

## ***Interactive comment on “Electrical Resistivity Tomography surveys for the geoelectric characterization of the Montaguto landslide (southern Italy)” by Jessica Bellanova et al.***

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Reviewer #1:

The authors greatly thank the Anonymous reviewer for his comment. Replies to the questions from the reviewer are as follows:

1) Pag.3 line 49. I think that translation of Puglia Region in "Apulia" Region is not completely correct when, in the same phrase, Campania is written in Italian language. Answer: Thanks for the suggestion. We changed "Apulia" with "Puglia".

2) Pag.3 Line52/53 I think that for a completely explanation of the studies in the Montaguto Earthflow, is necessary to insert a citation of the complex monitoring activities

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according with (Giordan et Al. 2013, Lollino et Al. 2014) Answer: Thanks for the suggestion. We added the suggested citation.

3) Pag.3 Line59/60 According with the plane of the ERT surveys (fig.2), I think that is more correct: "...was focused on the upper portion of the landslide channel area" because the upper part of the landslide body (from about 750 to 900 m asl) was not covered by ERT surveys Answer: Thanks for the kind advice. We replaced "upper part of the landslide body" with "upper portion of the landslide channel area".

4) Figure 3 On the ERT 3 picture, we observe the S4 borehole but in the legend is not present. The Piezo 1 (P1) is instead present. Answer: Thanks for the kind advice. We added the S4 borehole in the legend.

5) Figure 4 I think that 6 ERT sections in one A4 page are too many. I think that the correct number can be 3 or 4 (as in Figure 3). Answer: Thanks for the suggestion. We changed Figure 4, showing the 11 ERT sections in three different figures.

6) Figure 3 and 4 To increase the comprehension of the drainage channel effects, the pictures are too small. My suggestion: create a zoomed box centered on the drainage channel. The S4,S6,S7 piezometer explain the water table or pore water pressure? The difference between W.T. and P.W.P. is very important on this type of terrains Answer: Thanks for the kind advice. Having changed Figure 4, now the pictures are greater and clearer. S4, S6 and S7 (as well as S8) are boreholes where the water table level was measured. P1 and P2 are piezometers and, as shown by Lollino et al., 2014, the water pressure was measured (see figures and tables in Lollino et al., 2014). We corrected the legend of both Figures (3 and 4). Moreover, the text in the Results section was modified accordingly.

7) Pag.9 - Conclusions - Line 251/252 Regarding the effectiveness of the drainage system, I'm not completely sure that with this surveys is possible to make this important and critical information. I think that the your data explain the first effects of the drainage systems but just with many multi-temporal surveys is possible to explain

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the effectiveness of the complex drainage systems installed in this terrain. Therefore, my suggestion to modify the phrase. Answer: Thanks for highlighting this subtle but important difference: the sentence was changed according to the reviewer suggestion as following: "From a geophysical point of view, considering that the material included between the drainage channels is characterized by moderate resistivity values ( $6 < \rho < 12 \text{ } \Omega\text{m}$ ) respect to the more conductive surrounding material, it is possible to hypothesize that the complex drainage system installed on the slope is effective in continuously draining and drying the subsoil. In any case, only a multi-temporal survey (e.g. by using time-lapse ERT and in situ pore pressure measurements) could verify the effectiveness of this intervention."

Please also note the supplement to this comment:

<http://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2016-28/nhess-2016-28-AC1-supplement.pdf>

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., doi:10.5194/nhess-2016-28, 2016.