

Interactive comment on “On the behavior of site effects in Central Mexico (the Mexican Volcanic Belt – MVB), based on records of shallow earthquakes that occurred in the zone between 1998 and 2011” by A. Clemente-Chavez et al.

Anonymous Referee #2

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The paper describes new results for seismic amplification in a previously little studied area. Before being acceptable for publication, the paper should be revised and implemented answering to the following questions:

1) Are the authors aware that HVSR and other estimates of site amplification could have significantly different amplitudes at frequency higher than the fundamental even when earthquakes are used? (see e.g., for theoretical explanation, Parolai and Richwalski, 2004, The Importance of Converted Waves in Comparing H/V and RSM Site

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Response Estimates, Bulletin of the Seismological Society of America, v. 94, p. 304-313; or, for a recent experimental evidence, Bergamaschi et al., 2011, Evaluation of site effects in the Aterno river valley from aftershocks of the 2009 L'Aquila earthquake; Bull Earthquake Eng, 9:697–715)

2) Which is the need to convert the velocity data in acceleration and not accelerometric data into velocimetric?

3) More details should be given about instrumentation at each station. Was instrument response corrected using factory data or single instruments' calibration sheets? This is important also for HVSR because vertical and horizontal response with frequency might be different. Moreover, For frequencies below 1-0.5 Hz accelerometers do not have a flat response if the motion is weak.

4) Why the authors decided not to use the GIT approach for absolute amplification?

5) Fig. 7 shows predominant amplitude and length due to surface waves. Tab. 4 shows a decrease of F_0 in this study with respect to previous ones. Could it be due to different window selection in recordings? Selecting the whole recording or the S-wave window alone could lead to different results (see e.g., Castro et al., 1997, S-wave site-response estimates using horizontal-to-vertical spectral ratios; Bulletin of the Seismological Society of America, v. 87, p. 256-260)

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