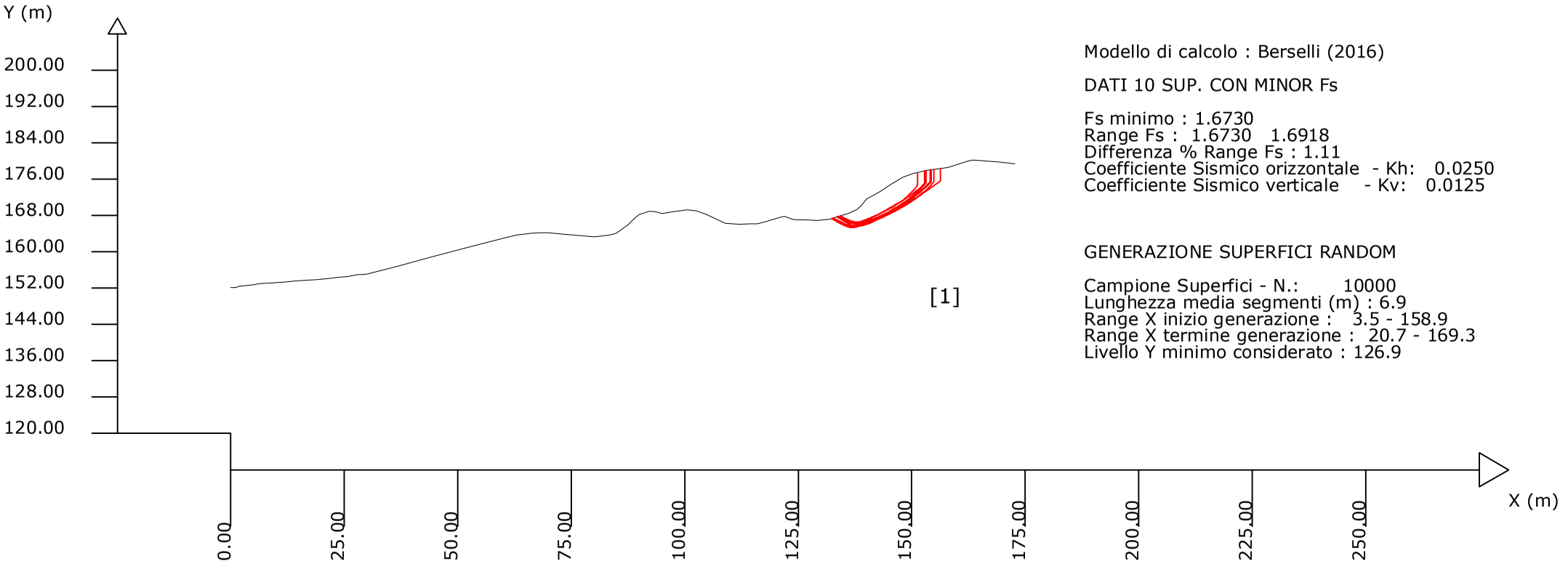
142.424	0.060	0.066	24.577	45.571	3.001	65.372	4.306
142.484	0.260	0.288	25.563	46.881	13.518	64.947	18.727
142.744	0.067	0.075	25.563	46.965	3.507	65.061	4.858
142.811	0.189	0.211	26.454	48.079	10.125	64.701	13.626
143.000	0.159	0.178	26.454	48.214	8.562	64.898	11.525
143.159	0.260	0.292	26.913	49.004	14.295	65.050	18.976
143.419	0.074	0.083	26.913	49.206	4.088	65.199	5.416
143.493	0.260	0.293	27.395	49.947	14.633	65.268	19.122
143.753	0.067	0.076	27.395	50.131	3.787	65.340	4.936
143.820	0.260	0.294	27.885	50.855	14.966	65.396	19.246
144.081	0.063	0.071	27.885	51.024	3.626	65.433	4.650
144.143	0.260	0.296	28.376	51.721	15.291	65.578	19.388
144.403	0.064	0.073	28.376	51.876	3.766	65.532	4.757
144.467	0.260	0.297	28.855	52.535	15.603	65.660	19.501
144.727	0.061	0.070	28.855	52.674	3.675	65.633	4.579
144.789	0.260	0.298	29.330	53.302	15.904	65.578	19.566
145.049	0.063	0.073	29.330	53.428	3.887	65.481	4.764
145.112	0.260	0.300	29.791	54.016	16.190	65.453	19.618
145.372	0.067	0.077	29.791	54.128	4.163	65.308	5.023
145.439	0.061	0.071	30.232	54.612	3.860	65.138	4.603
145.500	0.260	0.301	30.232	54.670	16.459	65.414	19.694
145.760	0.013	0.015	30.232	54.712	0.836	65.338	0.998
145.773	0.260	0.302	30.405	54.920	16.564	65.636	19.796
146.033	0.071	0.082	30.405	54.964	4.493	65.546	5.358
146.104	0.260	0.302	30.581	55.176	16.671	65.952	19.927
146.364	0.067	0.078	30.581	55.214	4.315	65.818	5.144
146.431	0.260	0.303	30.758	55.418	16.775	66.256	20.056
146.691	0.066	0.077	30.758	55.449	4.276	66.318	5.115
146.758	0.260	0.303	30.935	55.645	16.875	66.531	20.176
147.018	0.065	0.076	30.935	55.671	4.233	66.141	5.029
147.083	0.260	0.304	31.113	55.859	16.971	66.296	20.143
147.343	0.067	0.078	31.113	55.878	4.372	65.806	5.149
147.410	0.260	0.304	31.288	56.056	17.063	66.203	20.151
147.670	0.069	0.080	31.288	56.068	4.508	65.736	5.285
147.739	0.260	0.305	31.461	56.235	17.149	66.158	20.175
147.999	0.001	0.001	31.461	56.240	0.057	65.746	0.066
148.000	0.073	0.085	31.461	56.158	4.780	65.723	5.594
148.073	0.260	0.305	31.629	55.924	17.085	66.068	20.183
148.333	0.080	0.093	31.629	55.529	5.186	65.569	6.124
148.412	0.260	0.308	32.426	55.794	17.194	65.389	20.151
148.672	0.065	0.077	32.426	55.381	4.272	64.835	5.001
148.737	0.260	0.311	33.259	55.603	17.297	64.621	20.102
148.998	0.060	0.072	33.259	55.159	3.985	64.656	4.671
149.058	0.260	0.314	34.107	55.302	17.374	64.123	20.145
149.318	0.056	0.067	34.107	54.827	3.696	62.751	4.230
149.374	0.260	0.317	34.933	54.868	17.409	61.896	19.639
149.634	0.062	0.076	34.933	54.344	4.131	61.117	4.645
149.696	0.260	0.321	35.750	54.278	17.397	60.142	19.276
149.957	0.057	0.070	35.750	53.724	3.785	59.202	4.171
150.014	0.260	0.324	36.550	53.566	17.345	58.421	18.917
150.274	0.006	0.008	36.550	53.069	0.409	57.393	0.442
150.280	0.056	0.070	36.550	52.909	3.721	57.349	4.033
150.336	0.260	0.327	37.303	52.403	17.137	56.861	18.594
150.597	0.070	0.088	37.303	51.498	4.515	55.852	4.897
150.666	0.260	0.330	37.991	50.847	16.782	55.512	18.322
150.926	0.086	0.110	37.991	49.857	5.467	54.487	5.975
151.013	0.260	0.333	38.625	49.067	16.337	54.117	18.019
151.273	0.071	0.091	38.625	48.086	4.382	52.965	4.826
151.344	0.260	0.336	39.290	47.280	15.891	52.486	17.640
151.604	0.065	0.083	39.290	46.283	3.859	50.601	4.220
151.669	0.260	0.339	39.965	45.429	15.418	50.019	16.976
151.929	0.060	0.078	39.965	44.411	3.457	48.739	3.794
151.989	0.260	0.343	40.629	43.503	14.910	48.135	16.498
152.249	0.063	0.083	40.629	42.437	3.528	47.147	3.920
152.312	0.260	0.346	41.274	41.450	14.346	46.113	15.960
152.572	0.059	0.078	41.274	40.363	3.162	45.021	3.526
152.631	0.260	0.350	41.908	39.329	13.746	44.074	15.405
152.891	0.062	0.084	41.908	38.194	3.206	42.938	3.604
152.953	0.260	0.353	42.511	37.088	13.087	42.397	14.961
153.214	0.067	0.091	42.511	35.903	3.265	41.380	3.764
153.281	0.219	0.300	43.075	34.879	10.476	40.036	12.025
153.500	0.119	0.163	43.075	33.571	5.462	38.942	6.336
153.619	0.260	0.358	43.343	32.003	11.447	37.241	13.320
153.879	0.071	0.098	43.343	30.617	3.009	35.251	3.465
153.950	0.260	0.359	43.617	29.226	10.501	34.840	12.518

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 : 14/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Berselli (2016)

DATI 10 SUP. CON MINOR Fs

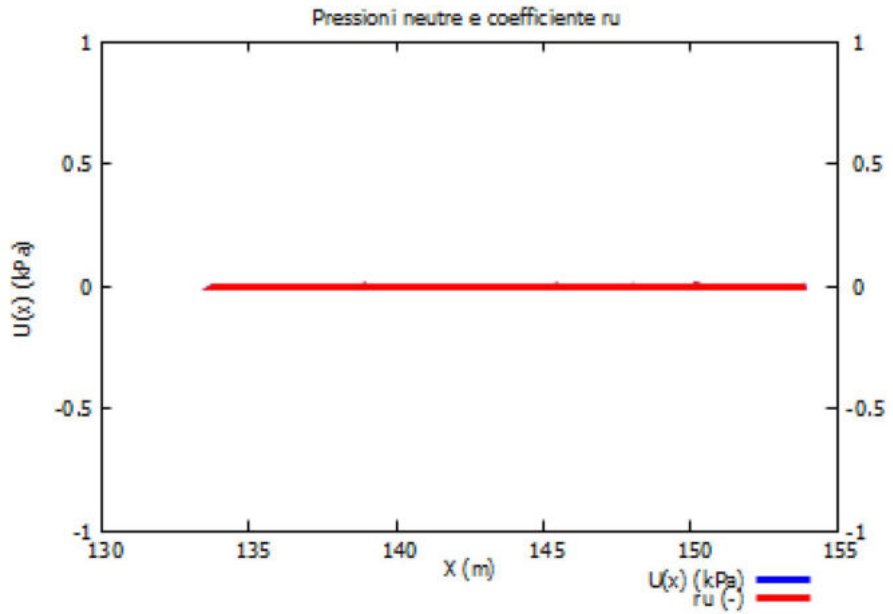
Fs minimo : 1.6730
Range Fs : 1.6730 1.6918
Differenza % Range Fs : 1.11
Coefficiente Sismico orizzontale - Kh: 0.0250
Coefficiente Sismico verticale - Kv: 0.0125

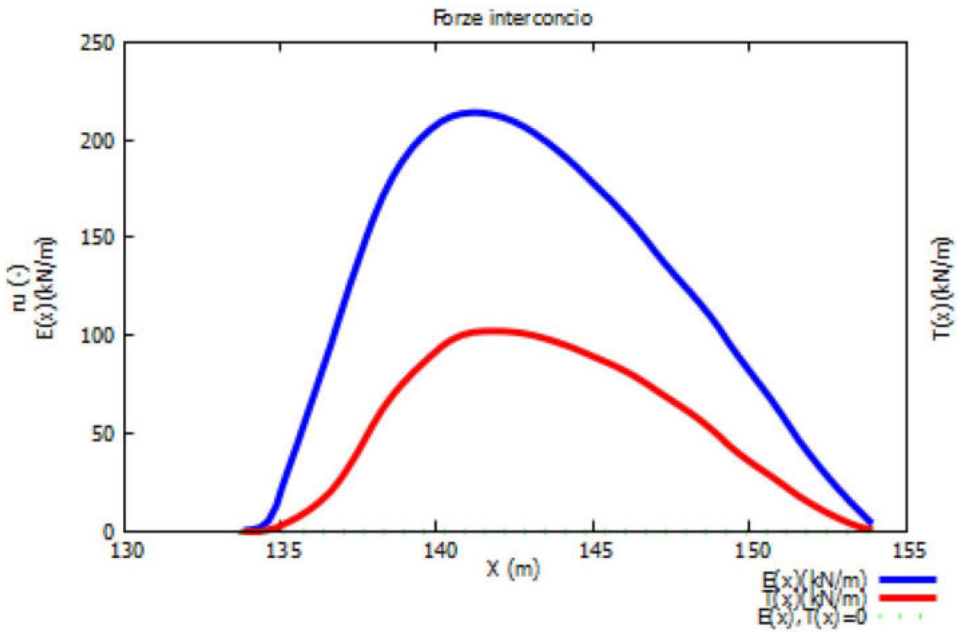
GENERAZIONE SUPERFICI RANDOM

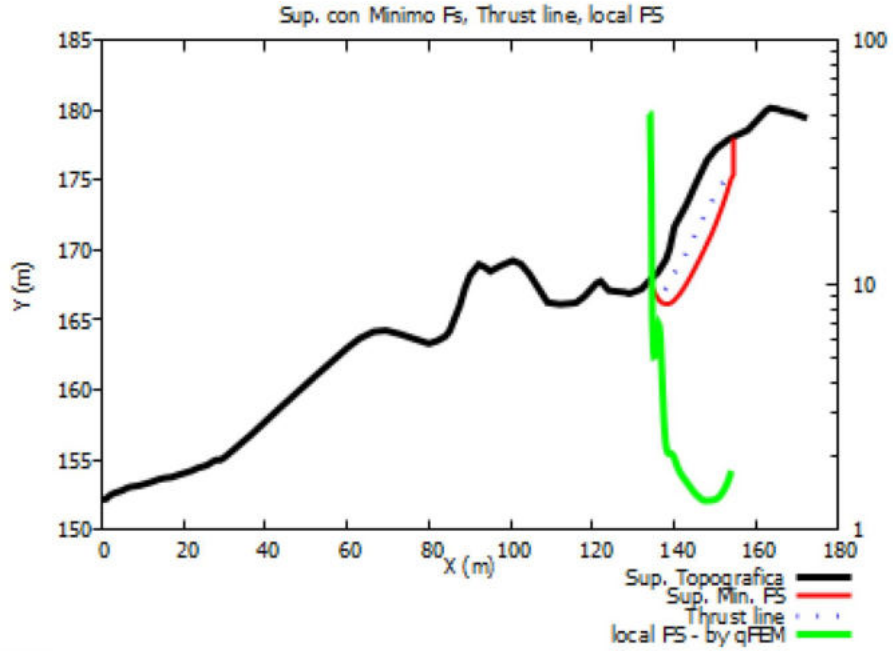
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 6.9
Range X inizio generazione : 3.5 - 158.9
Range X termine generazione : 20.7 - 169.3
Livello Y minimo considerato : 126.9

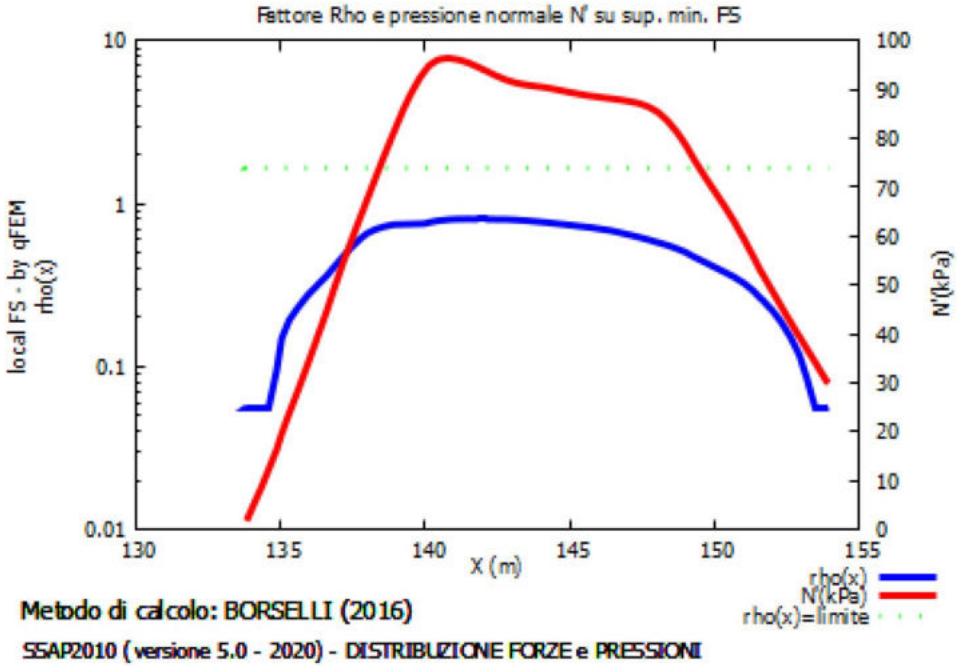
Parametri Geotecnici degli strati # ----------

