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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "The influence of the grain-size, mineralogical and geo-chemical composition on the Verdesca landslide" *by* V. Summa et al.

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REFEREE # 4

REPLIES TO THE OBSERVATIONS AND SUGGESTIONS FOR ALTERATIONS TO THE TEXT

1. Page 5048, line 19: there could be some relation between . . .constrained (instead of "links").

Reply: We accept the referee suggestion.

Changes to be made to the manuscript

Page 2 Lines 19 – 22 of the proof: "Several studies have indeed shown that there could be some relation between physical-mechanical properties of sediments and their granulometrical, chemical and mineralogical characteristics, as well as with the composition of circulating waters (e.g. Torrance, 1999; Sridharan, 2001)."

2. Page 5049, line 20: ...a continental clastic Quaternary sequence crops out; it is mainly represented....

Reply: We accept the referee suggestion.

Changes to be made to the manuscript

Page 3 Line 20 of the proof: "crops out" in place of "outcrops"

3. Page 5049, line 25: ...massive coarse deposits, such as matrix-to clast-supported gravels and conglomerates....

Reply: We accept the referee suggestion.

Changes to be made to the manuscript

Page 3 Line 25 of the proof: "such as" in place of "as"

4. Page 5050, line 5: the Authors should acknowledge here, after Critelli & Loiacono, 1988, the paper by Butler & Tavarnelli (2006, Sedimentology), and references therein, on the nature, lithology and architecture of the Gorgoglione Flysch deposits, that are the substratum to the Verdesca landslide, object of this contribution.

Reply: We accept the referee suggestion.

Changes to be made to the manuscript

Page 4 Line 5 of the proof: To be added the reference "Butler and Tavarnelli, 2006".

5. Page 5050 line 6: the Authors state that the study area is affected by extensional

faults of the Val d'Agri Fault System, and duly acknowledge the work by Cello and co-workers. However, the Authors should also acknowledge more recent contributions on this topic, speciïňĄcally those by Bucci et al. (2012, Journal of Maps), and by Bucci et al. (2014, Journal of the Geological Society of London), that have outlined many analogies but also several differences with the evidence described by Cello co-workers.

Reply: We accept the referee suggestion.

Changes to be made to the manuscript

Page 4 Line 7 of the proof: To be added the references "Bucci et al., 2012, 2014".

6. Page 5052, line 21: silty-clayey sediments, at a width of about 50 cm. The sub-sentence in red is not clear to me. Does it mean "with a width of about 50 cm"? The Authors should clarify this and correct the sub-sentence accordingly.

Reply: We accept the referee suggestion.

Changes to be made to the manuscript

Page 6 Lines 19-21 of the proof: "The break of the inclinometer tube in the S1 borehole at a depth of 14.3 m allowed the identification of an active slip zone at that depth, corresponding to the transition from coarser sandy-silty to finer silty-clayey sediments. This transition has a thickness of about 50 cm."

7. Page 5053, line 16: ...observations of the geognostic cores, that show evidence of saline and oxide precipitates.

Reply: We accept the referee suggestion.

Changes to be made to the manuscript

Page 7 Line 16 of the proof: "that show" in place of "which shows"

REPLIES TO THE SUGGESTIONS FOR ALTERATIONS TO THE FIGURE CAPTIONS

1. Page 5064, Fig. 1: The inset shows the location of the study area with a red dot. Its

present position in the Figure inset, located south of the Gargano peninsula in Apulia, is not correct. The correct position of the study area in the inset of Fig. 1 must be corrected, and must fall in the central part of the Basilicata region.

Reply: We modified figure 1 with the correct position of the red dot showing the position of the study area.

Changes to be made to the manuscript

To be replaced the figure 1 with the new figure in the attached file (f01.jpg).

References that must be added

Bucci, F., Novellino, R., Guglielmi, P., Prosser, G., and Tavarnelli, E.: Geological map of the northeastern sector of the high Agri Valley, Southern Apennines (Basilicata, Italy), Journal of Maps, 8, 3, 282-292, 2012.

Bucci, F., Novellino, R., Tavarnelli, E., Prosser, G., Guzzetti, F., Cardinali, M., Gueguen, E., Guglielmi, P., and Adurno, I.: Frontal collapse during thrust propagation in mountain belts: a case study in the Lucania Apennines, Southern Italy, J. Geol. Soc. London, 171, 4, 571-581, 2014.

Butler, R.W.H. and Tavarnelli, E.: The structure and kinematics of substrate entrainment into high concentration sandy turbidites: a field example from the Gorgoglione "flysch" of southern Italy, Sedimentology, 53, 655-670, 2006.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 5047, 2014.

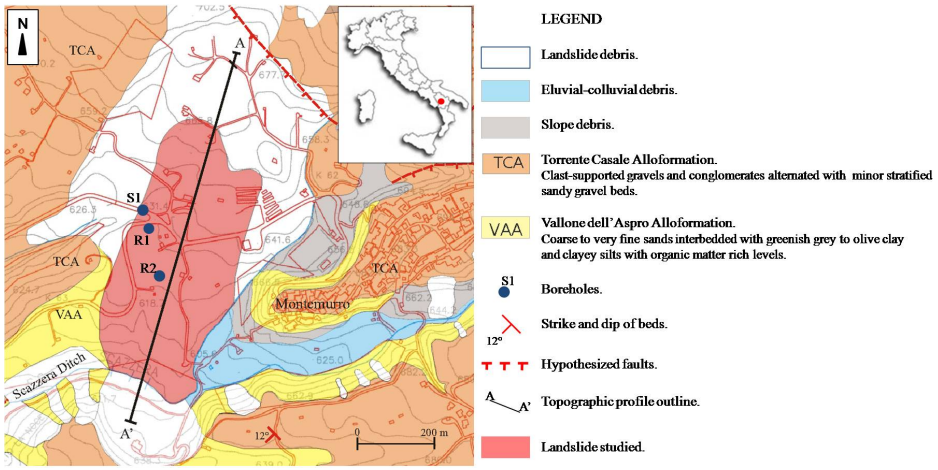
N
TCA
A
A'
S1
R1
R2
TCA
VAA
TCA
Montemurro
Scazzera Ditch
12°
0
200 m
LEGEND
Landslide debris.
Eluvial-colluvial debris.
Slope debris.
TCA
Torrente Casale Alloformation.
Clast-supported gravels and conglomerates alternated with minor stratified sandy gravel beds.
VAA
Vallone dell'Aspro Alloformation.
Coarse to very fine sands interbedded with greenish grey to olive clay and clayey silts with organic matter rich levels.
S1
Boreholes.
12°
Strike and dip of beds.
Hypothesized faults.
A
A'
Topographic profile outline.
Landslide studied.

Fig. 1.