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Natural Hazards and Earth System Sciences
Discussions

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

Anonymous Referee #1

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In their paper, the authors describe ambient noise analyses of landslide prone slopes in an area in Italy. They find that some sites show pronounced directivity in seismic response (consistent with resonance directions) which is not detectable in others. The authors conclude that careful investigations have to be undertaken to characterize site directional properties.

The paper is well structured and readable, and both materials and methods presented are of interest for an international readership. My only concerns are with respect to the descriptions of the study sites: Although it seems to be a well-studied area, too few information on geological, topographical, structural and slope stability/landslide charac-

teristics of the measurement sites is provided in this paper. I would highly recommend the authors to provide more information. At least, more detailed map information showing ground and surface conditions (also regarding landslides /slope stability), possibly accompanied by cross-section data, should be supplied. In this context, it would be highly welcomed if the authors may also provide simple kinematical slope analyses and show the structural slope configurations with directional information on discontinuities. Although I would agree this may go beyond the scope of the article, I may suspect that analysis of internal slope geometries would be highly important for site-specific analysis of the measurements presented.

Some detailed comments:

P1321, L2: "subsoil characteristics": please specify

P1321, L6: "3-D shape of geological features": Which are meant? Directional properties/conditions of discontinuities?

P1323, L12: "Microseismic signal" consistently in parentheses, remove the comma. P1324, L8: "analysis cannot be extended below .3 Hz": Justify.

P1325-1327: Here, the site characteristics are described. The descriptions of geological features, landslide characteristics etc. mentioned in the text are not supported by Figure 1. I think some more information on the geological/structural/kinematical slope characteristics has to be provided (see general comments).

Figure 1: This is not very helpful. Please plot: General geological/geomorphological map with detailed maps/cross-sections of the slope sections studied.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 1, 1319, 2013.