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Interactive comment on “Fracture network characterisation of a landslide by electrical resistivity tomography” by S. Szalai et al.

Anonymous Referee #1

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The Authors present the results of a ERT survey carried out in an area which is part of the Baranya Hills (Hungary). The target of the ERT survey is to try to image the crack system of a loess landslide. The idea is interesting and innovative although several issue prevents the publication of the article in its present form. The main points to be addressed are: 1) The language of the article has to be greatly improved. More efforts should be made to make the text more fluent and easy to understand. 2) The figure caption of all the figures has to be improved. In fig 4 there are no yellow solid and dotted lines. In fig 9 I can see blue and red dotted line; which is the difference between them? 3) The authors carried out ERT measurements by using different geoelectrical configurations: Schlumberger, Dipole-Dipole, Pole-Dipole and Stummer configuration. Contrary to the first three configurations, daily used in ERT investigations, the Stummer

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configuration is, as also the Authors say, not known yet. It is hence necessary to describe it in a more detailed way in the “Method section”. 4) From figure 5, it is possible to see that the Stummer configuration can provide much less information than the other configuration in a depth range which goes from 1.4 till 2.8 meters. Considering these depth are crucial in understanding the fracture distribution, the Authors should justify why they have chosen to use this configuration. 5) The results are presented in a random way: profile 2 (justified because it is the most fractured area), profile 1, profile 4 and profile 3. 6) The interpretation of the 2d sections in terms of crack presence is questionable. I do not understand at all, for example, in which way fractures have been identified in figs. 9 and 10- Stummer sections. Why the vertical resistivity contrast at 15.5 and 18.5 meters are not marked as cracks? Maybe the quality of the image is poor. 7) Figure 11. Schlumberger section is showed after one iteration with a really compress colour scale (only 6 Ohm of maximum variation); Stummer section is presented with a colour scale which is different from the one used for the P-dp and for the dp-dp. 8) In most of the analysed cases, Schlumberger, Dp-DP and P-dp give comparable results while the Stummer section is almost always different. Nevertheless the Authors states “the Stummer array seems to be a very good tool for completing e.g. P-Dp measurements...”. A such strong statement need to be justified otherwise one can argue that the Stummer configuration is just not reliable as the other methods (whose application leads to similar results) are.

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