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





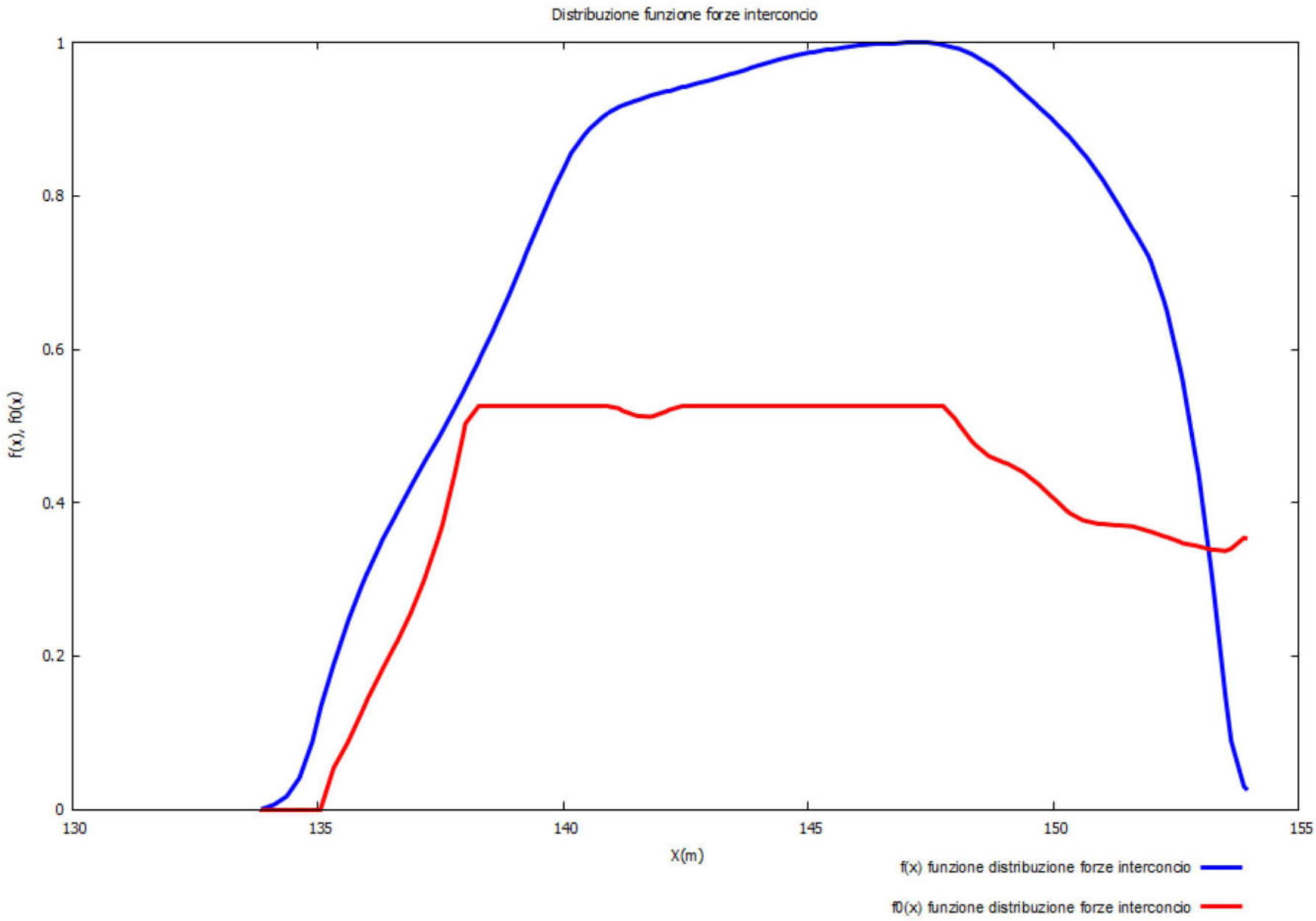


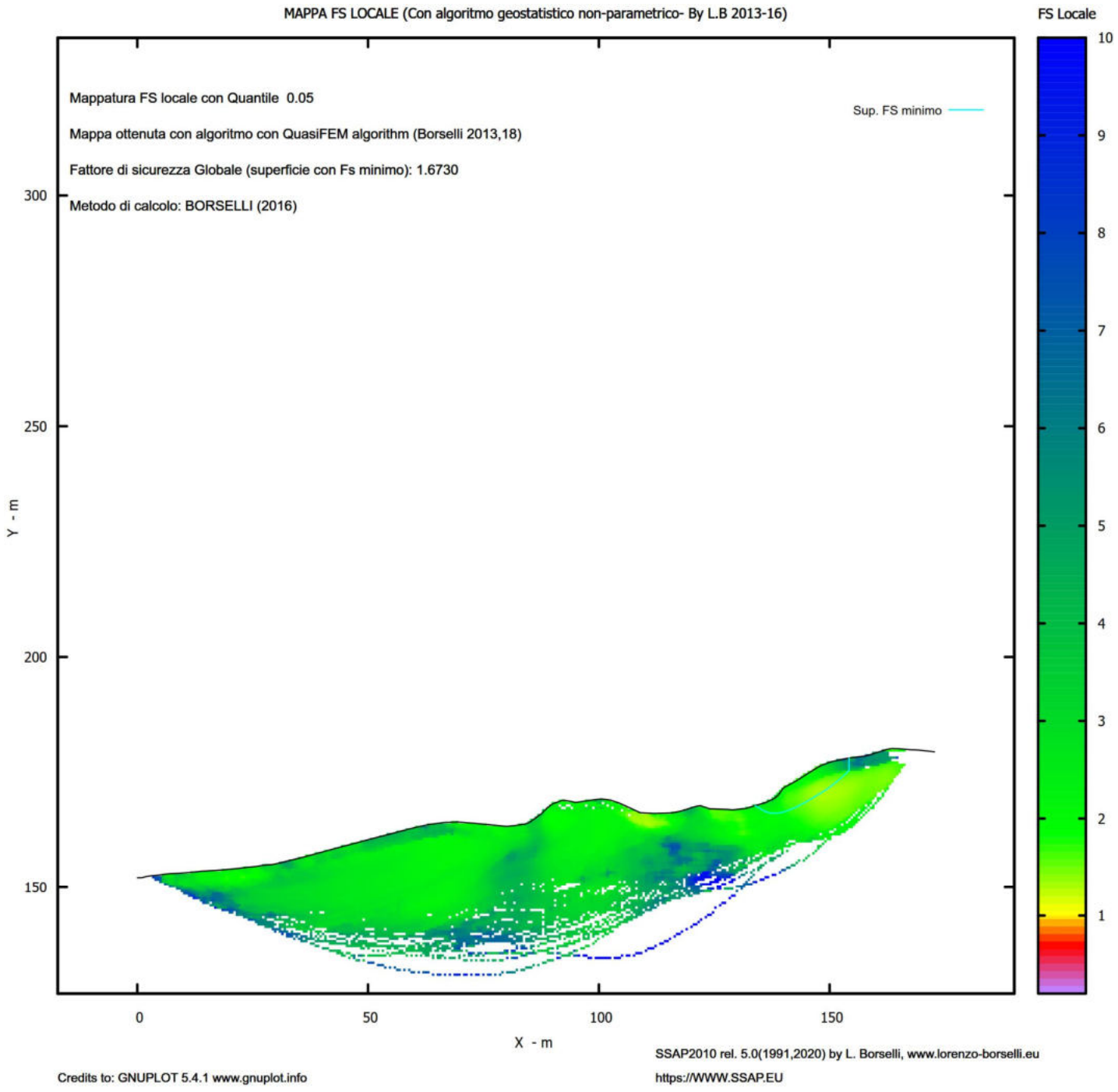


Metodo di calcolo: BORSELLI (2016)

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

14/11/21 12:27

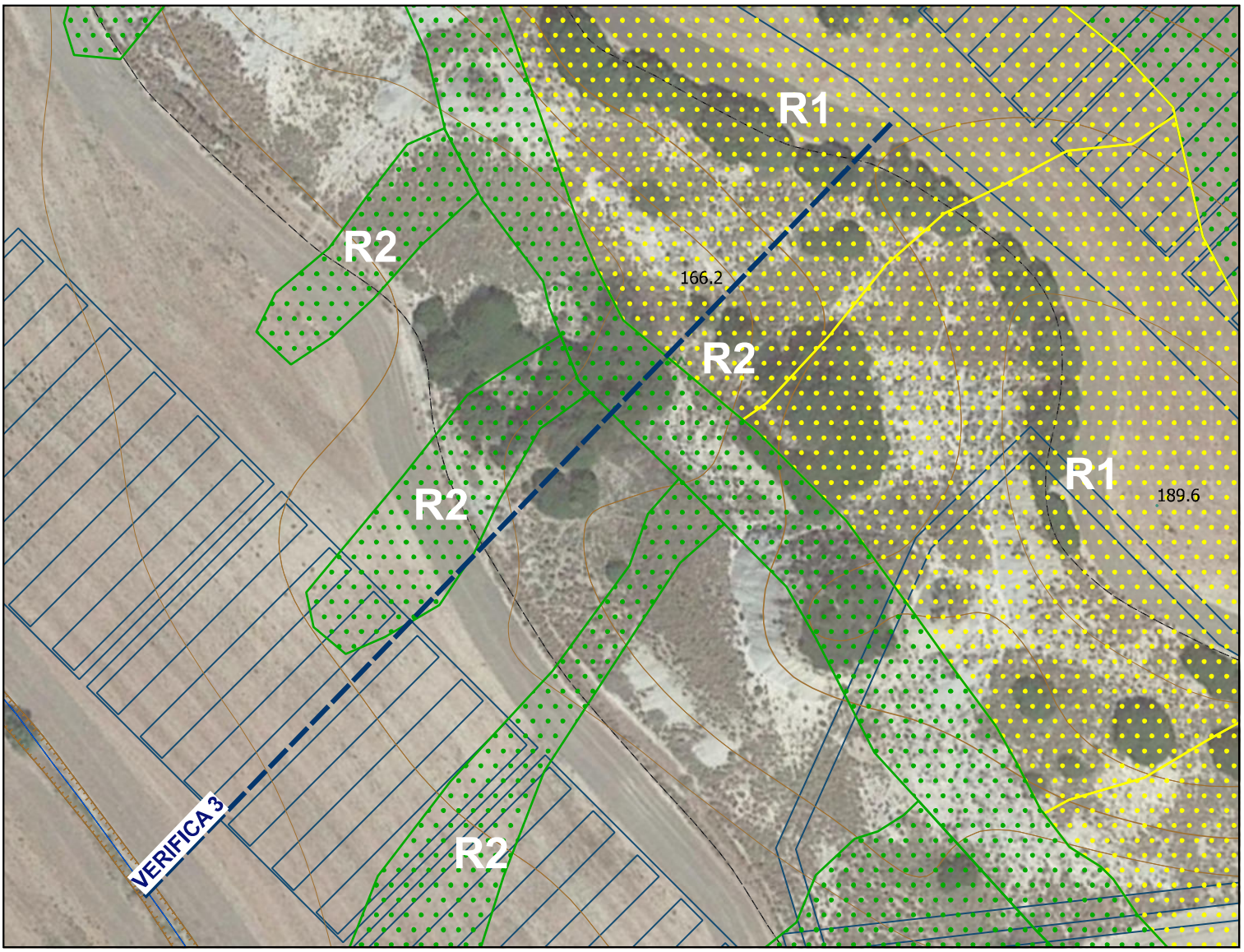



MAPPA FS LOCALE (Con algoritmo geostatistico non-parametrico- By L.B 2013-16)
FS Locale
Mappatura FS locale con Quantile 0.05
Mappa ottenuta con algoritmo con QuasiFEM algorithm (Borselli 2013,18)
Fattore di sicurezza Globale (superficie con Fs minimo): 1.6730
Metodo di calcolo: BORSELLI (2016)
Sup. FS minimo
Y - m
X - m
300
250
200
150
0
50
100
150
10
9
8
7
6
5
4
3
2
1
Credits to: GNUPLOT 5.4.1 www.gnuplot.info
SSAP2010 rel. 5.0(1991,2020) by L. Borselli, www.lorenzo-borselli.eu
https://WWW.SSAP.EU

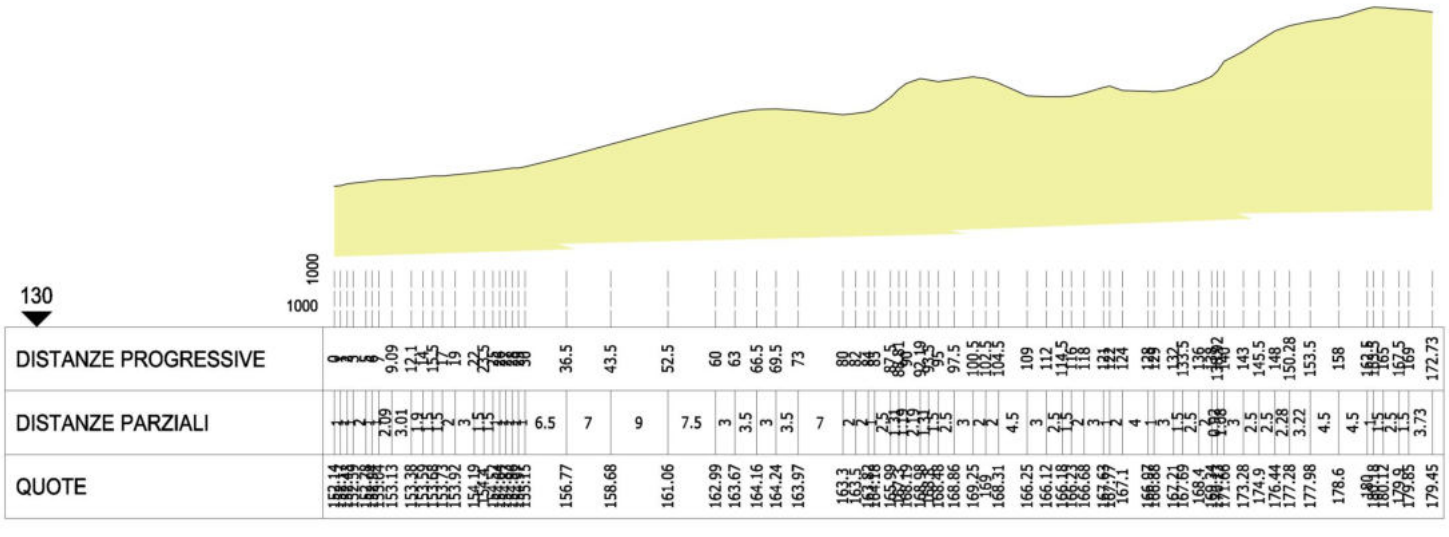
SEZIONE DI VERIFICA N. 3

CONDIZIONE NON DRENATA

SEZIONE DI VERIFICA N. 3



0 10 20 m



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\MIADONNA\VERIFICA3\NONDRENATA\MORG\MIORG.txt
Data: 14/11/2021
Localita' :
Descrizione:
Modello pendio: VERIFICA3NONDRENATA.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	152.14	-	-	-	-	-	-
1.00	152.17	-	-	-	-	-	-
2.00	152.43	-	-	-	-	-	-
3.00	152.59	-	-	-	-	-	-
5.00	152.78	-	-	-	-	-	-
6.00	152.94	-	-	-	-	-	-
7.00	153.04	-	-	-	-	-	-
9.09	153.13	-	-	-	-	-	-
12.10	153.38	-	-	-	-	-	-
14.00	153.59	-	-	-	-	-	-
15.50	153.68	-	-	-	-	-	-
17.00	153.73	-	-	-	-	-	-
19.00	153.92	-	-	-	-	-	-
22.00	154.19	-	-	-	-	-	-
23.50	154.40	-	-	-	-	-	-
25.00	154.52	-	-	-	-	-	-
26.00	154.64	-	-	-	-	-	-
27.00	154.83	-	-	-	-	-	-
28.00	154.96	-	-	-	-	-	-
29.00	154.97	-	-	-	-	-	-
30.00	155.15	-	-	-	-	-	-
36.50	156.77	-	-	-	-	-	-
43.50	158.68	-	-	-	-	-	-
52.50	161.06	-	-	-	-	-	-
60.00	162.99	-	-	-	-	-	-
63.00	163.67	-	-	-	-	-	-
66.50	164.16	-	-	-	-	-	-
69.50	164.24	-	-	-	-	-	-
73.00	163.97	-	-	-	-	-	-
80.00	163.30	-	-	-	-	-	-
82.00	163.50	-	-	-	-	-	-
84.00	163.82	-	-	-	-	-	-
85.00	164.18	-	-	-	-	-	-
87.50	165.99	-	-	-	-	-	-
88.81	167.30	-	-	-	-	-	-
90.00	168.19	-	-	-	-	-	-
92.19	168.98	-	-	-	-	-	-
93.50	168.80	-	-	-	-	-	-
95.00	168.48	-	-	-	-	-	-
97.50	168.87	-	-	-	-	-	-
100.50	169.25	-	-	-	-	-	-
102.50	169.00	-	-	-	-	-	-
104.50	168.31	-	-	-	-	-	-
109.00	166.25	-	-	-	-	-	-
112.00	166.12	-	-	-	-	-	-

114.50	166.18	-	-	-	-	-	-
116.00	166.23	-	-	-	-	-	-
118.00	166.68	-	-	-	-	-	-
121.00	167.63	-	-	-	-	-	-
122.00	167.77	-	-	-	-	-	-
124.00	167.10	-	-	-	-	-	-
128.00	166.97	-	-	-	-	-	-
129.00	166.88	-	-	-	-	-	-
132.00	167.21	-	-	-	-	-	-
133.50	167.69	-	-	-	-	-	-
136.00	168.40	-	-	-	-	-	-
138.00	169.34	-	-	-	-	-	-
138.92	170.13	-	-	-	-	-	-
140.00	171.66	-	-	-	-	-	-
143.00	173.28	-	-	-	-	-	-
145.50	174.90	-	-	-	-	-	-
148.00	176.44	-	-	-	-	-	-
150.28	177.28	-	-	-	-	-	-
153.50	177.98	-	-	-	-	-	-
158.00	178.60	-	-	-	-	-	-
162.50	180.00	-	-	-	-	-	-
163.50	180.18	-	-	-	-	-	-
165.00	180.12	-	-	-	-	-	-
167.50	179.91	-	-	-	-	-	-
169.00	179.85	-	-	-	-	-	-
172.73	179.45	-	-	-	-	-	-

ASSENZA DI FALDA

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

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

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

---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
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): 6.9 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 3.45 158.91
LIVELLO MINIMO CONSIDERATO (Ymin): 150.00
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 20.73 169.28

*** 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 : 0.0250
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0125
COEFFICIENTE c=Kv/Kh UTILIZZATO : 0.5000
FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00

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

---------- RISULTATO FINALE ELABORAZIONI ----------
---

* DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *

Fattore di sicurezza (FS) 2.4121 - Min. - X Y Lambda= 0.1862

125.93	167.04
128.63	164.77
129.96	163.68
130.89	162.95
131.69	162.36
132.44	161.84
133.18	161.36
133.97	160.89
134.85	160.40
135.88	159.85
136.65	159.48
137.31	159.24
137.87	159.10
138.54	159.03
139.09	159.04
139.74	159.15
140.48	159.34
141.48	159.67
142.37	159.96
143.18	160.24
143.96	160.52
144.71	160.80
145.47	161.09
146.24	161.40
147.05	161.73
147.90	162.09
148.66	162.44
149.39	162.81
150.09	163.20
150.84	163.65
151.54	164.11
152.28	164.62
153.05	165.20
153.90	165.86
154.70	166.51
155.47	167.14
156.22	167.78
156.98	168.44
157.73	169.10
158.38	169.69
158.38	178.72

Fattore di sicurezza (FS) 2.5023 - N.2 -- X Y Lambda= 0.1647

124.50	167.08
126.63	165.06
127.70	164.07
128.44	163.41
129.08	162.85
129.68	162.37
130.27	161.92
130.90	161.47
131.57	161.00
132.34	160.50
132.95	160.13
133.50	159.84
133.99	159.64
134.55	159.46
135.02	159.36
135.56	159.31
136.14	159.29
136.89	159.32
137.58	159.35
138.22	159.37
138.84	159.41
139.45	159.44
140.06	159.48
140.68	159.52
141.32	159.57
141.99	159.62
142.59	159.68
143.17	159.77

143.73 159.87
144.32 160.00
144.88 160.14
145.48 160.32
146.12 160.53
146.86 160.79
147.48 161.04
148.06 161.31
148.61 161.59
149.19 161.93
149.74 162.28
150.32 162.69
150.93 163.15
151.63 163.70
152.27 164.23
152.88 164.75
153.48 165.27
154.09 165.80
154.68 166.35
155.28 166.91
155.88 167.49
156.51 168.11
157.13 168.72
157.75 169.33
158.00 169.58
158.00 178.60

Fattore di sicurezza (FS) 2.5059 - N.3 -- X Y Lambda= 0.1942
126.68 167.01
128.69 165.06
129.68 164.12
130.37 163.49
130.97 162.97
131.53 162.53
132.08 162.12
132.66 161.71
133.30 161.29
134.04 160.82
134.61 160.50
135.12 160.25
135.57 160.08
136.09 159.95
136.52 159.89
137.02 159.87
137.58 159.90
138.31 159.99
138.95 160.07
139.55 160.15
140.11 160.24
140.68 160.34
141.23 160.44
141.80 160.56
142.39 160.69
143.02 160.84
143.59 160.99
144.15 161.15
144.69 161.32
145.25 161.51
145.79 161.72
146.36 161.94
146.96 162.20
147.62 162.50
148.20 162.78
148.75 163.08
149.26 163.39
149.81 163.76
150.33 164.13
150.87 164.55
151.44 165.02
152.06 165.57
152.67 166.11
153.25 166.63
153.83 167.14
154.40 167.65

154.97 168.16
155.54 168.68
156.11 169.20
156.48 169.53
156.48 178.39

Fattore di sicurezza (FS) 2.5201 - N.4 -- X Y Lambda= 0.1778
129.60 166.95
133.33 164.22
135.04 163.02
136.16 162.33
137.05 161.87
137.97 161.51
138.76 161.28
139.67 161.12
140.70 161.01
142.06 160.95
143.13 160.94
144.08 160.99
144.93 161.10
145.86 161.28
146.71 161.51
147.64 161.83
148.67 162.25
149.94 162.81
150.98 163.33
151.94 163.86
152.82 164.42
153.76 165.09
154.64 165.78
155.56 166.58
156.53 167.48
157.62 168.55
158.68 169.59
159.04 169.94
159.04 178.92

Fattore di sicurezza (FS) 2.5295 - N.5 -- X Y Lambda= 0.2148
125.76 167.04
127.41 165.53
128.26 164.76
128.86 164.22
129.39 163.75
129.87 163.33
130.36 162.91
130.87 162.48
131.42 162.03
132.02 161.53
132.50 161.18
132.92 160.90
133.29 160.71
133.72 160.53
134.08 160.44
134.50 160.38
134.97 160.36
135.60 160.38
136.15 160.41
136.65 160.44
137.13 160.48
137.60 160.53
138.06 160.59
138.53 160.66
139.02 160.74
139.53 160.84
140.03 160.94
140.51 161.04
140.99 161.14
141.47 161.25
141.94 161.37
142.42 161.48
142.91 161.61
143.42 161.74
143.91 161.88

144.39 162.02
144.86 162.16
145.33 162.32
145.81 162.47
146.29 162.64
146.80 162.82
147.33 163.02
147.81 163.22
148.28 163.43
148.72 163.64
149.19 163.89
149.64 164.14
150.10 164.42
150.58 164.73
151.11 165.09
151.61 165.44
152.10 165.78
152.59 166.12
153.07 166.45
153.55 166.80
154.03 167.15
154.53 167.51
155.03 167.88
155.51 168.24
155.99 168.61
156.45 168.98
156.93 169.37
156.93 178.45

Fattore di sicurezza (FS) 2.5392 - N.6 -- X Y Lambda= 0.2089
128.38 166.94
130.06 165.46
130.92 164.71
131.53 164.19
132.07 163.74
132.56 163.34
133.06 162.94
133.57 162.53
134.13 162.10
134.74 161.64
135.22 161.30
135.65 161.04
136.03 160.86
136.47 160.71
136.84 160.62
137.27 160.58
137.75 160.58
138.40 160.61
138.95 160.65
139.46 160.70
139.94 160.76
140.42 160.83
140.88 160.91
141.36 161.01
141.87 161.13
142.42 161.26
142.92 161.40
143.40 161.54
143.87 161.70
144.35 161.87
144.81 162.05
145.29 162.25
145.80 162.47
146.35 162.72
146.85 162.97
147.33 163.22
147.80 163.48
148.28 163.76
148.74 164.05
149.22 164.37
149.71 164.71
150.24 165.09
150.75 165.46
151.24 165.82

151.72 166.19
152.21 166.57
152.69 166.95
153.18 167.34
153.66 167.75
154.17 168.17
154.66 168.59
155.16 169.00
155.51 169.30
155.51 178.26

