

Interactive comment on “New developments in ambient noise analysis to characterise the seismic response of landslide prone slopes” by V. Del Gaudio et al.

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We revised the manuscript following the referee observations. In particular:

- 1) Additional discussion was reported about the implication of site response directivity on modifying hazard assessment (see lines 495-501 in the revised manuscript).
- 2) The first part of the paper was simplified removing technical details unessential for the comprehension of study outcomes.
- 3) Within section 2, the description of the study area setting was reported in a distinct subsection (2.1).

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4) The question of the possible connection between H/V ratio temporal variability and soil water content was additionally discussed both in theoretical terms, with the support of literature references (see lines 322-337), and with regard to the specific case study, with reference to local hydrological conditions (338-349). The general idea is that variations of water content in a surficial unconsolidated layer can cause variation of H/V ratio in that they cause a change of P-wave velocity contrast between surface layer and substratum (modifying vertical component amplification) and a change of Poisson's ratio (modifying Rayleigh wave ellipticity).

Overall, we corrected and integrated the manuscript following all the editing indications. However, with reference to the question of the relevance of the colluvium thickness for data discussion, our opinion is that it has to be considered because the possibility of significant ground water level variations thickness depends on the presence of a layer sufficiently thick to host significant aquifer. Furthermore, with regard to figures showing 3D histograms, the readability difficulties can be related to the poor resolution of figure conversion into the electronic copy of manuscript used for the review procedure, but the original figures are in a vectorial form (Postscript) whose resolution depends only from the printing characteristics.

Please also note the supplement to this comment:

<http://www.nat-hazards-earth-syst-sci-discuss.net/1/C364/2013/nhessd-1-C364-2013-supplement.pdf>

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