

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

Anonymous Referee #2

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1. Lines 46-47: the sentence seems relatively questionable, since it is quite unrealistic that the slope failure started in the mid spring of 2006. Based on the historical data, the lower portion of the earth-flow mass obstructed the SS90 National Road on April 2006 and this means that the earthflow was activated some months before, with a run-out of several hundred of meters. In 2010 there was a strong reactivation of the landslide mass already accumulated at the toe of the slope in the previous years.

2. Line 97: a maximum value of earth-flow width equal to 420 m seems too high. Probably, the authors refer also to a portion of the landslide mass that invaded the valley located at the right-hand side of the proper valley occupied by the landslide mass, but that portion should not be considered as a real part of the main earth-flow

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body. Therefore, a more precise value of the landslide width should be about 150-200 m.

3. Throughout the manuscript the authors distinguish between the active landslide material and the underlying inactive one, only based on the ERT data interpretation. This seems too strong, since there is not a clear instrumental evidence of what is the active part of the landslide. Moreover, for this type of landslides it is quite frequent that recently-activated landslide surges travelling above pre-existing landslide masses that rest along the landslide channel are capable of reactivating the latter. Probably, a more rigorous classification should be between “recent” and “old” landslide mass, or something similar.

4. Lines 166-168: related to the previous point, the difference between the ranges of electrical resistivity values corresponding to the active landslide material and those of the inactive and old earth-flow seems to be practically negligible. The authors need to provide a more detailed explanation on this point.

5. Line 204: “underlying” should be replaced by “overlying”; the active earth-flow is above the old landslide body.

Some conclusions proposed by the authors are questionable, as for example:

6. Lines 277-279: the efficiency of a drainage intervention cannot be measured by means of the water content measurements and, therefore, by the resistivity values observed between different areas of the landslide material. A drainage intervention works fine only if it is capable of reducing the pore water pressures (or piezometric heads) within the landslide mass, which need to be measured effectively to this purpose.

7. Lines 281-284: what does the sentence “the lithotypes outcropping on the slope, mainly sands and clays, represent the predisposing factor for landsliding” exactly mean? Also, what does the sentence “the increase of water content in the subsoil, due to the occurrence of intense rainfall events, can be considered the triggering fac-

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tor” mean? Both the previous sentences are too generic and need to be clarified in a more rigorous way.

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