Fattore di sicurezza (FS) 2.5476 - N.7 -- X Y Lambda= 0.1647
127.37 166.99
129.09 165.73
129.98 165.07
130.62 164.61
131.19 164.19
131.70 163.83
132.22 163.46
132.74 163.08
133.29 162.69
133.86 162.29
134.35 161.95
134.83 161.66
135.28 161.42
135.77 161.18
136.22 160.99
136.70 160.82
137.22 160.67
137.85 160.50
138.39 160.38
138.88 160.29
139.35 160.22
139.84 160.18
140.30 160.15
140.79 160.14
141.32 160.16
141.92 160.19
142.45 160.24
142.95 160.30
143.42 160.38
143.91 160.47
144.38 160.59
144.88 160.72
145.40 160.88
146.00 161.09
146.52 161.28
147.02 161.48
147.49 161.69
147.99 161.94
148.46 162.19
148.95 162.48
149.47 162.79
150.05 163.17
150.58 163.53
151.08 163.88
151.57 164.25
152.07 164.64
152.55 165.04
153.04 165.46
153.55 165.92
154.08 166.41
154.61 166.90
155.13 167.39
155.64 167.87
156.14 168.35
156.65 168.83
157.16 169.31
157.52 169.66
157.52 178.53

Fattore di sicurezza (FS) 2.5667 - N.8 -- X Y Lambda= 0.1985
125.45 167.05

127.18 165.41
128.06 164.57
128.69 163.98
129.26 163.46
129.76 163.01
130.28 162.55
130.81 162.08
131.38 161.59
132.01 161.06
132.51 160.67
132.95 160.36
133.35 160.14
133.81 159.94
134.19 159.82
134.63 159.74
135.12 159.70
135.78 159.69
136.36 159.68
136.88 159.69
137.38 159.71
137.88 159.74
138.37 159.78
138.88 159.83
139.41 159.89
140.01 159.97
140.51 160.06
140.99 160.16
141.45 160.29
141.93 160.45
142.38 160.62
142.86 160.82
143.36 161.06
143.93 161.36
144.47 161.64
144.99 161.92
145.50 162.19
146.00 162.47
146.51 162.75
147.02 163.04
147.54 163.34
148.08 163.65
148.58 163.95
149.08 164.26
149.56 164.58
150.06 164.92
150.55 165.27
151.05 165.64
151.56 166.03
152.11 166.47
152.63 166.89
153.13 167.31
153.62 167.74
154.12 168.18
154.61 168.64
155.11 169.11
155.47 169.46
155.47 178.25

Fattore di sicurezza (FS) 2.5680 - N.9 -- X Y Lambda= 0.1855
129.64 166.95
131.41 165.45
132.33 164.67
132.99 164.12
133.58 163.63
134.10 163.20
134.64 162.75
135.19 162.30
135.78 161.82
136.41 161.31
136.92 160.93
137.39 160.62
137.80 160.39
138.28 160.18
138.69 160.05

139.17 159.95
139.70 159.89
140.42 159.85
140.99 159.84
141.51 159.85
141.98 159.88
142.49 159.95
142.95 160.03
143.46 160.15
144.00 160.31
144.65 160.51
145.20 160.71
145.71 160.91
146.18 161.13
146.68 161.40
147.16 161.67
147.65 161.99
148.17 162.35
148.77 162.79
149.32 163.20
149.85 163.61
150.37 164.02
150.89 164.43
151.41 164.85
151.93 165.28
152.45 165.73
153.00 166.20
153.53 166.67
154.05 167.13
154.57 167.60
155.09 168.07
155.61 168.55
156.14 169.03
156.48 169.35
156.48 178.39

Fattore di sicurezza (FS) 2.5684 - N.10 -- X Y Lambda= 0.1931
126.10 167.03
127.81 165.41
128.69 164.59
129.31 164.02
129.87 163.51
130.37 163.07
130.88 162.62
131.41 162.16
131.98 161.68
132.60 161.16
133.09 160.78
133.53 160.48
133.92 160.27
134.37 160.08
134.74 159.97
135.18 159.90
135.66 159.87
136.32 159.87
136.89 159.88
137.41 159.90
137.91 159.93
138.40 159.97
138.88 160.01
139.39 160.07
139.91 160.14
140.48 160.22
140.98 160.31
141.46 160.41
141.92 160.53
142.41 160.67
142.87 160.82
143.35 161.00
143.86 161.20
144.42 161.45
144.94 161.68
145.45 161.91
145.94 162.15

146.43	162.40
146.92	162.66
147.43	162.93
147.95	163.22
148.51	163.54
149.01	163.84
149.49	164.16
149.96	164.48
150.44	164.85
150.91	165.22
151.39	165.63
151.89	166.08
152.42	166.58
152.95	167.07
153.46	167.55
153.97	168.03
154.47	168.50
154.97	168.98
155.33	169.32
155.33	178.23

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

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	2.412	4346.2	1801.8	2364.2	Surplus
2	2.502	4457.0	1781.1	2497.8	Surplus
3	2.506	4007.8	1599.3	2248.5	Surplus
4	2.520	3855.6	1530.0	2172.7	Surplus
5	2.530	3992.5	1578.3	2256.3	Surplus
6	2.539	3645.3	1435.6	2066.1	Surplus
7	2.548	4003.3	1571.4	2274.8	Surplus
8	2.567	4099.8	1597.3	2342.8	Surplus
9	2.568	3861.2	1503.6	2207.3	Surplus
10	2.568	3976.6	1548.3	2273.5	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 2066.1

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

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

TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (°)	W (kN/m)	ru (-)	U (kPa)	phi' (°)	(c',Cu) (kPa)
125.932	0.377	-40.04	1.17	0.00	0.00	0.00	100.00
126.309	0.377	-40.04	3.50	0.00	0.00	0.00	100.00
126.687	0.377	-40.04	5.83	0.00	0.00	0.00	100.00
127.064	0.377	-40.04	8.16	0.00	0.00	0.00	100.00
127.442	0.377	-40.04	10.49	0.00	0.00	0.00	100.00
127.819	0.181	-40.04	5.86	0.00	0.00	0.00	100.00
128.000	0.377	-40.04	13.86	0.00	0.00	0.00	100.00
128.377	0.249	-40.04	10.34	0.00	0.00	0.00	100.00
128.627	0.373	-39.39	17.21	0.00	0.00	0.00	100.00
129.000	0.377	-39.39	19.80	0.00	0.00	0.00	100.00
129.377	0.377	-39.39	22.48	0.00	0.00	0.00	100.00
129.755	0.208	-39.39	13.53	0.00	0.00	0.00	100.00
129.963	0.377	-38.06	26.59	0.00	0.00	0.00	100.00
130.340	0.377	-38.06	29.17	0.00	0.00	0.00	100.00
130.718	0.171	-38.06	14.03	0.00	0.00	0.00	100.00
130.888	0.377	-36.50	32.85	0.00	0.00	0.00	100.00
131.266	0.377	-36.50	35.30	0.00	0.00	0.00	100.00
131.643	0.050	-36.50	4.84	0.00	0.00	0.00	100.00
131.693	0.307	-34.49	30.71	0.00	0.00	0.00	100.00

132.000	0.377	-34.49	40.17	0.00	0.00	0.00	100.00
132.377	0.065	-34.49	7.24	0.00	0.00	0.00	100.00
132.443	0.377	-32.72	43.52	0.00	0.00	0.00	100.00
132.820	0.362	-32.72	44.39	0.00	0.00	0.00	100.00
133.183	0.317	-30.98	40.94	0.00	0.00	0.00	100.00
133.500	0.377	-30.98	51.08	0.00	0.00	0.00	100.00
133.877	0.097	-30.98	13.61	0.00	0.00	0.00	100.00
133.975	0.377	-29.37	54.24	0.00	0.00	0.00	100.00
134.352	0.377	-29.37	56.68	0.00	0.00	0.00	100.00
134.730	0.118	-29.37	18.17	0.00	0.00	0.00	100.00
134.848	0.377	-28.08	59.84	0.00	0.00	0.00	100.00
135.225	0.377	-28.08	62.20	0.00	0.00	0.00	100.00
135.602	0.275	-28.08	46.82	0.00	0.00	0.00	100.00
135.878	0.122	-25.32	21.23	0.00	0.00	0.00	100.00
136.000	0.377	-25.32	67.17	0.00	0.00	0.00	100.00
136.377	0.270	-25.32	49.68	0.00	0.00	0.00	100.00
136.647	0.377	-20.60	71.69	0.00	0.00	0.00	100.00
137.025	0.285	-20.60	55.78	0.00	0.00	0.00	100.00
137.310	0.377	-13.57	75.78	0.00	0.00	0.00	100.00
137.687	0.180	-13.57	36.93	0.00	0.00	0.00	100.00
137.868	0.132	-6.04	27.37	0.00	0.00	0.00	100.00
138.000	0.377	-6.04	79.77	0.00	0.00	0.00	100.00
138.377	0.164	-6.04	35.48	0.00	0.00	0.00	100.00
138.541	0.377	1.54	83.56	0.00	0.00	0.00	100.00
138.919	0.001	1.54	0.28	0.00	0.00	0.00	100.00
138.920	0.169	1.54	38.32	0.00	0.00	0.00	100.00
139.089	0.377	9.22	88.38	0.00	0.00	0.00	100.00
139.466	0.271	9.22	65.75	0.00	0.00	0.00	100.00
139.738	0.262	14.62	65.31	0.00	0.00	0.00	100.00
140.000	0.377	14.62	95.51	0.00	0.00	0.00	100.00
140.377	0.104	14.62	26.44	0.00	0.00	0.00	100.00
140.481	0.377	17.84	96.45	0.00	0.00	0.00	100.00
140.859	0.377	17.84	97.08	0.00	0.00	0.00	100.00
141.236	0.247	17.84	63.86	0.00	0.00	0.00	100.00
141.483	0.377	18.38	98.10	0.00	0.00	0.00	100.00
141.861	0.377	18.38	98.70	0.00	0.00	0.00	100.00
142.238	0.130	18.38	34.13	0.00	0.00	0.00	100.00
142.368	0.377	19.02	99.49	0.00	0.00	0.00	100.00
142.746	0.254	19.02	67.33	0.00	0.00	0.00	100.00
143.000	0.180	19.02	47.95	0.00	0.00	0.00	100.00
143.180	0.377	19.69	100.99	0.00	0.00	0.00	100.00
143.558	0.377	19.69	101.82	0.00	0.00	0.00	100.00
143.935	0.020	19.69	5.42	0.00	0.00	0.00	100.00
143.955	0.377	20.41	102.69	0.00	0.00	0.00	100.00
144.333	0.377	20.41	103.48	0.00	0.00	0.00	100.00
144.710	0.004	20.41	0.99	0.00	0.00	0.00	100.00
144.714	0.377	21.07	104.27	0.00	0.00	0.00	100.00
145.091	0.377	21.07	105.02	0.00	0.00	0.00	100.00
145.469	0.001	21.07	0.39	0.00	0.00	0.00	100.00
145.470	0.030	21.72	8.33	0.00	0.00	0.00	100.00
145.500	0.377	21.72	105.78	0.00	0.00	0.00	100.00
145.877	0.366	21.72	103.17	0.00	0.00	0.00	100.00
146.243	0.377	22.33	107.00	0.00	0.00	0.00	100.00
146.621	0.377	22.33	107.59	0.00	0.00	0.00	100.00
146.998	0.047	22.33	13.48	0.00	0.00	0.00	100.00
147.046	0.377	22.89	108.24	0.00	0.00	0.00	100.00
147.423	0.377	22.89	108.80	0.00	0.00	0.00	100.00
147.801	0.101	22.89	29.35	0.00	0.00	0.00	100.00
147.902	0.098	24.71	28.37	0.00	0.00	0.00	100.00
148.000	0.377	24.71	109.21	0.00	0.00	0.00	100.00
148.377	0.285	24.71	82.34	0.00	0.00	0.00	100.00
148.663	0.377	26.80	108.68	0.00	0.00	0.00	100.00
149.040	0.355	26.80	101.74	0.00	0.00	0.00	100.00
149.395	0.377	29.01	107.85	0.00	0.00	0.00	100.00
149.772	0.323	29.01	91.78	0.00	0.00	0.00	100.00
150.095	0.185	31.11	52.45	0.00	0.00	0.00	100.00
150.280	0.377	31.11	106.23	0.00	0.00	0.00	100.00
150.657	0.180	31.11	50.20	0.00	0.00	0.00	100.00
150.837	0.377	33.12	104.51	0.00	0.00	0.00	100.00
151.215	0.328	33.12	89.70	0.00	0.00	0.00	100.00
151.542	0.377	35.06	102.10	0.00	0.00	0.00	100.00
151.920	0.358	35.06	95.66	0.00	0.00	0.00	100.00
152.278	0.377	36.74	99.31	0.00	0.00	0.00	100.00
152.656	0.377	36.74	97.78	0.00	0.00	0.00	100.00
153.033	0.013	36.74	3.27	0.00	0.00	0.00	100.00

153.046	0.377	38.12	96.15	0.00	0.00	0.00	100.00
153.423	0.077	38.12	19.32	0.00	0.00	0.00	100.00
153.500	0.377	38.12	94.07	0.00	0.00	0.00	100.00
153.877	0.022	38.12	5.36	0.00	0.00	0.00	100.00
153.899	0.377	38.78	92.07	0.00	0.00	0.00	100.00
154.277	0.377	38.78	90.15	0.00	0.00	0.00	100.00
154.654	0.044	38.78	10.44	0.00	0.00	0.00	100.00
154.698	0.377	39.49	87.97	0.00	0.00	0.00	100.00
155.076	0.377	39.49	85.99	0.00	0.00	0.00	100.00
155.453	0.017	39.49	3.81	0.00	0.00	0.00	100.00
155.470	0.377	40.22	83.89	0.00	0.00	0.00	100.00
155.848	0.376	40.22	81.62	0.00	0.00	0.00	100.00
156.224	0.377	40.95	79.78	0.00	0.00	0.00	100.00
156.602	0.377	40.95	77.67	0.00	0.00	0.00	100.00
156.979	0.003	40.95	0.57	0.00	0.00	0.00	100.00
156.982	0.377	41.64	75.52	0.00	0.00	0.00	100.00
157.359	0.369	41.64	71.64	0.00	0.00	0.00	100.00
157.728	0.272	42.32	51.56	0.00	0.00	0.00	100.00
158.000	0.377	42.32	69.85	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 (--)		
125.932	0.000	167.037	-0.636	0.0000000000E+000	0.0000000000E+000	1.7229759597E+001	0.080	7.848	8.577		
126.309	0.076	166.796	-0.636	1.3826673429E+001	1.2349478070E-002	5.6030307536E+001	0.080	7.848	8.577		
126.687	0.154	166.557	-0.673	4.2299320475E+001	1.6550503901E-001	9.4006545006E+001	0.080	4.048	4.418		
127.064	0.203	166.288	-0.680	8.4795639132E+001	8.2034760115E-001	1.0760156374E+002	0.080	2.743	2.992		
127.442	0.275	166.043	-0.608	1.2353166112E+002	1.8552034960E+000	9.8571148857E+001	0.080	2.219	2.420		
127.819	0.378	165.829	-0.573	1.5921059058E+002	3.2030689666E+000	1.0114418106E+002	0.080	1.963	2.138		
128.000	0.424	165.723	-0.571	1.7809244570E+002	4.1205487497E+000	1.0318449075E+002	0.080	1.880	2.046		
128.377	0.528	165.510	-0.548	2.1614764983E+002	5.9245205847E+000	9.9068772837E+001	0.080	1.723	1.871		
128.627	0.608	165.380	-0.559	2.4057299995E+002	7.2516880961E+000	1.0562324918E+002	0.082	1.656	1.796		
129.000	0.696	165.162	-0.575	2.8427983421E+002	1.0018141927E+001	1.1915142830E+002	0.100	1.584	1.713		
129.377	0.792	164.948	-0.568	3.3001874210E+002	1.3242943021E+001	1.2628142908E+002	0.116	1.543	1.662		
129.755	0.887	164.733	-0.575	3.7961428575E+002	1.7094714749E+001	1.3839385220E+002	0.132	1.528	1.637		
129.963	0.937	164.612	-0.539	4.0919256981E+002	1.9537491445E+001	1.3903790046E+002	0.142	1.531	1.633		
130.340	1.038	164.418	-0.512	4.5947255219E+002	2.3961277843E+001	1.3780373225E+002	0.158	1.555	1.645		
130.718	1.141	164.226	-0.485	5.1322562780E+002	2.9005584396E+001	1.3276593156E+002	0.176	1.601	1.675		
130.888	1.201	164.152	-0.418	5.3514036635E+002	3.1167455093E+001	1.2806540027E+002	0.182	1.626	1.692		
131.266	1.325	163.997	-0.396	5.8319482397E+002	3.6044869967E+001	1.2647169695E+002	0.195	1.690	1.736		
131.643	1.461	163.853	-0.376	6.3061845803E+002	4.1141221209E+001	1.2077959601E+002	0.208	1.766	1.787		
131.693	1.481	163.836	-0.358	6.3660556878E+002	4.1804878684E+001	1.2181231100E+002	0.209	1.777	1.794		
132.000	1.581	163.726	-0.341	6.7713375277E+002	4.6542848663E+001	1.3229683806E+002	0.222	1.853	1.843		
132.377	1.718	163.603	-0.325	7.2715558509E+002	5.2828352229E+001	1.3562194098E+002	0.234	1.961	1.911		
132.443	1.742	163.582	-0.311	7.3604340325E+002	5.3992434027E+001	1.3690645579E+002	0.236	1.982	1.923		
132.820	1.867	163.465	-0.302	7.8935391448E+002	6.1278604858E+001	1.4496438506E+002	0.252	2.114	2.000		
133.183	1.994	163.358	-0.288	8.4318869393E+002	6.9181222122E+001	1.5031558449E+002	0.268	2.265	2.084		
133.500	2.095	163.269	-0.275	8.9138736941E+002	7.6560097589E+001	1.5345284023E+002	0.283	2.417	2.164		
133.877	2.220	163.167	-0.265	9.5002443029E+002	8.5930963051E+001	1.5608255435E+002	0.303	2.621	2.266		
133.975	2.254	163.143	-0.242	9.6525807287E+002	8.8472781985E+001	1.5604227886E+002	0.308	2.680	2.294		
134.352	2.376	163.053	-0.225	1.0238210625E+003	9.8458672646E+001	1.5206325873E+002	0.327	2.933	2.409		
134.730	2.509	162.973	-0.206	1.0800561669E+003	1.0840038186E+002	1.4328780779E+002	0.345	3.228	2.532		
134.848	2.553	162.951	-0.179	1.0967055188E+003	1.1140094559E+002	1.4136349274E+002	0.350	3.334	2.572		
135.225	2.688	162.884	-0.166	1.1498838142E+003	1.2124072995E+002	1.4233127875E+002	0.366	3.731	2.713		
135.602	2.830	162.825	-0.146	1.2041565866E+003	1.3168559889E+002	1.4499533943E+002	0.383	4.302	2.883		
135.878	2.941	162.789	-0.126	1.2442854728E+003	1.3980364821E+002	1.5568807599E+002	0.396	4.888	3.036		
136.000	2.984	162.775	-0.083	1.2638833295E+003	1.4393106844E+002	1.5480183709E+002	0.403	5.214	3.122		
136.377	3.136	162.748	-0.054	1.3162047399E+003	1.5544774944E+002	1.3861476493E+002	0.418	6.369	3.404		
136.647	3.256	162.740	0.003	1.3536028761E+003	1.6418175193E+002	1.3545243687E+002	0.430	7.448	3.661		
137.025	3.407	162.750	0.057	1.4030605381E+003	1.7649862213E+002	1.2390220633E+002	0.446	9.097	4.102		
137.310	3.543	162.778	0.125	1.4368550996E+003	1.8567054878E+002	1.0932121787E+002	0.458	10.132	4.521		

