Nat. Hazards Earth Syst. Sci. Discuss., 1, C1931–C1932, 2013
www.nat-hazards-earth-syst-sci-discuss.net/1/C1931/2013/

Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Electrical resistivity tomography for studying liquefaction induced by the May 2012 Emilia-Romagna earthquake ($M_w = 6.1$, North Italy)" *by* A. Giocoli et al.

Anonymous Referee #3

Received and published: 2 December 2013

The liquefied sands are those at the bottom of FCU (MFGS).

The values of electrical resistivity show extensive overlap between the 3 units FCU, MU and PAPU). ERT does not allow to recognize the liquefiable sands (MFGS) inside the FCU.

This conclusion is the same of the Authors(Chapter 4 "Conclusions", pages 8, lines 23-25): "The ERT do not clearly reveal the potentially liquefiable level (MFGS) at the bottom of the FCU because the resistivity values of this thin layer (thickness< 6.5m in the 25 boreholes, see Fig. 2) are similar to those of the MU."

But this sentence is in contrast with the following sentence (Chapter 4 "Conclusions", pages 9, lines 4-6): "... the ERT has proved to be an effective reconnaissance technique for characterizing the subsoil affected by coseismic liquefaction, providing valuable data for understanding the liquefaction phenomenon and assessing the associated hazard."

This last sentence is not supported by the presented data. The sands at the bottom of FCU are recognizable only by continuous core drilling and CPTU; in the presented case history, ERT is useful for correlating data from drilling, not to recognize litotypes inside of the stratigraphic units.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 1, 5545, 2013.