Nat. Hazards Earth Syst. Sci. Discuss.,
https://doi.org/10.5194/nhess-2018-148-RC2, 2018

Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Estimation of path attenuation and site characteristics in the north-west Himalaya and its adjoining area using generalized inversion method" *by* Harinarayan Nelliparambil Hareeshkumar and Abhishek Kumar

Anonymous Referee #2

Received and published: 1 October 2018

The manuscript "Estimation of path attenuation and site characteristics in the north-west Himalaya and its adjoining area using generalized inversion method" by Hareeshkumar and Kumar is a study concerning the estimate of attenuation and seismic site response considering three components accelerogram recordings. The topic is interesting since the studied area is considered one of the most hazardous in the world for seismicity. However, major revisions are necessary before the publication of the submitted material. In particular, what is new compared to other studies on the same topic? I think that more effort should be done in description of results. Some

comments: The manuscript contains several type mistakes and some sentences are unclear. Therefore, during the revision phase, the authors should pay attention to correct these grammatical errors.

What is the meaning of PESMOS acronym?

In the introduction the authors refer to several geographic places, but no map is shown in the text to help an international reader. Moreover, the authors underline the high level of seismic hazard of the region, but no tectonic setting is described in the text. Probably, an overview of the geologic setting of the area could help the reader.

As concern the recordings, did the authors used some criteria to check the quality of the traces (e.g. signal-to-noise)?

In the Methodology section, there is a considerable amount of extraneous material regarding the theory of the adopted procedures to process the data. These sentences are not central to the results of the paper. Therefore, Some formulae and matrix could be deleted or moved in an appendix.

As concerning Figure 3 more details should be given about the "kink". This result seems to be interesting. Is at the same frequency observed by other authors? What is the Moho depth? Etc... Try to better explain.

In site response analysis the authors describe classical HVSR based on Fourier spectra, but starting from line 280 they introduced the ratio of response spectra. In this case it is important to describe the differences. H/V in Fourier domain are different from H/V in response spectra.

Figure 7 and 8 should be arranged in a different way.

The authors should explain why 6.75 Hz is used to discriminate soil and rock sites. In the paper D'Alessandro et al. (2012) there is a classification of the H/V as a function of peak.

The method adopted to relate the frequency and depth with Vs,30 is less clear and speculative. For a frequency the bedrock could be at different depth as a function of thickness and velocity.

Geographic distribution of amplitudes and frequencies of the spectral ratios are not scientifically relevant considering the dimensions of the studied area. Probably distribution charts of frequencies and amplitudes observed at the investigated stations could be more interesting to subdivide these.

Check the reference list, is incomplete (e.g. Alessandro et al. 2012, is D'Alessandro et al. 2012?).

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