137.687	3.688	162.833	0.163	1.4735227226E+003	1.9638020292E+002	8.5624294063E+001	0.471	10.700	5.128
137.868	3.768	162.869	0.218	1.4879713865E+003	2.0100930782E+002	7.6312710494E+001	0.476	10.580	5.439
138.000	3.814	162.901	0.265	1.4977002717E+003	2.0432517502E+002	6.7986269139E+001	0.481	10.429	5.670
138.377	3.957	163.004	0.301	1.5174080110E+003	2.1207091018E+002	4.4809713510E+001	0.482	9.660	6.263
138.541	4.034	163.063	0.375	1.5242217283E+003	2.1540640157E+002	3.7645201460E+001	0.482	9.246	6.499
138.919	4.167	163.207	0.380	1.5349929277E+003	2.2201018929E+002	2.0823085848E+001	0.483	8.404	6.934
138.920	4.168	163.207	0.426	1.5350192487E+003	2.2203081711E+002	2.0785946363E+001	0.483	8.402	6.935
139.089	4.235	163.279	0.468	1.5382743187E+003	2.2478990098E+002	1.5606317650E+001	0.479	8.074	7.070
139.466	4.357	163.463	0.513	1.5410637295E+003	2.3048022967E+002	2.0095993176E+000	0.471	7.374	7.149
139.738	4.463	163.612	0.562	1.5405598253E+003	2.3444842033E+002	-6.6231514245E+000	0.466	6.887	7.048
140.000	4.545	163.763	0.565	1.5376122576E+003	2.3788711885E+002	-1.5783923702E+001	0.461	6.469	6.809
140.377	4.657	163.973	0.571	1.5291831302E+003	2.4168089433E+002	-2.8992625032E+001	0.465	5.903	6.290
140.481	4.694	164.037	0.582	1.5259788235E+003	2.4264119179E+002	-3.1940254072E+001	0.465	5.738	6.115
140.859	4.789	164.254	0.571	1.5123965821E+003	2.4513469583E+002	-4.0393502167E+001	0.467	5.198	5.493
141.236	4.882	164.468	0.536	1.4954842971E+003	2.4643471690E+002	-4.4525176719E+001	0.467	4.719	4.912
141.483	4.922	164.588	0.482	1.4845317554E+003	2.4660608528E+002	-4.5328481154E+001	0.465	4.468	4.600
141.861	4.978	164.769	0.486	1.4668528603E+003	2.4629266907E+002	-4.8782561879E+001	0.461	4.146	4.200
142.238	5.038	164.955	0.493	1.4477040222E+003	2.4527283994E+002	-5.1488565626E+001	0.457	3.874	3.862
142.368	5.060	165.020	0.469	1.4409762896E+003	2.4483844928E+002	-5.0988360994E+001	0.455	3.790	3.760
142.746	5.103	165.193	0.463	1.4225644762E+003	2.4344855506E+002	-4.9632346063E+001	0.450	3.594	3.522
143.000	5.134	165.312	0.469	1.4097993823E+003	2.4237930056E+002	-5.0657836210E+001	0.446	3.474	3.380
143.180	5.157	165.397	0.502	1.4006053483E+003	2.4157616859E+002	-5.2787694749E+001	0.443	3.395	3.289
143.558	5.217	165.592	0.521	1.3792489711E+003	2.3966449556E+002	-5.7701067826E+001	0.436	3.235	3.106
143.935	5.281	165.791	0.524	1.3570447100E+003	2.3762026835E+002	-5.4759663181E+001	0.429	3.088	2.945
143.955	5.283	165.800	0.503	1.3559534689E+003	2.3751877170E+002	-5.4694131362E+001	0.428	3.081	2.938
144.333	5.333	165.991	0.478	1.3342406475E+003	2.3547897230E+002	-5.5140083274E+001	0.421	2.956	2.804
144.710	5.363	166.161	0.453	1.3143262111E+003	2.3353893406E+002	-5.3641019089E+001	0.415	2.854	2.697
144.714	5.364	166.163	0.470	1.3141335298E+003	2.3351971184E+002	-5.3675728523E+001	0.414	2.853	2.696
145.091	5.396	166.341	0.460	1.2928289923E+003	2.3130616950E+002	-5.6126118522E+001	0.408	2.755	2.597
145.469	5.420	166.510	0.450	1.2717618781E+003	2.2893948588E+002	-5.6578282466E+001	0.400	2.666	2.507
145.470	5.420	166.511	0.448	1.2716824374E+003	2.2893019781E+002	-5.6579021065E+001	0.400	2.666	2.507
145.500	5.422	166.524	0.475	1.2699959672E+003	2.2873075338E+002	-5.6863573754E+001	0.400	2.659	2.500
145.877	5.452	166.705	0.525	1.2469582281E+003	2.2589762257E+002	-6.8461611123E+001	0.393	2.571	2.411
146.243	5.516	166.915	0.573	1.2192625914E+003	2.2220491322E+002	-7.6455130995E+001	0.384	2.471	2.316
146.621	5.576	167.130	0.558	1.1900959305E+003	2.1812380931E+002	-7.6724378288E+001	0.375	2.376	2.226
146.998	5.627	167.336	0.544	1.1613405630E+003	2.1391342096E+002	-7.6668864187E+001	0.366	2.289	2.149
147.046	5.633	167.361	0.522	1.1577224595E+003	2.1336282562E+002	-7.6701981413E+001	0.364	2.278	2.140
147.423	5.670	167.558	0.481	1.1288545225E+003	2.0888124998E+002	-7.2609084553E+001	0.355	2.199	2.075
147.801	5.677	167.724	0.432	1.1029072163E+003	2.0461705697E+002	-6.6159410375E+001	0.346	2.134	2.028
147.902	5.675	167.765	0.382	1.0962629776E+003	2.0347242842E+002	-6.3531733511E+001	0.343	2.117	2.017
148.000	5.666	167.801	0.411	1.0902206361E+003	2.0241650958E+002	-6.4635704546E+001	0.341	2.103	2.009
148.377	5.651	167.960	0.431	1.0615027408E+003	1.9708967086E+002	-8.0266496188E+001	0.333	2.041	1.973
148.663	5.646	168.086	0.476	1.0377100704E+003	1.9249490816E+002	-9.0716031273E+001	0.326	1.993	1.948
149.040	5.645	168.276	0.488	9.9982705839E+002	1.8492481757E+002	-1.0001994130E+002	0.314	1.927	1.915
149.395	5.633	168.443	0.477	9.6447365781E+002	1.7764523560E+002	-1.0295590541E+002	0.303	1.875	1.891
149.772	5.606	168.625	0.474	9.2430270523E+002	1.6924283052E+002	-1.0618521926E+002	0.290	1.824	1.868
150.095	5.577	168.774	0.430	8.9010051002E+002	1.6200272937E+002	-9.5269777609E+001	0.279	1.788	1.853
150.280	5.534	168.843	0.385	8.7360361734E+002	1.5847752447E+002	-9.1286793174E+001	0.274	1.775	1.848
150.657	5.454	168.991	0.387	8.3748183994E+002	1.5070091857E+002	-9.5068995268E+001	0.263	1.749	1.839
150.837	5.413	169.059	0.416	8.2044637403E+002	1.4698817052E+002	-9.9842949161E+001	0.258	1.740	1.837
151.215	5.331	169.223	0.457	7.7873850195E+002	1.3779986890E+002	-1.1817434815E+002	0.245	1.723	1.835
151.542	5.276	169.382	0.505	7.3783743933E+002	1.2876518016E+002	-1.2945711324E+002	0.231	1.712	1.837
151.920	5.208	169.579	0.527	6.8696388356E+002	1.1765365377E+002	-1.3578936746E+002	0.214	1.705	1.844
152.278	5.147	169.769	0.498	6.3794847367E+002	1.0719990594E+002	-1.2826342820E+002	0.198	1.705	1.855
152.656	5.041	169.945	0.452	5.9290744879E+002	9.7914955775E+001	-1.1560299858E+002	0.183	1.710	1.868
153.033	4.925	170.111	0.437	5.5067555835E+002	8.9640336964E+001	-1.0339868541E+002	0.170	1.721	1.886
153.046	4.921	170.116	0.389	5.4936210984E+002	8.9390903821E+001	-1.0299510239E+002	0.170	1.721	1.887
153.423	4.771	170.263	0.393	5.1179687087E+002	8.2370732199E+001	-1.0788387043E+002	0.159	1.735	1.906
153.500	4.743	170.294	0.389	5.0339772211E+002	8.0797781996E+001	-1.0826090091E+002	0.157	1.740	1.912
153.877	4.592	170.439	0.383	4.6498928748E+002	7.3649059420E+001	-1.0339906484E+002	0.146	1.761	1.938
153.899	4.583	170.447	0.362	4.6273955721E+002	7.3225029649E+001	-1.0331435231E+002	0.145	1.762	1.940
154.277	4.416	170.584	0.352	4.2491835406E+002	6.6031337679E+001	-1.0088168268E+002	0.134	1.788	1.971
154.654	4.242	170.713	0.344	3.8658029960E+002	5.8468889359E+001	-1.0693872875E+002	0.121	1.817	2.006
154.698	4.222	170.729	0.333	3.8182015195E+002	5.7504131329E+001	-1.0810895137E+002	0.119	1.821	2.010
155.076	4.036	170.854	0.306	3.3927252050E+002	4.8574252590E+001	-1.1269322251E+002	0.103	1.860	2.056
155.453	3.831	170.960	0.281	2.9674393260E+002	3.9303703498E+001	-1.1703679040E+002	0.085	1.905	2.107
155.470	3.822	170.964	0.224	2.9475891810E+002	3.8872475258E+001	-1.1673894521E+002	0.084	1.907	2.110
155.848	3.586	171.048	0.214	2.5484907831E+002	3.0196413901E+001	-1.0505108637E+002	0.080	1.955	2.164
156.224	3.345	171.126	0.195	2.1556189890E+002	2.2146562404E+001	-1.0616568691E+002	0.080	2.007	2.224
156.602	3.087	171.195	0.168	1.7480942221E+002	1.3589270325E+001	-1.0525100028E+002	0.080	2.067	2.293
156.979	2.817	171.253	0.153	1.3610408425E+002	6.2556043794E+000	-6.7019762839E+001	0.080	2.123	2.356
156.982	2.815	171.253	0.212	1.3591682400E+002	6.2269309230E+000	-6.6853925653E+001	0.080	2.123	2.356
157.359	2.560	171.334	0.363	1.0569745885E+002	2.6891682469E+000	-9.7194290640E+001	0.080	2.170	2.409
157.728	2.423	171.524	0.499	6.3714631177E+001	5.7550160127E-001	-9.3295395633E+001	0.080	2.249	2.500
158.000	2.304	171.653	0.499	4.2471312576E+001	2.1960703904E-001	-9.2495669921E+001	0.080	2.289	2.544

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)
125.932	0.377	0.493	-40.043	-1.476	-0.728	100.039	49.325
126.309	0.377	0.493	-40.043	-4.427	-2.183	100.482	49.544
126.687	0.377	0.493	-40.043	-7.378	-3.638	102.061	50.322
127.064	0.377	0.493	-40.043	-10.329	-5.093	103.257	50.912
127.442	0.377	0.493	-40.043	-13.280	-6.548	104.242	51.398
127.819	0.181	0.236	-40.043	-15.463	-3.656	106.022	25.067
128.000	0.377	0.493	-40.043	-17.541	-8.649	105.678	52.106
128.377	0.249	0.326	-40.043	-19.817	-6.457	106.321	34.645
128.627	0.373	0.483	-39.386	-21.932	-10.587	108.772	52.504
129.000	0.377	0.488	-39.386	-24.937	-12.179	110.107	53.774
129.377	0.377	0.488	-39.386	-28.321	-13.831	112.071	54.734
129.755	0.208	0.269	-39.386	-30.945	-8.325	113.898	30.642
129.963	0.377	0.479	-38.057	-33.104	-15.869	113.722	54.516
130.340	0.377	0.479	-38.057	-36.311	-17.407	115.646	55.439
130.718	0.171	0.217	-38.057	-38.639	-8.375	114.831	24.889
130.888	0.377	0.470	-36.504	-40.206	-18.881	114.904	53.958
131.266	0.377	0.470	-36.504	-43.209	-20.291	115.573	54.273
131.643	0.050	0.062	-36.504	-44.908	-2.784	115.360	7.152
131.693	0.307	0.372	-34.487	-45.019	-16.755	117.388	43.688
132.000	0.377	0.458	-34.487	-47.863	-21.919	118.746	54.380
132.377	0.065	0.079	-34.487	-49.893	-3.951	120.076	9.509
132.443	0.377	0.449	-32.720	-50.387	-22.606	121.174	54.366
132.820	0.362	0.431	-32.720	-53.538	-23.062	123.920	53.379
133.183	0.317	0.370	-30.984	-54.556	-20.197	124.751	46.184
133.500	0.377	0.440	-30.984	-57.237	-25.201	126.429	55.666
133.877	0.097	0.114	-30.984	-59.036	-6.713	127.759	14.527
133.975	0.377	0.433	-29.373	-58.688	-25.421	127.276	55.130
134.352	0.377	0.433	-29.373	-61.332	-26.566	127.155	55.077
134.730	0.118	0.135	-29.373	-63.066	-8.514	126.295	17.051
134.848	0.377	0.428	-28.081	-62.756	-26.849	126.114	53.955
135.225	0.377	0.428	-28.081	-65.229	-27.907	127.720	54.642
135.602	0.275	0.312	-28.081	-67.367	-21.004	129.564	40.396
135.878	0.122	0.135	-25.322	-63.497	-8.601	131.435	17.804
136.000	0.377	0.418	-25.322	-65.160	-27.210	128.452	53.640
136.377	0.270	0.298	-25.322	-67.424	-20.124	130.189	38.858
136.647	0.377	0.403	-20.596	-58.385	-23.543	125.919	50.776
137.025	0.285	0.305	-20.596	-60.129	-18.316	125.551	38.243
137.310	0.377	0.388	-13.567	-41.039	-15.935	115.606	44.890
137.687	0.180	0.186	-13.567	-41.860	-7.765	114.119	21.170
137.868	0.132	0.133	-6.039	-16.529	-2.200	106.324	14.149
138.000	0.377	0.380	-6.039	-16.885	-6.409	105.179	39.923
138.377	0.164	0.165	-6.039	-17.308	-2.851	105.139	17.318
138.541	0.377	0.378	1.542	11.487	4.338	98.864	37.332
138.919	0.001	0.001	1.542	11.653	0.015	98.942	0.125
138.920	0.169	0.169	1.542	11.777	1.989	98.939	16.709
139.089	0.377	0.382	9.216	42.715	16.334	94.251	36.042
139.466	0.271	0.275	9.216	44.219	12.153	94.423	25.952
139.738	0.262	0.271	14.620	66.611	18.064	92.280	25.025
140.000	0.377	0.390	14.620	67.719	26.417	94.079	36.700
140.377	0.104	0.107	14.620	68.083	7.314	94.557	10.158
140.481	0.377	0.397	17.844	80.316	31.849	95.352	37.811
140.859	0.377	0.397	17.844	80.840	32.057	97.577	38.694
141.236	0.247	0.259	17.844	81.274	21.089	99.512	25.822
141.483	0.377	0.398	18.377	83.611	33.256	100.599	40.014
141.861	0.377	0.398	18.377	84.121	33.460	101.950	40.551

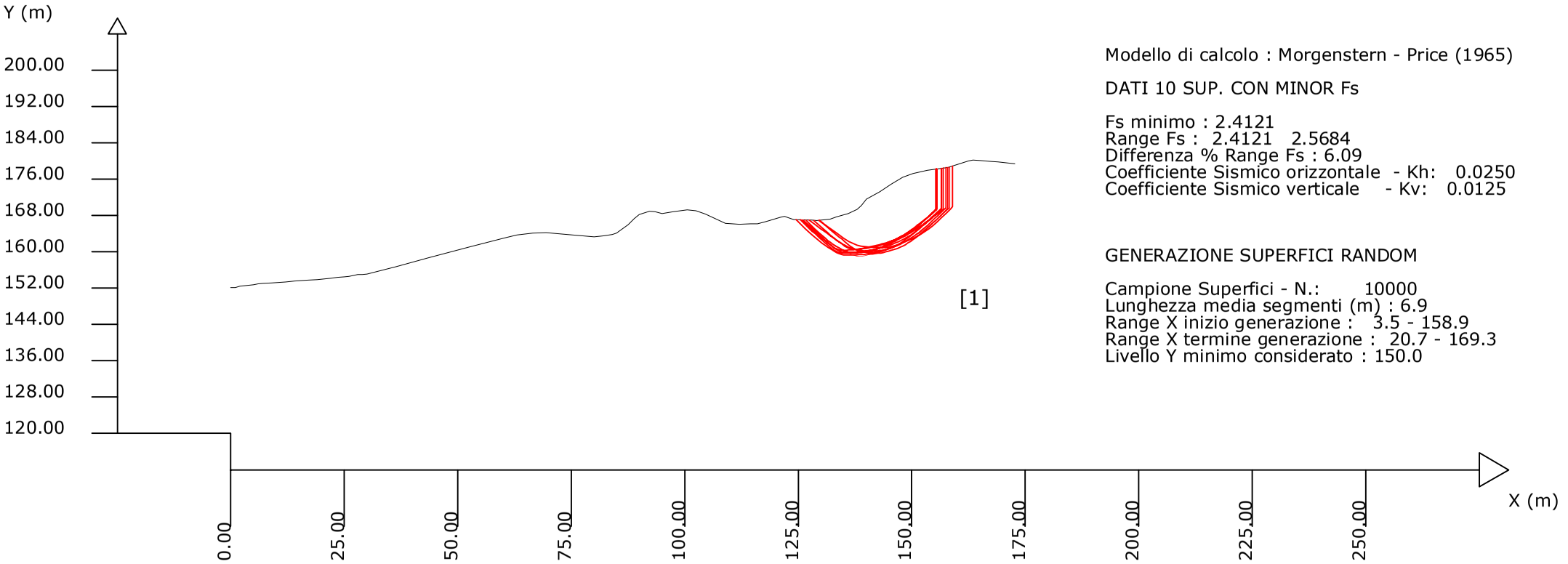
142.238	0.130	0.137	18.377	84.465	11.571	102.411	14.029
142.368	0.377	0.399	19.016	87.081	34.768	102.736	41.018
142.746	0.254	0.269	19.016	87.494	23.529	103.125	27.732
143.000	0.180	0.191	19.016	87.843	16.758	103.309	19.708
143.180	0.377	0.401	19.690	90.801	36.403	103.875	41.645
143.558	0.377	0.401	19.690	91.554	36.705	104.144	41.752
143.935	0.020	0.021	19.690	91.950	1.954	103.882	2.207
143.955	0.377	0.403	20.406	94.874	38.210	104.260	41.990
144.333	0.377	0.403	20.406	95.610	38.506	104.051	41.906
144.710	0.004	0.004	20.406	95.982	0.368	104.219	0.399
144.714	0.377	0.405	21.071	98.681	39.918	104.745	42.371
145.091	0.377	0.405	21.071	99.399	40.208	105.074	42.504
145.469	0.001	0.002	21.071	99.759	0.150	105.353	0.159
145.470	0.030	0.032	21.716	102.042	3.277	105.544	3.389
145.500	0.377	0.406	21.716	102.374	41.595	106.223	43.159
145.877	0.366	0.394	21.716	102.972	40.570	108.365	42.694
146.243	0.377	0.408	22.331	105.688	43.128	109.166	44.547
146.621	0.377	0.408	22.331	106.273	43.367	109.456	44.666
146.998	0.047	0.051	22.331	106.602	5.434	109.899	5.602
147.046	0.377	0.410	22.886	108.823	44.587	110.261	45.176
147.423	0.377	0.410	22.886	109.386	44.818	109.763	44.972
147.801	0.101	0.110	22.886	109.742	12.090	109.747	12.090
147.902	0.098	0.108	24.711	115.924	12.504	109.871	11.851
148.000	0.377	0.416	24.711	115.846	48.136	112.927	46.923
148.377	0.285	0.314	24.711	115.599	36.290	114.759	36.026
148.663	0.377	0.423	26.801	121.613	51.430	119.469	50.523
149.040	0.355	0.397	26.801	121.185	48.144	119.929	47.645
149.395	0.377	0.432	29.013	126.645	54.664	122.774	52.994
149.772	0.323	0.369	29.013	126.060	46.519	122.953	45.373
150.095	0.185	0.216	31.106	130.525	28.217	120.321	26.011
150.280	0.377	0.441	31.106	129.643	57.154	121.982	53.777
150.657	0.180	0.210	31.106	128.640	27.007	122.038	25.621
150.837	0.377	0.451	33.120	131.563	59.295	126.870	57.180
151.215	0.328	0.391	33.120	130.088	50.888	130.440	51.026
151.542	0.377	0.461	35.055	131.706	60.732	133.385	61.506
151.920	0.358	0.438	35.055	129.949	56.899	133.078	58.268
152.278	0.377	0.471	36.737	130.338	61.391	128.441	60.498
152.656	0.377	0.471	36.737	128.335	60.448	125.346	59.040
153.033	0.013	0.016	36.737	127.299	2.023	122.641	1.949
153.046	0.377	0.480	38.118	127.648	61.244	121.787	58.432
153.423	0.077	0.097	38.118	126.341	12.309	124.040	12.084
153.500	0.377	0.480	38.118	124.882	59.917	122.185	58.623
153.877	0.022	0.028	38.118	123.572	3.414	122.851	3.394
153.899	0.377	0.484	38.780	122.795	59.459	122.445	59.289
154.277	0.377	0.484	38.780	120.234	58.218	123.596	59.846
154.654	0.044	0.057	38.780	118.803	6.744	125.677	7.134
154.698	0.377	0.489	39.494	117.851	57.646	128.007	62.614
155.076	0.377	0.489	39.494	115.198	56.348	129.075	63.136
155.453	0.017	0.022	39.494	113.812	2.497	130.150	2.856
155.470	0.377	0.494	40.224	112.820	55.775	127.337	62.952
155.848	0.376	0.493	40.224	110.076	54.266	125.435	61.838
156.224	0.377	0.500	40.952	107.636	53.795	127.069	63.508
156.602	0.377	0.500	40.952	104.794	52.375	123.199	61.573
156.979	0.003	0.004	40.952	103.362	0.384	112.205	0.417
156.982	0.377	0.505	41.641	102.140	51.591	111.226	56.180
157.359	0.369	0.493	41.641	99.243	48.938	106.870	52.699
157.728	0.272	0.368	42.319	96.904	35.665	101.570	37.382
158.000	0.377	0.510	42.319	94.643	48.315	100.699	51.407

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 : 14/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Morgenstern - Price (1965)

DATI 10 SUP. CON MINOR Fs

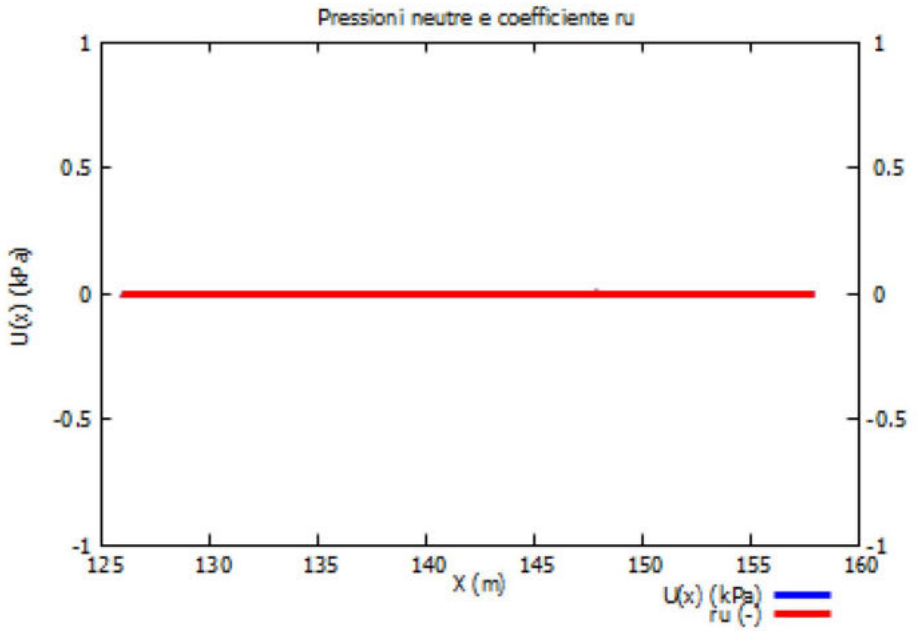
Fs minimo : 2.4121
Range Fs : 2.4121 2.5684
Differenza % Range Fs : 6.09
Coefficiente Sismico orizzontale - Kh: 0.0250
Coefficiente Sismico verticale - Kv: 0.0125

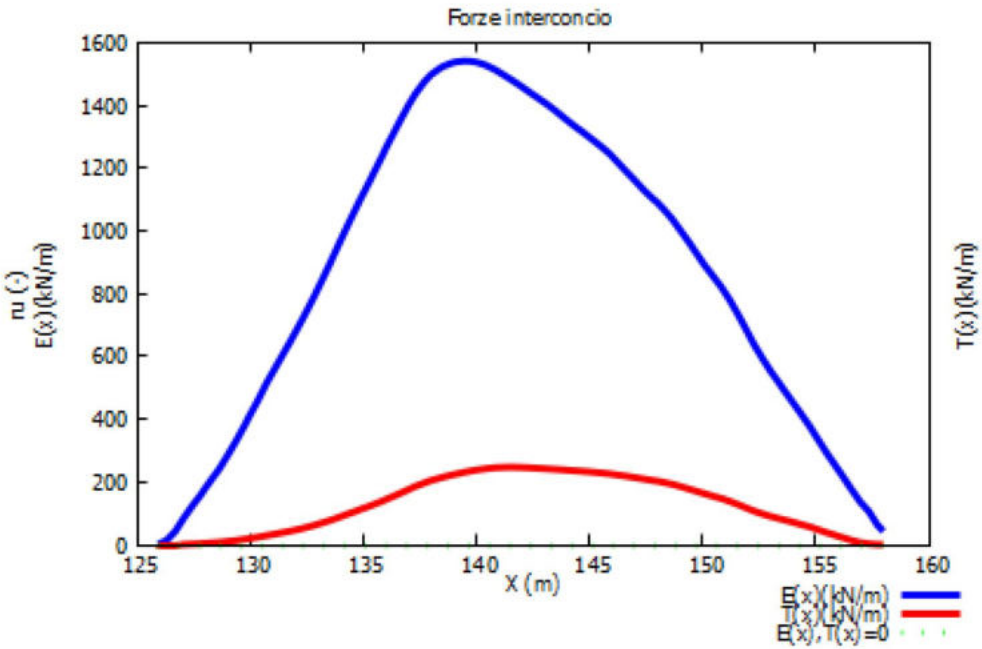
GENERAZIONE SUPERFICI RANDOM

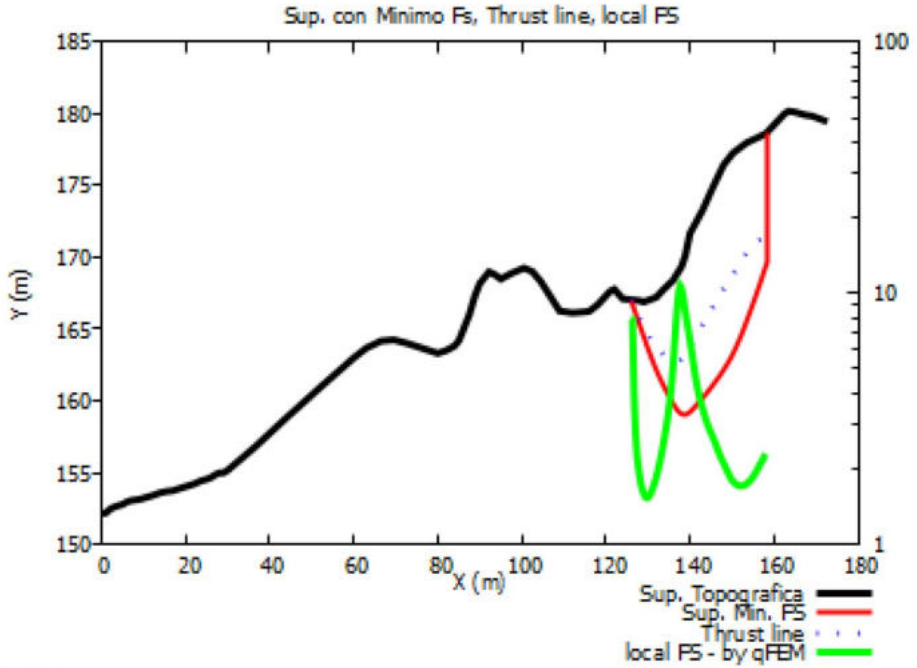
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 6.9
Range X inizio generazione : 3.5 - 158.9
Range X termine generazione : 20.7 - 169.3
Livello Y minimo considerato : 150.0

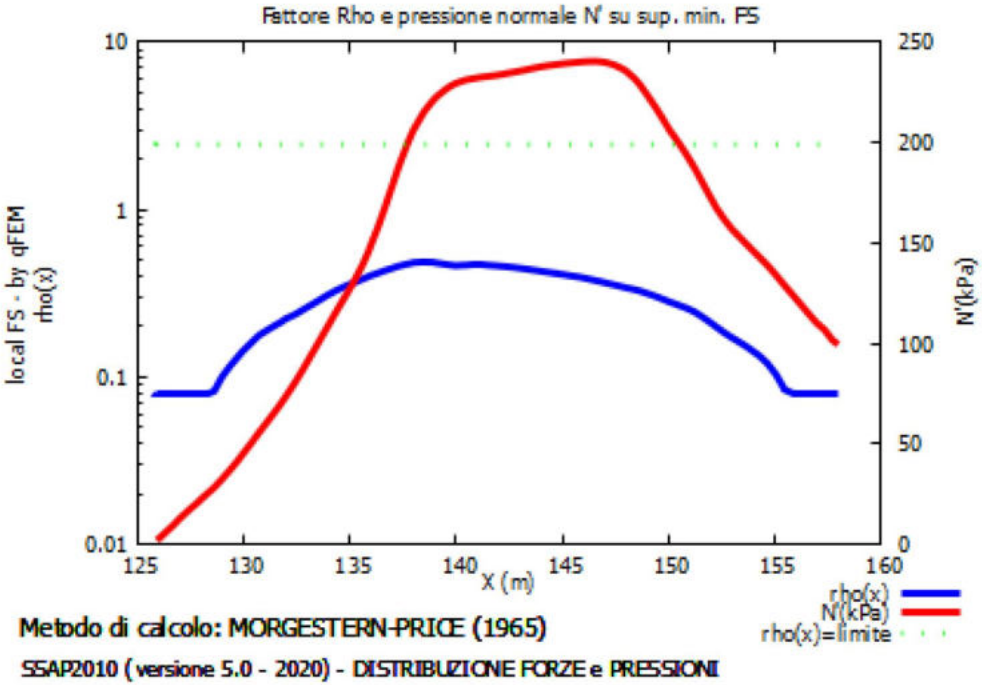
Parametri Geotecnici degli strati # ----------

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





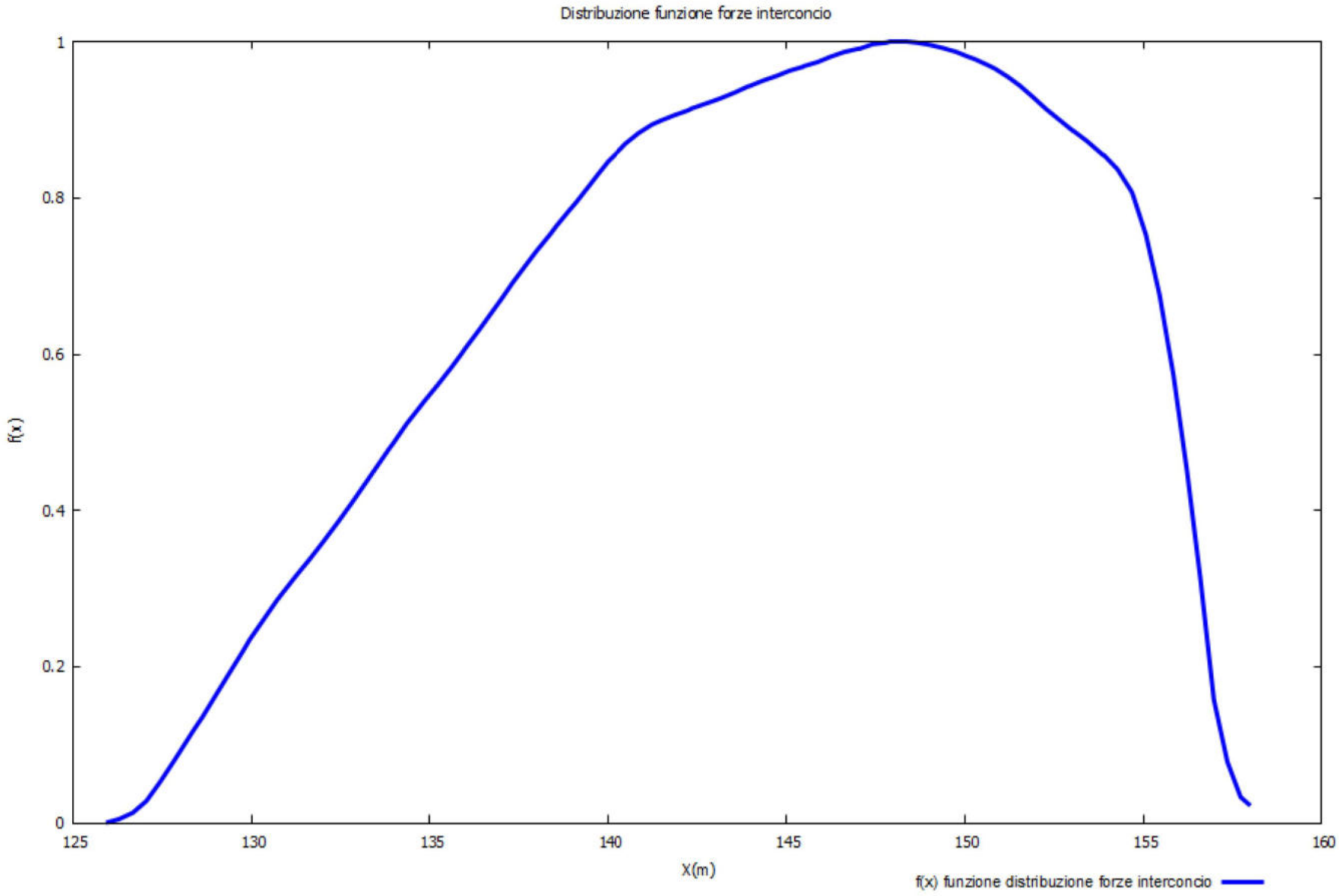


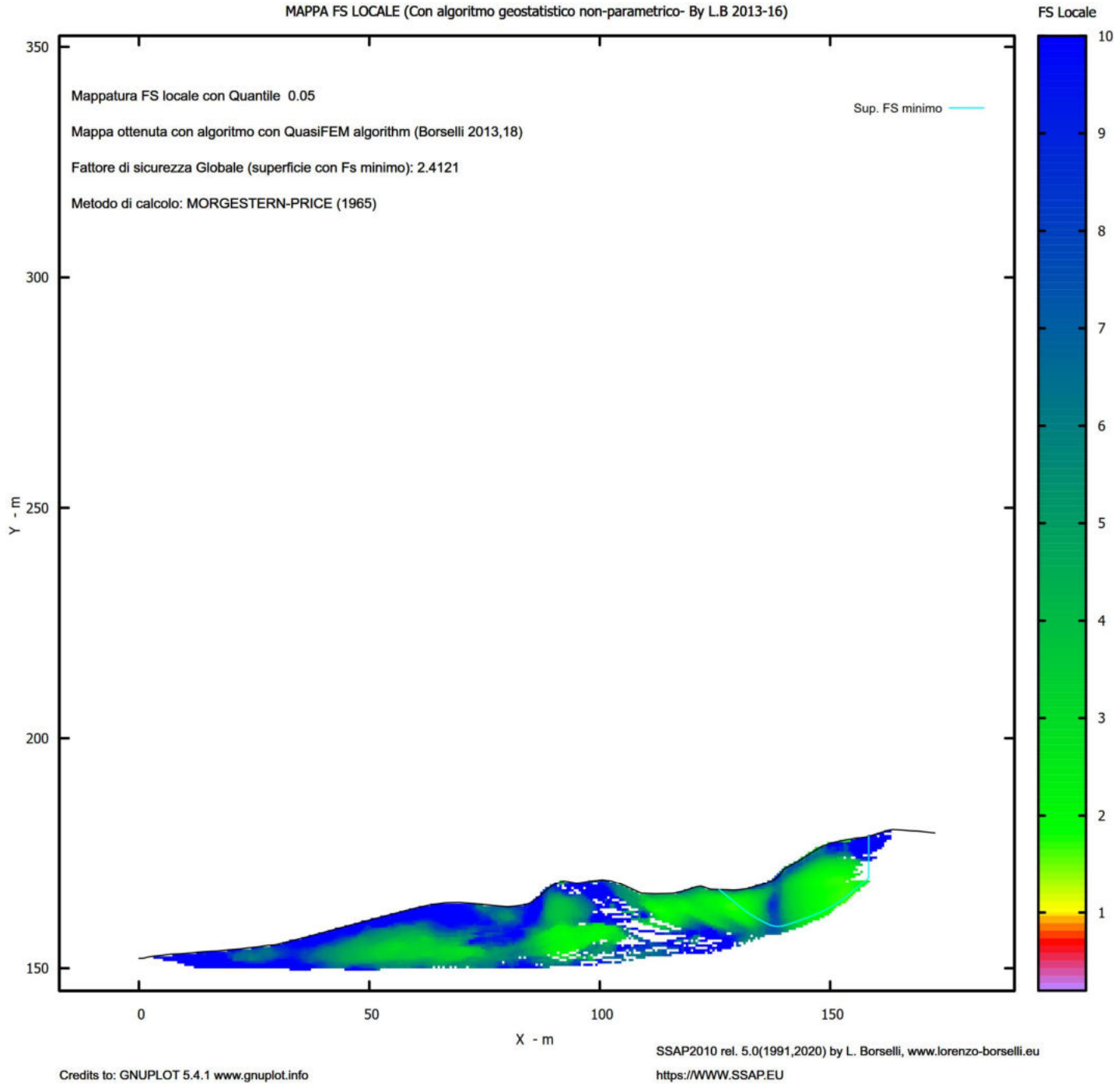


Metodo di calcolo: MORGESTERN-PRICE (1965)

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

14/11/21 12:37




MAPPA FS LOCALE (Con algoritmo geostatistico non-parametrico- By L.B 2013-16)
FS Locale
Mappatura FS locale con Quantile 0.05
Mappa ottenuta con algoritmo con QuasiFEM algorithm (Borselli 2013,18)
Fattore di sicurezza Globale (superficie con Fs minimo): 2.4121
Metodo di calcolo: MORGESTERN-PRICE (1965)
Sup. FS minimo
Y - m
X - m
350
300
250
200
150
0
50
100
150
10
9
8
7
6
5
4
3
2
1
Credits to: GNUPLOT 5.4.1 www.gnuplot.info
SSAP2010 rel. 5.0(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\MIADONNA\VERIFICA3\NONDRENATA\BERSELLI\BERSELLI.txt
Data: 14/11/2021
Localita' :
Descrizione:
Modello pendio: VERIFICA3NONDRENATA.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	152.14	-	-	-	-	-	-
1.00	152.17	-	-	-	-	-	-
2.00	152.43	-	-	-	-	-	-
3.00	152.59	-	-	-	-	-	-
5.00	152.78	-	-	-	-	-	-
6.00	152.94	-	-	-	-	-	-
7.00	153.04	-	-	-	-	-	-
9.09	153.13	-	-	-	-	-	-
12.10	153.38	-	-	-	-	-	-
14.00	153.59	-	-	-	-	-	-
15.50	153.68	-	-	-	-	-	-
17.00	153.73	-	-	-	-	-	-
19.00	153.92	-	-	-	-	-	-
22.00	154.19	-	-	-	-	-	-
23.50	154.40	-	-	-	-	-	-
25.00	154.52	-	-	-	-	-	-
26.00	154.64	-	-	-	-	-	-
27.00	154.83	-	-	-	-	-	-
28.00	154.96	-	-	-	-	-	-
29.00	154.97	-	-	-	-	-	-
30.00	155.15	-	-	-	-	-	-
36.50	156.77	-	-	-	-	-	-
43.50	158.68	-	-	-	-	-	-
52.50	161.06	-	-	-	-	-	-
60.00	162.99	-	-	-	-	-	-
63.00	163.67	-	-	-	-	-	-
66.50	164.16	-	-	-	-	-	-
69.50	164.24	-	-	-	-	-	-
73.00	163.97	-	-	-	-	-	-
80.00	163.30	-	-	-	-	-	-
82.00	163.50	-	-	-	-	-	-
84.00	163.82	-	-	-	-	-	-
85.00	164.18	-	-	-	-	-	-
87.50	165.99	-	-	-	-	-	-
88.81	167.30	-	-	-	-	-	-
90.00	168.19	-	-	-	-	-	-
92.19	168.98	-	-	-	-	-	-
93.50	168.80	-	-	-	-	-	-
95.00	168.48	-	-	-	-	-	-
97.50	168.87	-	-	-	-	-	-
100.50	169.25	-	-	-	-	-	-
102.50	169.00	-	-	-	-	-	-
104.50	168.31	-	-	-	-	-	-
109.00	166.25	-	-	-	-	-	-
112.00	166.12	-	-	-	-	-	-

114.50	166.18	-	-	-	-	-	-
116.00	166.23	-	-	-	-	-	-
118.00	166.68	-	-	-	-	-	-
121.00	167.63	-	-	-	-	-	-
122.00	167.77	-	-	-	-	-	-
124.00	167.10	-	-	-	-	-	-
128.00	166.97	-	-	-	-	-	-
129.00	166.88	-	-	-	-	-	-
132.00	167.21	-	-	-	-	-	-
133.50	167.69	-	-	-	-	-	-
136.00	168.40	-	-	-	-	-	-
138.00	169.34	-	-	-	-	-	-
138.92	170.13	-	-	-	-	-	-
140.00	171.66	-	-	-	-	-	-
143.00	173.28	-	-	-	-	-	-
145.50	174.90	-	-	-	-	-	-
148.00	176.44	-	-	-	-	-	-
150.28	177.28	-	-	-	-	-	-
153.50	177.98	-	-	-	-	-	-
158.00	178.60	-	-	-	-	-	-
162.50	180.00	-	-	-	-	-	-
163.50	180.18	-	-	-	-	-	-
165.00	180.12	-	-	-	-	-	-
167.50	179.91	-	-	-	-	-	-
169.00	179.85	-	-	-	-	-	-
172.73	179.45	-	-	-	-	-	-

ASSENZA DI FALDA

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

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

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

---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
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): 6.9 (+/-) 50%
INTERVALLO ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 3.45 158.91
LIVELLO MINIMO CONSIDERATO (Ymin): 150.00
INTERVALLO ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 20.73 169.28

*** 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 : 0.0250
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.0125
COEFFICIENTE c=Kv/Kh UTILIZZATO : 0.5000
FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00

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

---------- RISULTATO FINALE ELABORAZIONI ----------
---

* DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *

Fattore di sicurezza (FS) 2.4459 - Min. - X Y Lambda= 0.1436

X	Y
128.87	166.89
131.24	164.69
132.34	163.71
133.05	163.14
133.63	162.74
134.21	162.42
134.70	162.20
135.26	162.02
135.88	161.88
136.67	161.75
137.36	161.64
138.01	161.55
138.63	161.48
139.25	161.41
139.87	161.36
140.51	161.32
141.19	161.28
141.95	161.25
142.57	161.26
143.15	161.30
143.68	161.37
144.28	161.49
144.81	161.64
145.39	161.83
146.01	162.08
146.74	162.41
147.42	162.72
148.07	163.02
148.71	163.31
149.33	163.61
149.96	163.91
150.60	164.22
151.25	164.55
151.94	164.89
152.56	165.22
153.16	165.57
153.75	165.93
154.36	166.34
154.95	166.75
155.56	167.21
156.19	167.70
156.88	168.27
157.53	168.81
158.16	169.35
158.78	169.90
158.78	178.84

Fattore di sicurezza (FS) 2.4807 - N.2 -- X Y Lambda= 0.1493

X	Y
128.76	166.90
130.26	165.41
131.02	164.68
131.55	164.18
132.01	163.76
132.44	163.39
132.87	163.03
133.31	162.67
133.79	162.30
134.34	161.90
134.77	161.60
135.16	161.37
135.50	161.21
135.89	161.06
136.23	160.97
136.61	160.91
137.03	160.89
137.57	160.89
138.06	160.89
138.51	160.90
138.94	160.92
139.37	160.94
139.79	160.97

140.23	161.00
140.68	161.05
141.16	161.10
141.59	161.15
142.01	161.22
142.41	161.30
142.83	161.40
143.23	161.51
143.65	161.64
144.09	161.79
144.59	161.97
145.04	162.14
145.46	162.32
145.87	162.51
146.30	162.72
146.70	162.93
147.12	163.16
147.55	163.41
148.00	163.69
148.45	163.96
148.89	164.23
149.33	164.50
149.77	164.76
150.20	165.03
150.64	165.29
151.09	165.57
151.54	165.84
151.97	166.11
152.39	166.39
152.80	166.68
153.23	166.99
153.64	167.30
154.06	167.63
154.50	167.99
154.96	168.38
155.41	168.76
155.84	169.14
156.19	169.45
156.19	178.35

Fattore di sicurezza (FS) 2.4972 - N.3 -- X Y Lambda= 0.1475

127.83	166.98
131.04	164.35
132.51	163.20
133.47	162.54
134.23	162.09
135.00	161.75
135.67	161.53
136.45	161.36
137.33	161.25
138.51	161.17
139.43	161.14
140.25	161.16
140.98	161.23
141.78	161.37
142.49	161.54
143.27	161.79
144.10	162.10
145.09	162.51
146.01	162.90
146.89	163.28
147.74	163.66
148.58	164.04
149.42	164.43
150.28	164.84
151.17	165.27
152.11	165.74
152.95	166.19
153.75	166.66
154.52	167.15
155.34	167.72
156.12	168.31
156.92	168.96
157.65	169.58

157.65 178.55

Fattore di sicurezza (FS) 2.5138 - N.4 -- X Y Lambda= 0.1291

127.43 166.99
130.05 164.37
131.29 163.18
132.12 162.44
132.81 161.90
133.48 161.44
134.09 161.08
134.78 160.75
135.53 160.44
136.50 160.10
137.25 159.87
137.92 159.71
138.51 159.61
139.17 159.57
139.76 159.57
140.42 159.63
141.15 159.75
142.10 159.95
142.86 160.14
143.56 160.35
144.20 160.58
144.88 160.86
145.51 161.17
146.18 161.54
146.90 161.97
147.74 162.50
148.49 163.00
149.20 163.50
149.89 164.00
150.59 164.54
151.27 165.08
151.96 165.66
152.67 166.27
153.42 166.94
154.15 167.59
154.87 168.24
155.59 168.89
156.30 169.54
156.30 178.37

Fattore di sicurezza (FS) 2.5179 - N.5 -- X Y Lambda= 0.1240

128.01 166.97
130.18 164.94
131.25 163.97
131.99 163.33
132.63 162.81
133.22 162.37
133.80 161.97
134.41 161.58
135.07 161.19
135.83 160.76
136.46 160.44
137.03 160.19
137.54 160.00
138.12 159.83
138.64 159.73
139.21 159.65
139.86 159.61
140.68 159.60
141.33 159.62
141.92 159.66
142.44 159.75
143.02 159.88
143.54 160.03
144.11 160.24
144.73 160.51
145.47 160.85
146.13 161.18
146.75 161.50
147.34 161.83

147.94 162.18
148.53 162.54
149.13 162.93
149.76 163.35
150.44 163.82
151.06 164.27
151.66 164.73
152.25 165.20
152.85 165.71
153.43 166.22
154.02 166.77
154.63 167.35
155.27 167.99
155.90 168.62
156.53 169.24
156.88 169.60
156.88 178.45

Fattore di sicurezza (FS) 2.5183 - N.6 -- X Y Lambda= 0.1167
128.88 166.89
131.10 164.99
132.19 164.08
132.94 163.49
133.59 163.01
134.20 162.60
134.78 162.23
135.40 161.88
136.05 161.54
136.79 161.17
137.43 160.87
138.04 160.62
138.61 160.41
139.21 160.22
139.78 160.07
140.40 159.93
141.08 159.81
141.89 159.70
142.53 159.63
143.11 159.62
143.63 159.64
144.21 159.72
144.73 159.83
145.31 159.99
145.94 160.22
146.72 160.54
147.40 160.83
148.03 161.13
148.63 161.43
149.24 161.76
149.83 162.11
150.44 162.49
151.08 162.91
151.78 163.40
152.43 163.87
153.04 164.34
153.64 164.82
154.25 165.33
154.85 165.85
155.45 166.41
156.07 167.00
156.73 167.65
157.38 168.30
158.02 168.93
158.65 169.56
159.01 169.92
159.01 178.91

Fattore di sicurezza (FS) 2.5230 - N.7 -- X Y Lambda= 0.1248
128.37 166.94
131.47 164.52
132.93 163.43
133.90 162.77
134.71 162.29

135.50 161.90
136.22 161.60
137.02 161.34
137.90 161.12
139.03 160.88
139.92 160.74
140.71 160.65
141.42 160.63
142.21 160.67
142.92 160.75
143.71 160.90
144.57 161.12
145.65 161.44
146.54 161.74
147.37 162.05
148.13 162.38
148.94 162.78
149.70 163.20
150.51 163.68
151.36 164.23
152.32 164.90
153.20 165.53
154.04 166.16
154.85 166.80
155.68 167.48
156.48 168.16
157.29 168.89
158.00 169.54
158.00 178.60

Fattore di sicurezza (FS) 2.5325 - N.8 -- X Y Lambda= 0.1317
128.43 166.93
130.09 165.39
130.94 164.63
131.53 164.10
132.06 163.65
132.53 163.26
133.01 162.88
133.51 162.49
134.05 162.09
134.66 161.65
135.14 161.33
135.57 161.09
135.95 160.91
136.39 160.76
136.76 160.67
137.18 160.62
137.64 160.60
138.25 160.62
138.80 160.64
139.30 160.66
139.79 160.69
140.27 160.72
140.75 160.76
141.23 160.80
141.74 160.85
142.27 160.91
142.75 160.97
143.22 161.05
143.66 161.14
144.13 161.25
144.58 161.37
145.05 161.52
145.55 161.68
146.10 161.89
146.60 162.09
147.08 162.29
147.53 162.50
148.00 162.74
148.45 162.99
148.93 163.26
149.42 163.56
149.97 163.91
150.46 164.25

150.94 164.59
151.40 164.93
151.87 165.31
152.32 165.69
152.79 166.10
153.27 166.54
153.78 167.02
154.28 167.50
154.77 167.96
155.26 168.43
155.74 168.89
156.23 169.36
156.23 178.36

Fattore di sicurezza (FS) 2.5652 - N.9 -- X Y Lambda= 0.1546
128.34 166.94
130.95 164.54
132.15 163.48
132.93 162.86
133.55 162.44
134.19 162.10
134.73 161.88
135.36 161.70
136.07 161.56
137.03 161.43
137.79 161.35
138.45 161.33
139.05 161.34
139.70 161.40
140.29 161.50
140.93 161.64
141.62 161.84
142.45 162.11
143.19 162.37
143.89 162.63
144.56 162.90
145.23 163.18
145.89 163.48
146.56 163.80
147.25 164.14
147.98 164.53
148.69 164.90
149.38 165.27
150.07 165.65
150.75 166.03
151.44 166.41
152.14 166.81
152.87 167.22
153.62 167.67
154.30 168.09
154.96 168.53
155.59 169.00
155.94 169.27
155.94 178.32

Fattore di sicurezza (FS) 2.5800 - N.10 -- X Y Lambda= 0.1274
128.05 166.97
131.82 163.88
133.54 162.54
134.64 161.79
135.50 161.29
136.39 160.92
137.16 160.70
138.05 160.55
139.10 160.48
140.55 160.46
141.63 160.50
142.56 160.60
143.35 160.77
144.26 161.06
145.06 161.39
145.95 161.85
146.93 162.43

148.15	163.22
149.24	163.95
150.25	164.66
151.22	165.37
152.19	166.11
153.13	166.85
154.09	167.64
155.08	168.48
156.12	169.39
156.12	178.34

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

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	2.446	3803.9	1555.2	2093.1	Surplus
2	2.481	3630.3	1463.4	2020.6	Surplus
3	2.497	3744.0	1499.3	2094.7	Surplus
4	2.514	4027.4	1602.1	2265.0	Surplus
5	2.518	4047.5	1607.5	2279.3	Surplus
6	2.518	4173.7	1657.4	2350.6	Surplus
7	2.523	3852.9	1527.1	2173.1	Surplus
8	2.533	3725.0	1470.9	2107.0	Surplus
9	2.565	3491.8	1361.2	1994.5	Surplus
10	2.580	3783.5	1466.5	2170.4	Surplus

Esito analisi: SURPLUS di RESISTENZA!

Valore minimo di SURPLUS di RESISTENZA (kN/m): 1994.5

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)
128.870	0.130	-42.90	0.14	0.00	0.00	0.00	100.00
129.000	0.362	-42.90	2.18	0.00	0.00	0.00	100.00
129.362	0.362	-42.90	4.93	0.00	0.00	0.00	100.00
129.723	0.362	-42.90	7.68	0.00	0.00	0.00	100.00
130.085	0.362	-42.90	10.43	0.00	0.00	0.00	100.00
130.446	0.362	-42.90	13.18	0.00	0.00	0.00	100.00
130.808	0.362	-42.90	15.93	0.00	0.00	0.00	100.00
131.169	0.071	-42.90	3.47	0.00	0.00	0.00	100.00
131.241	0.362	-41.72	19.17	0.00	0.00	0.00	100.00
131.602	0.362	-41.72	21.82	0.00	0.00	0.00	100.00
131.964	0.036	-41.72	2.34	0.00	0.00	0.00	100.00
132.000	0.338	-41.72	23.30	0.00	0.00	0.00	100.00
132.338	0.362	-38.83	27.90	0.00	0.00	0.00	100.00
132.700	0.352	-38.83	30.04	0.00	0.00	0.00	100.00
133.052	0.362	-34.65	33.63	0.00	0.00	0.00	100.00
133.413	0.087	-34.65	8.46	0.00	0.00	0.00	100.00
133.500	0.126	-34.65	12.53	0.00	0.00	0.00	100.00
133.626	0.362	-28.74	37.61	0.00	0.00	0.00	100.00
133.987	0.220	-28.74	23.92	0.00	0.00	0.00	100.00
134.207	0.362	-23.63	41.00	0.00	0.00	0.00	100.00
134.568	0.136	-23.63	15.96	0.00	0.00	0.00	100.00
134.705	0.362	-17.89	43.48	0.00	0.00	0.00	100.00
135.066	0.197	-17.89	24.43	0.00	0.00	0.00	100.00
135.264	0.362	-13.00	45.84	0.00	0.00	0.00	100.00
135.625	0.251	-13.00	32.56	0.00	0.00	0.00	100.00
135.876	0.124	-9.52	16.40	0.00	0.00	0.00	100.00
136.000	0.362	-9.52	48.72	0.00	0.00	0.00	100.00
136.362	0.305	-9.52	42.39	0.00	0.00	0.00	100.00
136.666	0.362	-8.76	51.81	0.00	0.00	0.00	100.00

137.028	0.337	-8.76	49.78	0.00	0.00	0.00	100.00
137.365	0.362	-7.85	54.98	0.00	0.00	0.00	100.00
137.726	0.274	-7.85	42.69	0.00	0.00	0.00	100.00
138.000	0.014	-7.85	2.15	0.00	0.00	0.00	100.00
138.014	0.362	-6.87	58.40	0.00	0.00	0.00	100.00
138.375	0.260	-6.87	43.53	0.00	0.00	0.00	100.00
138.635	0.285	-5.85	49.38	0.00	0.00	0.00	100.00
138.920	0.335	-5.85	60.61	0.00	0.00	0.00	100.00
139.255	0.362	-4.83	69.28	0.00	0.00	0.00	100.00
139.616	0.256	-4.83	51.42	0.00	0.00	0.00	100.00
139.872	0.128	-3.85	26.43	0.00	0.00	0.00	100.00
140.000	0.362	-3.85	76.27	0.00	0.00	0.00	100.00
140.362	0.152	-3.85	32.52	0.00	0.00	0.00	100.00
140.513	0.362	-2.92	78.53	0.00	0.00	0.00	100.00
140.875	0.318	-2.92	70.47	0.00	0.00	0.00	100.00
141.193	0.362	-2.13	81.45	0.00	0.00	0.00	100.00
141.555	0.362	-2.13	82.98	0.00	0.00	0.00	100.00
141.916	0.032	-2.13	7.34	0.00	0.00	0.00	100.00
141.948	0.362	0.41	84.58	0.00	0.00	0.00	100.00
142.310	0.261	0.41	61.99	0.00	0.00	0.00	100.00
142.571	0.362	3.78	86.93	0.00	0.00	0.00	100.00
142.932	0.068	3.78	16.42	0.00	0.00	0.00	100.00
143.000	0.151	3.78	36.69	0.00	0.00	0.00	100.00
143.151	0.362	7.73	89.11	0.00	0.00	0.00	100.00
143.512	0.171	7.73	42.70	0.00	0.00	0.00	100.00
143.683	0.362	11.55	91.02	0.00	0.00	0.00	100.00
144.045	0.231	11.55	58.80	0.00	0.00	0.00	100.00
144.276	0.362	15.24	92.85	0.00	0.00	0.00	100.00
144.638	0.173	15.24	44.82	0.00	0.00	0.00	100.00
144.811	0.362	18.87	94.23	0.00	0.00	0.00	100.00
145.172	0.216	18.87	56.77	0.00	0.00	0.00	100.00
145.388	0.112	21.82	29.38	0.00	0.00	0.00	100.00
145.500	0.362	21.82	95.61	0.00	0.00	0.00	100.00
145.862	0.144	21.82	38.22	0.00	0.00	0.00	100.00
146.005	0.362	24.03	96.35	0.00	0.00	0.00	100.00
146.367	0.362	24.03	96.80	0.00	0.00	0.00	100.00
146.728	0.008	24.03	2.14	0.00	0.00	0.00	100.00
146.736	0.362	24.33	97.25	0.00	0.00	0.00	100.00
147.098	0.322	24.33	86.91	0.00	0.00	0.00	100.00
147.420	0.362	24.66	98.06	0.00	0.00	0.00	100.00
147.781	0.219	24.66	59.55	0.00	0.00	0.00	100.00
148.000	0.071	24.66	19.40	0.00	0.00	0.00	100.00
148.071	0.362	25.00	98.34	0.00	0.00	0.00	100.00
148.433	0.274	25.00	74.41	0.00	0.00	0.00	100.00
148.707	0.362	25.36	97.88	0.00	0.00	0.00	100.00
149.068	0.264	25.36	71.28	0.00	0.00	0.00	100.00
149.332	0.362	25.70	97.38	0.00	0.00	0.00	100.00
149.694	0.267	25.70	71.82	0.00	0.00	0.00	100.00
149.961	0.319	26.03	85.43	0.00	0.00	0.00	100.00
150.280	0.319	26.03	85.00	0.00	0.00	0.00	100.00
150.599	0.362	26.36	95.73	0.00	0.00	0.00	100.00
150.960	0.294	26.36	77.26	0.00	0.00	0.00	100.00
151.254	0.362	26.66	94.39	0.00	0.00	0.00	100.00
151.616	0.322	26.66	83.57	0.00	0.00	0.00	100.00
151.938	0.362	28.22	92.92	0.00	0.00	0.00	100.00
152.300	0.261	28.22	66.46	0.00	0.00	0.00	100.00
152.560	0.362	29.96	91.41	0.00	0.00	0.00	100.00
152.922	0.243	29.96	60.89	0.00	0.00	0.00	100.00
153.165	0.335	31.76	83.31	0.00	0.00	0.00	100.00
153.500	0.249	31.76	61.13	0.00	0.00	0.00	100.00
153.749	0.362	33.48	87.74	0.00	0.00	0.00	100.00
154.110	0.252	33.48	60.23	0.00	0.00	0.00	100.00
154.362	0.362	35.14	85.34	0.00	0.00	0.00	100.00
154.723	0.226	35.14	52.66	0.00	0.00	0.00	100.00
154.950	0.362	36.74	82.84	0.00	0.00	0.00	100.00
155.311	0.247	36.74	55.65	0.00	0.00	0.00	100.00
155.558	0.362	38.16	80.08	0.00	0.00	0.00	100.00
155.919	0.268	38.16	58.31	0.00	0.00	0.00	100.00
156.188	0.362	39.37	77.05	0.00	0.00	0.00	100.00
156.549	0.326	39.37	67.99	0.00	0.00	0.00	100.00
156.875	0.362	39.92	73.59	0.00	0.00	0.00	100.00
157.237	0.291	39.92	57.81	0.00	0.00	0.00	100.00
157.528	0.362	40.50	70.23	0.00	0.00	0.00	100.00
157.889	0.111	40.50	21.16	0.00	0.00	0.00	100.00
158.000	0.161	40.50	30.46	0.00	0.00	0.00	100.00

158.161	0.362	41.09	67.32	0.00	0.00	0.00	100.00
158.523	0.260	41.09	47.52	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 (--)		
128.870	0.000	166.892	-0.681	0.0000000000E+000	0.0000000000E+000	0.0000000000E+000		7.1874889617E+001	0.082	7.782	9.340
129.000	0.027	166.798	-0.681	1.0533363779E+001	2.5905727706E-003	8.9761718172E+001		0.082	7.782	9.340	
129.362	0.122	166.557	-0.663	5.1951904789E+001	8.7994265828E-002	1.0548520430E+002		0.082	3.827	4.590	
129.723	0.220	166.318	-0.666	8.6802740745E+001	4.3797958827E-001	1.0229068411E+002		0.082	2.505	3.003	
130.085	0.312	166.075	-0.694	1.2591153542E+002	1.4526873240E+000	1.1759897725E+002		0.082	1.951	2.338	
130.446	0.389	165.816	-0.694	1.7183078602E+002	3.1686243780E+000	1.2930111825E+002		0.082	1.692	2.025	
130.808	0.483	165.574	-0.605	2.1940062514E+002	5.3867625524E+000	1.1963863998E+002		0.082	1.588	1.896	
131.169	0.624	165.379	-0.539	2.5833357655E+002	7.2343362802E+000	1.1195394579E+002		0.082	1.515	1.805	
131.241	0.652	165.340	-0.496	2.6639588431E+002	7.6559144376E+000	1.1222232403E+002		0.082	1.507	1.794	
131.602	0.797	165.164	-0.504	3.0591658630E+002	9.9064334985E+000	1.2037264847E+002		0.087	1.500	1.776	
131.964	0.932	164.976	-0.518	3.5342938786E+002	1.3049902034E+001	1.2794085645E+002		0.101	1.542	1.806	
132.000	0.946	164.958	-0.473	3.5807210642E+002	1.3366165054E+001	1.2807469308E+002		0.102	1.547	1.809	
132.338	1.089	164.799	-0.459	4.0289648642E+002	1.6719200165E+001	1.3433777626E+002		0.113	1.623	1.867	
132.700	1.218	164.637	-0.439	4.5214219184E+002	2.0753019367E+001	1.3975017036E+002		0.126	1.741	1.948	
133.052	1.350	164.486	-0.385	5.0257253251E+002	2.5389590527E+001	1.3452302179E+002		0.141	1.909	2.046	
133.413	1.476	164.362	-0.335	5.4798880254E+002	3.0136536171E+001	1.2354314424E+002		0.154	2.116	2.144	
133.500	1.509	164.335	-0.287	5.5865358200E+002	3.1356831439E+001	1.1778006691E+002		0.158	2.179	2.168	
133.626	1.562	164.302	-0.259	5.7249017963E+002	3.3026773292E+001	1.1098571257E+002		0.162	2.271	2.200	
133.987	1.668	164.209	-0.234	6.1348087376E+002	3.8464955102E+001	1.0814019752E+002		0.178	2.608	2.297	
134.207	1.745	164.166	-0.178	6.3652859986E+002	4.2101572071E+001	1.0233402505E+002		0.188	2.886	2.353	
134.568	1.844	164.106	-0.158	6.7196470125E+002	4.8246490942E+001	9.3386525527E+001		0.206	3.476	2.444	
134.705	1.885	164.087	-0.120	6.8446152999E+002	5.0603666914E+001	9.1679004126E+001		0.212	3.762	2.477	
135.066	1.960	164.046	-0.104	7.1764388820E+002	5.7600812039E+001	9.1644649138E+001		0.233	4.815	2.572	
135.264	2.007	164.029	-0.063	7.3572760957E+002	6.1881395902E+001	8.8247868063E+001		0.245	5.700	2.629	
135.625	2.072	164.011	-0.034	7.6543407425E+002	6.9826136092E+001	7.4752408350E+001		0.269	7.882	2.735	
135.876	2.128	164.009	-0.003	7.8287290300E+002	7.5283729824E+001	6.9134176412E+001		0.284	10.002	2.810	
136.000	2.150	164.010	0.040	7.9143963395E+002	7.8211799285E+001	7.0529720518E+001		0.293	11.250	2.852	
136.362	2.228	164.028	0.063	8.1865299730E+002	8.8649170140E+001	7.6036235793E+001		0.320	15.785	3.020	
136.666	2.304	164.052	0.099	8.4202583398E+002	9.8222092125E+001	7.4955175841E+001		0.345	20.452	3.202	
137.028	2.401	164.094	0.126	8.6838485998E+002	1.0959900342E+002	6.9816646878E+001		0.373	23.048	3.476	
137.365	2.500	164.140	0.154	8.9093731218E+002	1.1943436242E+002	6.5470472677E+001		0.395	21.167	3.790	
137.726	2.610	164.201	0.182	9.1403934421E+002	1.2923828706E+002	5.9951861078E+001		0.415	17.827	4.211	
138.000	2.703	164.256	0.202	9.2962840082E+002	1.3549328514E+002	5.1416008638E+001		0.426	15.365	4.567	
138.014	2.708	164.259	0.280	9.3032422849E+002	1.3576007601E+002	5.1332326895E+001		0.426	15.249	4.585	
138.375	2.854	164.361	0.305	9.5072574998E+002	1.4341717950E+002	5.6836304950E+001		0.430	12.518	5.165	
138.635	2.972	164.449	0.355	9.6555297088E+002	1.4882588209E+002	5.6670430318E+001		0.433	11.049	5.634	
138.920	3.108	164.555	0.391	9.8157952065E+002	1.5457175681E+002	5.6162549830E+001		0.435	9.836	6.172	
139.255	3.278	164.691	0.417	1.0003843354E+003	1.6128429105E+002	5.5901716724E+001		0.429	8.816	6.755	
139.616	3.463	164.845	0.425	1.0204953064E+003	1.6851841800E+002	5.5330807165E+001		0.423	8.029	7.198	
139.872	3.593	164.954	0.406	1.0345948670E+003	1.7365971890E+002	5.0483520414E+001		0.420	7.615	7.304	
140.000	3.649	165.001	0.364	1.0407508252E+003	1.7591935483E+002	4.8822449501E+001		0.417	7.471	7.275	
140.362	3.804	165.132	0.356	1.0590709800E+003	1.8265263609E+002	4.9897895015E+001		0.424	7.165	6.787	
140.513	3.866	165.183	0.324	1.0665995414E+003	1.8541080142E+002	4.9149803214E+001		0.427	7.076	6.528	
140.875	3.999	165.298	0.312	1.0840054812E+003	1.9174595100E+002	4.7864854581E+001		0.433	6.903	5.871	
141.193	4.113	165.396	0.312	1.0991699425E+003	1.9722433263E+002	4.7881549994E+001		0.438	6.764	5.308	
141.555	4.241	165.511	0.311	1.1165887695E+003	2.0349517835E+002	4.4958656740E+001		0.443	6.537	4.724	
141.916	4.365	165.621	0.303	1.1316765747E+003	2.0898463825E+002	3.4644904076E+001		0.447	6.243	4.279	
141.948	4.375	165.630	0.276	1.1327535257E+003	2.0938245796E+002	3.3713699984E+001		0.447	6.216	4.250	
142.310	4.472	165.730	0.277	1.1436597090E+003	2.1352762442E+002	2.5579666742E+001		0.448	5.846	3.942	
142.571	4.543	165.802	0.282	1.1494755001E+003	2.1594330507E+002	1.9623817186E+001		0.448	5.508	3.764	
142.932	4.622	165.905	0.289	1.1552486202E+003	2.1872299523E+002	1.1387082913E+001		0.447	5.044	3.552	
143.000	4.639	165.926	0.313	1.1559613019E+003	2.1917460972E+002	1.0077880460E+001		0.447	4.944	3.513	
143.151	4.676	165.974	0.338	1.1573274147E+003	2.2012536141E+002	7.1378222492E+000		0.446	4.727	3.432	
143.512	4.753	166.099	0.373	1.1582270032E+003	2.2199526352E+002	-3.8456637590E+000		0.443	4.225	3.244	
143.683	4.802	166.172	0.434	1.1570539747E+003	2.2267117947E+002	-8.7139726169E+000		0.441	3.967	3.150	

144.045	4.887	166.331	0.458	1.1524795944E+003	2.2366488678E+002	-1.9237192115E+001	0.437	3.511	2.968
144.276	4.953	166.444	0.482	1.1470613856E+003	2.2384809361E+002	-2.5673749758E+001	0.434	3.247	2.857
144.638	5.027	166.617	0.481	1.1365199138E+003	2.2359062476E+002	-3.2389508392E+001	0.429	2.926	2.709
144.811	5.064	166.701	0.507	1.1306445625E+003	2.2327983712E+002	-3.7515605092E+001	0.426	2.793	2.644
145.172	5.128	166.888	0.505	1.1143802114E+003	2.2174175282E+002	-4.6936716708E+001	0.420	2.570	2.522
145.388	5.159	166.993	0.479	1.1039758533E+003	2.2053580412E+002	-4.8056143023E+001	0.415	2.465	2.461
145.500	5.166	167.045	0.462	1.0986180132E+003	2.1988355232E+002	-4.8888844484E+001	0.413	2.421	2.433
145.862	5.188	167.211	0.471	1.0799405490E+003	2.1734363520E+002	-5.6772615363E+001	0.406	2.301	2.353
146.005	5.202	167.283	0.525	1.0714778047E+003	2.1611372133E+002	-6.1126964140E+001	0.403	2.256	2.321
146.367	5.234	167.477	0.541	1.0472716656E+003	2.1231596176E+002	-6.8962463142E+001	0.394	2.161	2.244
146.728	5.271	167.674	0.546	1.0216156072E+003	2.0809759373E+002	-6.9209744897E+001	0.384	2.082	2.173
146.736	5.271	167.678	0.532	1.0210639730E+003	2.0800497329E+002	-6.9241754199E+001	0.384	2.080	2.172
147.098	5.300	167.871	0.533	9.9487176934E+002	2.0341693100E+002	-7.4006171254E+001	0.374	2.018	2.111
147.420	5.327	168.043	0.509	9.7061615545E+002	1.9893102353E+002	-7.3488013259E+001	0.364	1.972	2.061
147.781	5.336	168.218	0.472	9.4482176058E+002	1.9383010180E+002	-6.9630609016E+001	0.353	1.930	2.016
148.000	5.334	168.317	0.443	9.2981449889E+002	1.9067475244E+002	-6.7209713859E+001	0.347	1.910	1.993
148.071	5.331	168.347	0.444	9.2506150715E+002	1.8962031992E+002	-6.7713491831E+001	0.345	1.904	1.986
148.433	5.325	168.509	0.456	8.9883280245E+002	1.8357449444E+002	-7.5374145137E+001	0.335	1.873	1.952
148.707	5.325	168.636	0.436	8.7757935945E+002	1.7836312962E+002	-7.5256244249E+001	0.326	1.851	1.928
149.068	5.303	168.786	0.416	8.5144947700E+002	1.7147058276E+002	-7.4050250254E+001	0.314	1.828	1.902
149.332	5.288	168.896	0.427	8.3156347972E+002	1.6603958956E+002	-7.7295356345E+001	0.305	1.812	1.885
149.694	5.271	169.053	0.435	8.0265354543E+002	1.5796629145E+002	-8.1738736174E+001	0.291	1.793	1.864
149.961	5.259	169.170	0.405	7.8045229743E+002	1.5172651423E+002	-7.8834421397E+001	0.280	1.779	1.849
150.280	5.224	169.290	0.377	7.5692165312E+002	1.4513482149E+002	-7.4890552393E+001	0.269	1.767	1.837
150.599	5.188	169.410	0.376	7.3271004334E+002	1.3850625918E+002	-7.6944142410E+001	0.258	1.755	1.827
150.960	5.145	169.546	0.377	7.0449434282E+002	1.3104571203E+002	-7.9648282842E+001	0.246	1.742	1.818
151.254	5.111	169.657	0.379	6.8070968952E+002	1.2497887118E+002	-8.1528304851E+001	0.236	1.731	1.813
151.616	5.066	169.794	0.380	6.5097808304E+002	1.1769523633E+002	-8.3471387547E+001	0.224	1.716	1.810
151.938	5.027	169.918	0.373	6.2370494321E+002	1.1128303068E+002	-8.3077697435E+001	0.213	1.701	1.811
152.300	4.965	170.050	0.369	5.9427520862E+002	1.0461616632E+002	-8.3245050511E+001	0.203	1.687	1.816
152.560	4.923	170.147	0.370	5.7223600208E+002	9.9768070551E+001	-8.3915561246E+001	0.194	1.678	1.823
152.922	4.847	170.279	0.371	5.4222759788E+002	9.3331238528E+001	-8.5456503492E+001	0.184	1.669	1.835
153.165	4.799	170.372	0.373	5.2106750323E+002	8.8885085895E+001	-8.6301737731E+001	0.176	1.664	1.846
153.500	4.715	170.495	0.375	4.9249422393E+002	8.2973675378E+001	-8.7666199006E+001	0.166	1.662	1.864
153.749	4.656	170.591	0.382	4.7024027704E+002	7.8412394461E+001	-8.9901867956E+001	0.159	1.663	1.880
154.110	4.555	170.729	0.385	4.3752670482E+002	7.1735605351E+001	-9.3066251215E+001	0.148	1.669	1.906
154.362	4.487	170.827	0.376	4.1366697025E+002	6.6850787196E+001	-9.3934511574E+001	0.139	1.676	1.927
154.723	4.365	170.959	0.360	3.8018835852E+002	5.9958361111E+001	-9.2738666412E+001	0.127	1.690	1.960
154.950	4.285	171.039	0.329	3.5918100312E+002	5.5587907160E+001	-9.2708274829E+001	0.119	1.700	1.981
155.311	4.130	171.153	0.303	3.2573092894E+002	4.8520352508E+001	-9.4006807075E+001	0.106	1.722	2.019
155.558	4.016	171.223	0.254	3.0227351934E+002	4.3505206289E+001	-9.4425185928E+001	0.096	1.740	2.048
155.919	3.816	171.308	0.223	2.6845070626E+002	3.6260451801E+001	-9.9230587062E+001	0.082	1.770	2.092
156.188	3.662	171.364	0.194	2.4070238626E+002	3.0539062546E+001	-1.0486629310E+002	0.082	1.797	2.131
156.549	3.431	171.430	0.177	2.0209644803E+002	2.3094597685E+001	-1.0495586928E+002	0.082	1.841	2.189
156.875	3.219	171.486	0.145	1.6839103493E+002	1.7065398500E+001	-9.9398155000E+001	0.082	1.881	2.241
157.237	2.960	171.529	0.119	1.3402048878E+002	1.0914750846E+001	-9.2770029588E+001	0.082	1.929	2.302
157.528	2.751	171.563	0.152	1.0759969904E+002	7.0225585078E+000	-8.5868091065E+001	0.082	1.966	2.347
157.889	2.507	171.628	0.199	7.8828422519E+001	4.2016119968E+000	-7.5905849328E+001	0.082	2.005	2.395
158.000	2.442	171.657	0.303	7.0537911150E+001	3.6787993669E+000	-7.1669629924E+001	0.082	2.013	2.404
158.161	2.357	171.711	0.588	5.9724743113E+001	3.2154865383E+000	-7.8081510620E+001	0.082	2.021	2.415
158.523	2.296	171.965	0.588	2.2628799345E+001	1.4605353700E+000	-9.3527249889E+001	0.082	2.082	2.488

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)
128.870	0.130	0.178	-42.897	-0.537	-0.096	100.024	17.795
129.000	0.362	0.493	-42.897	-2.920	-1.441	100.288	49.491
129.362	0.362	0.493	-42.897	-6.612	-3.263	101.181	49.931
129.723	0.362	0.493	-42.897	-10.303	-5.084	103.423	51.038

130.085	0.362	0.493	-42.897	-13.994	-6.906	105.789	52.205
130.446	0.362	0.493	-42.897	-17.686	-8.728	107.483	53.041
130.808	0.362	0.493	-42.897	-21.377	-10.549	106.233	52.424
131.169	0.071	0.098	-42.897	-23.588	-2.301	107.194	10.459
131.241	0.362	0.484	-41.716	-25.602	-12.399	107.563	52.094
131.602	0.362	0.484	-41.716	-29.141	-14.113	110.564	53.548
131.964	0.036	0.049	-41.716	-31.089	-1.516	110.559	5.389
132.000	0.338	0.453	-41.716	-33.269	-15.069	112.049	50.751
132.338	0.362	0.464	-38.833	-36.527	-16.952	113.331	52.596
132.700	0.352	0.452	-38.833	-40.374	-18.254	115.728	52.323
133.052	0.362	0.439	-34.652	-41.934	-18.429	115.022	50.549
133.413	0.087	0.105	-34.652	-44.003	-4.636	116.107	12.234
133.500	0.126	0.153	-34.652	-44.962	-6.866	115.209	17.592
133.626	0.362	0.412	-28.742	-41.859	-17.259	115.512	47.628
133.987	0.220	0.250	-28.742	-43.830	-10.977	117.078	29.323
134.207	0.362	0.395	-23.630	-39.268	-15.495	115.267	45.485
134.568	0.136	0.149	-23.630	-40.527	-6.033	115.525	17.196
134.705	0.362	0.380	-17.892	-32.438	-12.323	113.840	43.247
135.066	0.197	0.208	-17.892	-33.364	-6.924	115.499	23.969
135.264	0.362	0.371	-13.000	-24.783	-9.195	111.781	41.474
135.625	0.251	0.257	-13.000	-25.406	-6.532	111.679	28.713
135.876	0.124	0.126	-9.521	-18.305	-2.308	109.396	13.792
136.000	0.362	0.367	-9.521	-18.708	-6.858	111.520	40.879
136.362	0.305	0.309	-9.521	-19.306	-5.967	112.531	34.781
136.666	0.362	0.366	-8.762	-18.078	-6.613	111.588	40.817
137.028	0.337	0.341	-8.762	-18.634	-6.353	110.748	37.757
137.365	0.362	0.365	-7.852	-16.851	-6.149	108.976	39.770
137.726	0.274	0.276	-7.852	-17.284	-4.775	107.565	29.717
138.000	0.014	0.014	-7.852	-17.486	-0.240	106.490	1.463
138.014	0.362	0.364	-6.875	-15.218	-5.541	106.157	38.655
138.375	0.260	0.261	-6.875	-15.798	-4.130	106.057	27.727
138.635	0.285	0.287	-5.848	-13.259	-3.803	104.992	30.113
138.920	0.335	0.337	-5.848	-13.866	-4.668	104.969	35.336
139.255	0.362	0.363	-4.833	-11.331	-4.111	104.109	37.771
139.616	0.256	0.257	-4.833	-11.886	-3.051	104.127	26.731
139.872	0.128	0.128	-3.850	-8.707	-1.115	102.897	13.180
140.000	0.362	0.362	-3.850	-8.881	-3.218	103.052	37.339
140.362	0.152	0.152	-3.850	-9.014	-1.372	102.975	15.675
140.513	0.362	0.362	-2.924	-5.649	-2.045	102.183	36.989
140.875	0.318	0.319	-2.924	-5.754	-1.835	102.143	32.572
141.193	0.362	0.362	-2.126	-2.726	-0.986	101.573	36.745
141.555	0.362	0.362	-2.126	-2.777	-1.005	101.377	36.675
141.916	0.032	0.032	-2.126	-2.805	-0.089	101.139	3.204
141.948	0.362	0.362	0.413	7.535	2.724	99.798	36.080
142.310	0.261	0.261	0.413	7.643	1.997	99.837	26.079
142.571	0.362	0.362	3.779	21.798	7.897	98.763	35.782
142.932	0.068	0.068	3.779	21.985	1.491	98.927	6.711
143.000	0.151	0.151	3.779	22.095	3.334	98.984	14.935
143.151	0.362	0.365	7.734	38.919	14.199	98.313	35.868
143.512	0.171	0.173	7.734	39.355	6.804	98.713	17.066
143.683	0.362	0.369	11.549	55.430	20.453	98.681	36.412
144.045	0.231	0.236	11.549	56.016	13.212	99.620	23.497
144.276	0.362	0.375	15.243	71.129	26.652	100.442	37.635
144.638	0.173	0.179	15.243	71.692	12.864	101.114	18.144
144.811	0.362	0.382	18.871	85.609	32.707	103.185	39.422
145.172	0.216	0.229	18.871	86.197	19.703	104.174	23.812
145.388	0.112	0.120	21.824	96.577	11.605	104.936	12.609
145.500	0.362	0.389	21.824	96.969	37.762	105.930	41.252
145.862	0.144	0.155	21.824	97.374	15.095	107.214	16.620
146.005	0.362	0.396	24.028	104.673	41.431	109.556	43.364
146.367	0.362	0.396	24.028	105.162	41.625	110.614	43.783
146.728	0.008	0.009	24.028	105.412	0.920	110.564	0.965
146.736	0.362	0.397	24.330	106.568	42.281	111.653	44.299
147.098	0.322	0.353	24.330	107.017	37.787	112.802	39.830
147.420	0.362	0.398	24.662	108.458	43.145	113.087	44.986
147.781	0.219	0.241	24.662	108.826	26.201	113.376	27.296
148.000	0.071	0.078	24.662	108.939	8.534	113.737	8.910
148.071	0.362	0.399	25.004	109.789	43.795	115.669	46.141
148.433	0.274	0.303	25.004	109.535	33.139	117.808	35.642
148.707	0.362	0.400	25.358	110.305	44.129	118.047	47.226
149.068	0.264	0.292	25.358	110.033	32.138	119.478	34.897
149.332	0.362	0.401	25.700	110.728	44.425	121.344	48.684
149.694	0.267	0.297	25.700	110.432	32.763	122.308	36.286
149.961	0.319	0.355	26.033	111.082	39.412	119.944	42.556
150.280	0.319	0.355	26.033	110.559	39.213	120.062	42.584

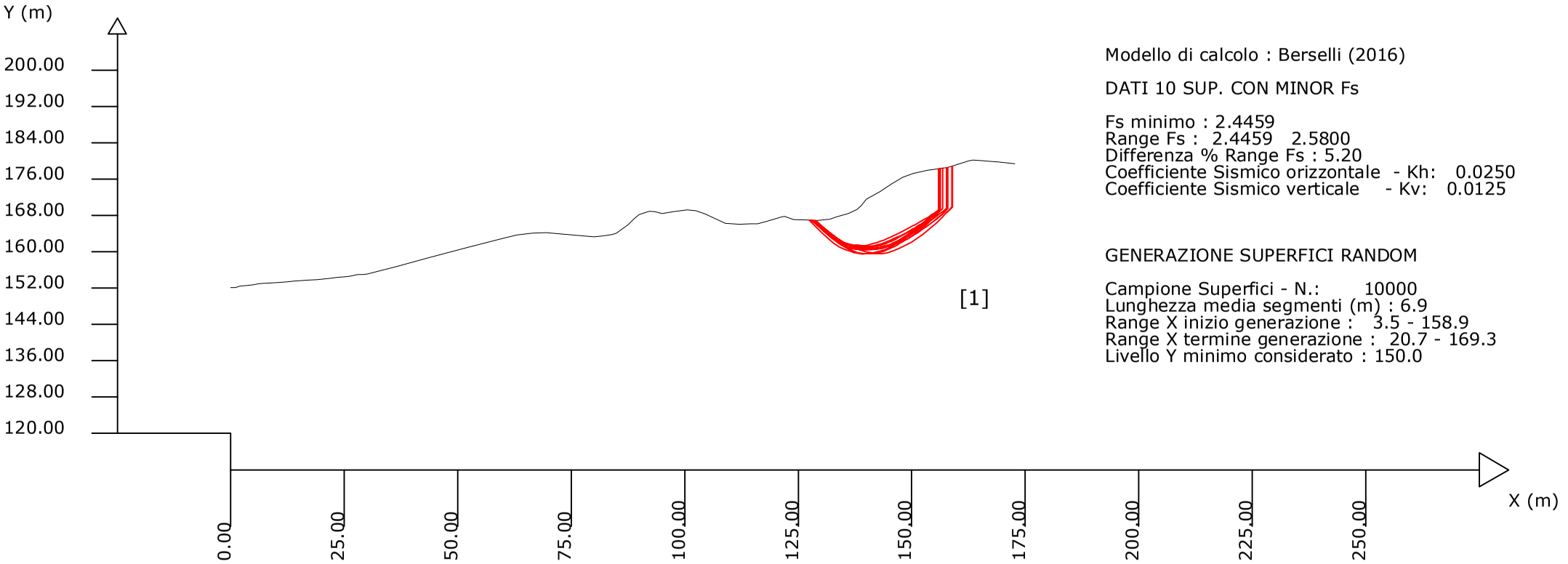
150.599	0.362	0.403	26.357	110.658	44.646	120.079	48.447
150.960	0.294	0.328	26.357	109.887	36.033	120.090	39.379
151.254	0.362	0.405	26.660	109.908	44.460	119.760	48.446
151.616	0.322	0.361	26.660	109.078	39.362	119.501	43.123
151.938	0.362	0.410	28.225	112.089	45.990	118.795	48.742
152.300	0.261	0.296	28.225	111.212	32.893	118.960	35.185
152.560	0.362	0.417	29.958	114.141	47.627	118.841	49.588
152.922	0.243	0.280	29.958	113.149	31.726	119.367	33.470
153.165	0.335	0.394	31.763	115.670	45.627	119.295	47.057
153.500	0.249	0.292	31.763	114.470	33.477	120.081	35.118
153.749	0.362	0.433	33.477	115.889	50.228	120.784	52.350
154.110	0.252	0.302	33.477	114.337	34.479	121.855	36.746
154.362	0.362	0.442	35.137	115.046	50.859	121.948	53.910
154.723	0.226	0.277	35.137	113.404	31.385	122.230	33.827
154.950	0.362	0.451	36.740	113.528	51.216	122.921	55.454
155.311	0.247	0.308	36.740	111.670	34.402	123.818	38.145
155.558	0.362	0.460	38.164	111.042	51.057	123.813	56.929
155.919	0.268	0.341	38.164	108.970	37.179	125.344	42.765
156.188	0.362	0.468	39.370	107.694	50.362	124.698	58.314
156.549	0.326	0.422	39.370	105.291	44.439	122.163	51.560
156.875	0.362	0.471	39.916	103.172	48.630	120.480	56.788
157.237	0.291	0.379	39.916	100.833	38.204	116.122	43.997
157.528	0.362	0.475	40.497	98.742	46.942	109.425	52.021
157.889	0.111	0.146	40.497	97.000	14.142	105.696	15.410
158.000	0.161	0.212	40.497	96.142	20.357	103.476	21.910
158.161	0.362	0.480	41.087	94.882	45.510	105.881	50.786
158.523	0.260	0.345	41.087	93.083	32.126	106.802	36.861

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 : 14/11/2021
Localita' :
Descrizione :
[n] = N. strato o lente



Modello di calcolo : Berselli (2016)

DATI 10 SUP. CON MINOR Fs

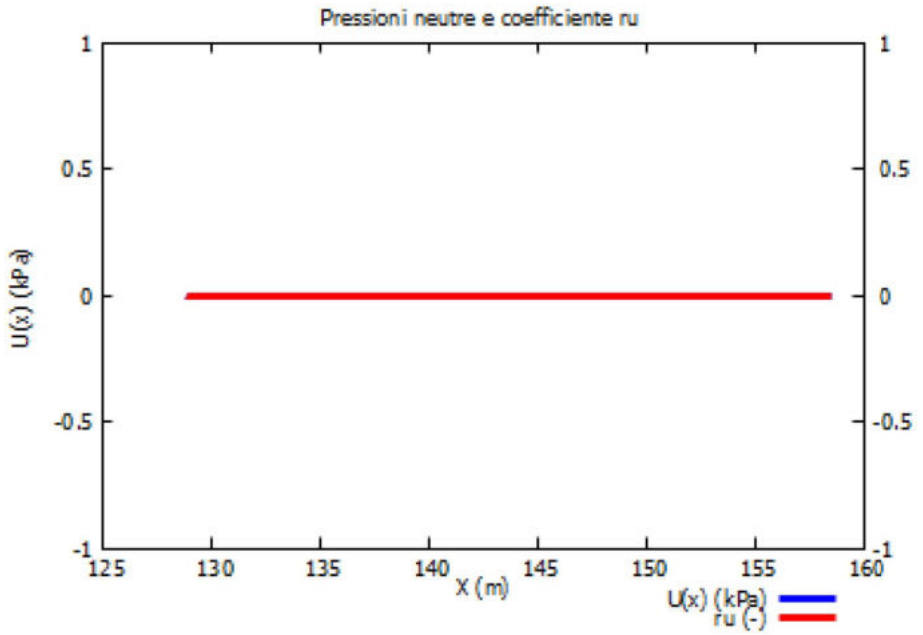
Fs minimo : 2.4459
Range Fs : 2.4459 2.5800
Differenza % Range Fs : 5.20
Coefficiente Sismico orizzontale - Kh: 0.0250
Coefficiente Sismico verticale - Kv: 0.0125

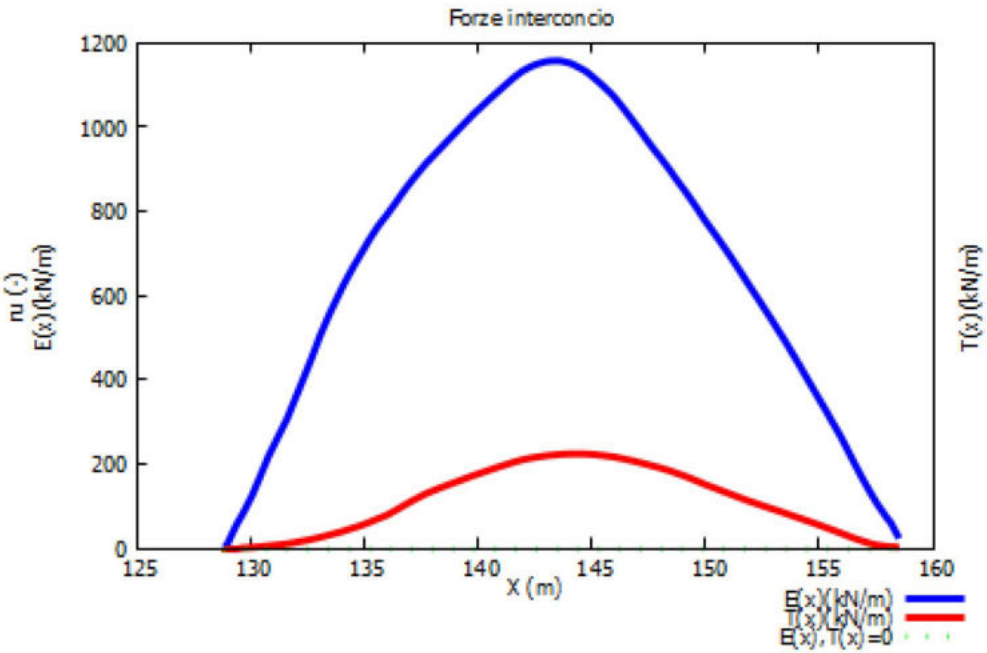
GENERAZIONE SUPERFICI RANDOM

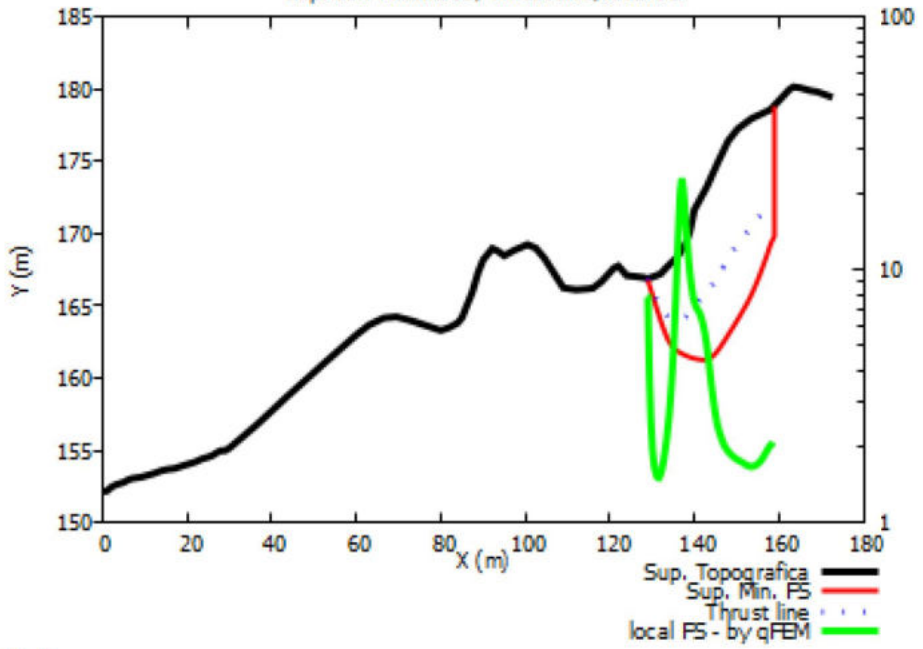
Campione Superfici - N.: 10000
Lunghezza media segmenti (m) : 6.9
Range X inizio generazione : 3.5 - 158.9
Range X termine generazione : 20.7 - 169.3
Livello Y minimo considerato : 150.0

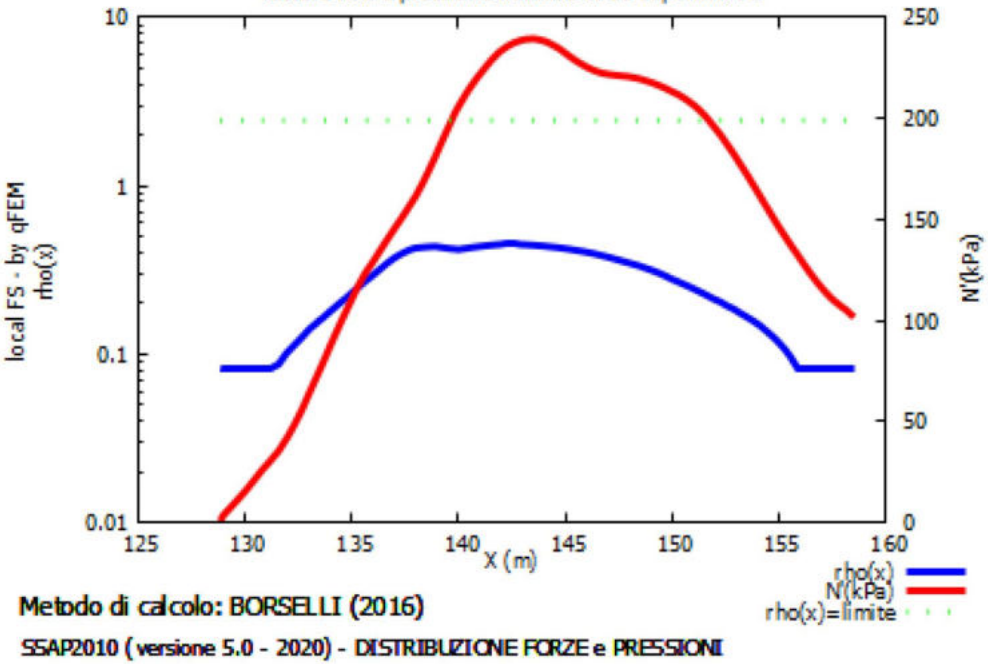
Parametri Geotecnici degli strati # ----------

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





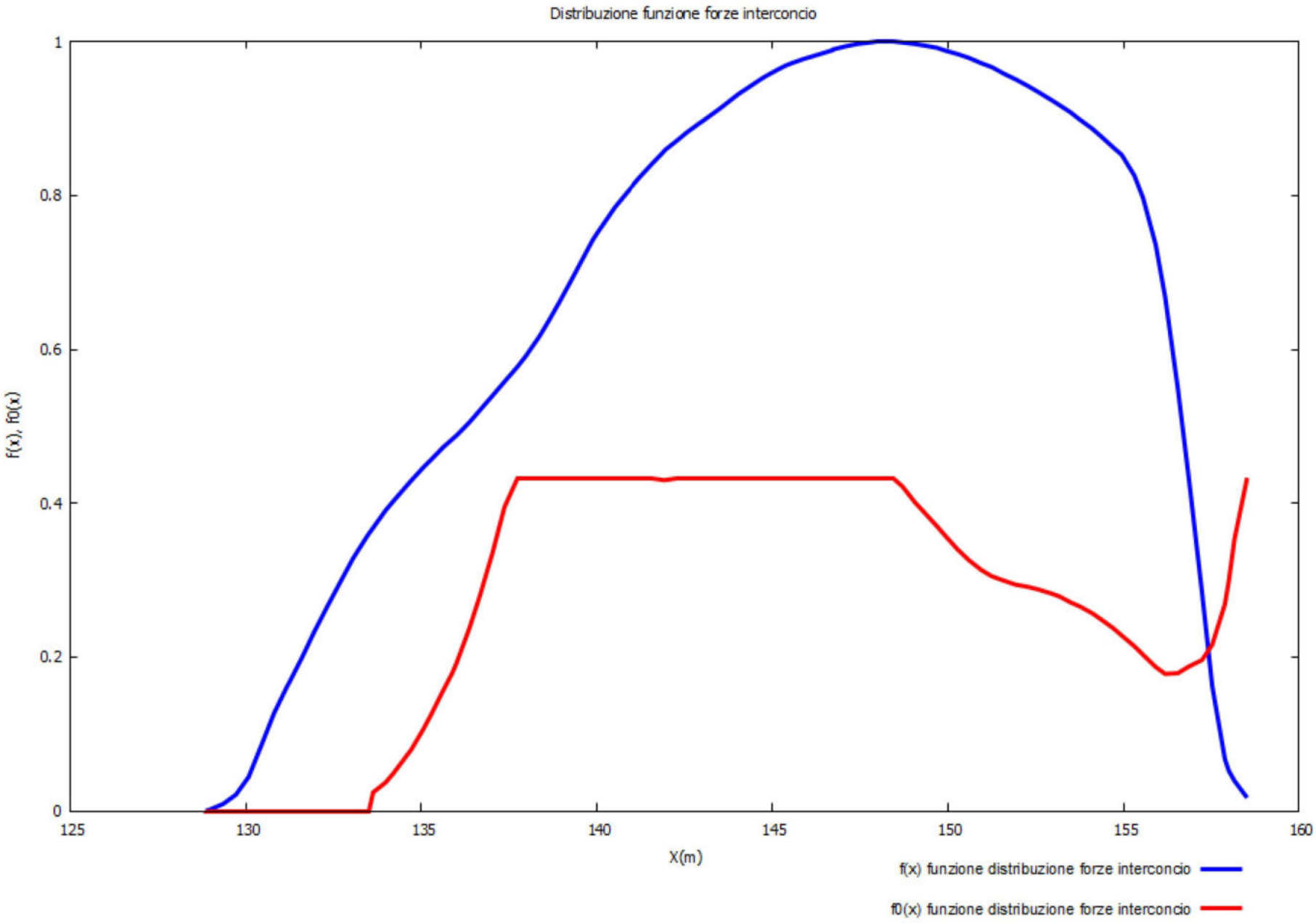


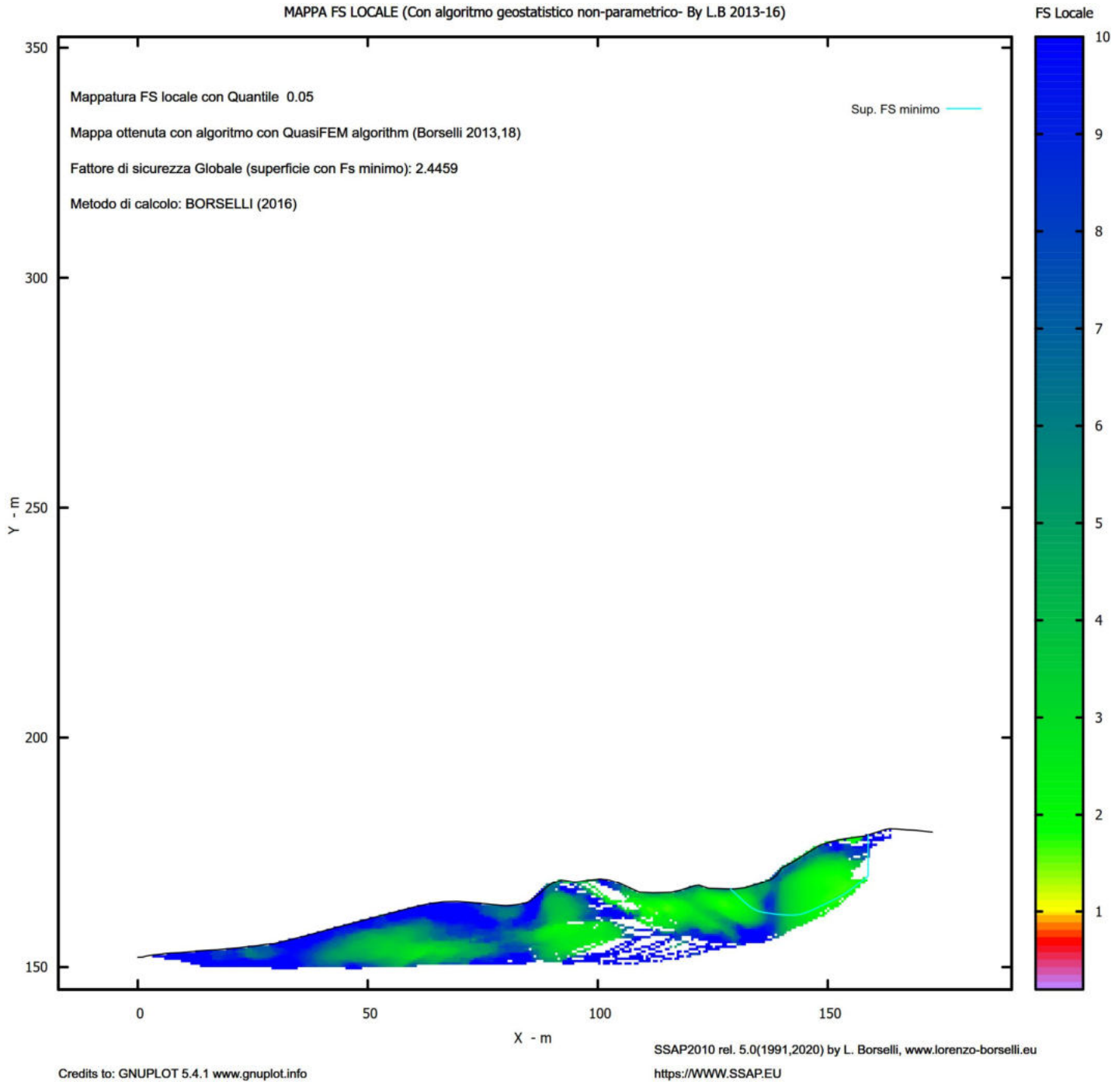


Metodo di calcolo: BORSELLI (2016)

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

14/11/21 12:43




MAPPA FS LOCALE (Con algoritmo geostatistico non-parametrico- By L.B 2013-16)
FS Locale
Mappatura FS locale con Quantile 0.05
Mappa ottenuta con algoritmo con QuasiFEM algorithm (Borselli 2013,18)
Fattore di sicurezza Globale (superficie con Fs minimo): 2.4459
Metodo di calcolo: BORSELLI (2016)
Sup. FS minimo
Y - m
X - m
350
300
250
200
150
0
50
100
150
10
9
8
7
6
5
4
3
2
1
Credits to: GNUPLOT 5.4.1 www.gnuplot.info
SSAP2010 rel. 5.0(1991,2020) by L. Borselli, www.lorenzo-borselli.eu
https://WWW.SSAP.EU