

The final author comments

The authors would like to thank the referee sincerely. There are really some places in the manuscript not clear enough and are pointed by the referee, so we believe the final manuscript must be much better from the valuable comments.

(1) Add some references on GMPE and NGA project

Yes, the following two references are added.

Bozorgnia Y., Abrahamson N.A., Campbell K.W., Rowshandel B., Shantz T. NGA-West2: A Comprehensive Research Program to Update Ground Motion Prediction Equations for Shallow Crustal Earthquakes in Active Tectonic Regions. Proc. of 15WCEE. 2012

Power M, Chiou B, Abrahamson N, et al. 2008. An overview of the NGA project. Earthq Spectra, 24: 3-21

(2) In the 2.1 and 2.2 paragraphs I think it's necessary to give some details about sensors and ADCs both of accelerometer and seismic networks; also move the information from "Data and resource" in the "Database" paragraph (n. 2).

Yes, all information originally in "Data and resource" are moved to the "Database". And the authors think detailed information about sensors and ADCs are not necessary to be listed in the paper, since they could be found at the network web sites easily, and space here is limited.

(3) There is the presence of amplification factor $A(f)$ in the eq. 1 (pag. 5301). In the paper there isn't trace on how the authors use this parameter. I suggest an accurate reading of geological map of the regions to put realistic values; else, if there are, to search paper on experimental valuations of site responses in those areas.

I advise the authors to read this my paper:

De Luca G. et al. (2005). Evidence of low frequency amplification in the city of L'Aquila, Central Italy, through a multidisciplinary approach including strong - and weak - motion data, ambient noise, and numerical modeling. Bulletin of the Seismological Society of America 95, 1469 - 1481.

And also the unbelievable amplification factor at Mexico City during a Mw 8.0 Guerrero - Michoacan earthquake (September, 19th 1985) far away about 350 km.

These are only some examples to think over the realistic valuations of $A(f)$ parameter to put in the model.

$A(f)$ is the near surface amplification factor and could be estimated by a transfer function of regional crust velocity gradient. The $A(f)$ given by Boore and Joyner (1997) for generic rock site ($\bar{V}_{30}=620\text{m/s}$) is used since the prediction in this paper is for rock site, and keep the same in both inversion and prediction. It is mentioned in the final version.

Now, we are working on A(f) for this region from inversion of microtremor observed at a set of arrays, the shear wave velocity structure could be explored to a depth of several thousand meters. The result will be published later.

(4) Put in the references the web sites cited in the text.

Yes, the web sites are added into references of the final version.

(5) Put or highlighter in the figures the Maoxian and Pixian station with their abbreviations.

OK, the stations are put in the figure in the final version.

(6) Since the Yunnan region is neighbourings at south of Sichuan I suggest to prepare only one figure instead of four (1a, 1b, 2a and 2b). For example the symbols of stations can be a triangles and the earthquakes can be circles with different colours. Remember to highlighter the Maoxian and Pixian station and be careful with ratio latitude/longitude because the fig. 1b is different from fig. 2b.

Yes, we merged the two figures into one, and add the two ground motion stations, the epicenter of Wenchuan earthquake.

(7) The figures 3a, 3b, 4a, 4b, 5a, 5b, 6a and 6b are not necessary. It's possible to explain in the text the distributions and the ranges of values.

The authors think these figures are helpful, since one of the referees found something wrong from the figures.

(8) I have some difficult to read the scales and labels of all figures; the fonts are too much little.

Yes, the scales and labels of all figures are improved in the final version.

(9) Please to enrich the text of Fig. 9 and put clear labels in the figures

Yes, figure 9 is improved in the final version.

(10) Where is the Wenchuan earthquake in the map ? Magnitude ? Are there references ?

The epicenter of Wenchuan earthquake is added. The shock with magnitude 8 is the worst disaster in China. There are a lot references, e. g. a special issue of BSSA, Volume 100, Issue 5B, 2010.

(11) In the Fig. 11 it's necessary to widen the time scale, the signals are too much compressed.

The authors think the Figure 11 is OK, since the space is limited. It is at present to examine the envelope of time history is much more important than to see the details.

(12) Please to enrich the “Conclusions” paragraph. It’s insufficient.

Yes, the conclusion is revised in the final version.

(13) I noted from fig. 1a that the seismic network is concentrated in the middle part of region BUT several earthquakes are localized out of the network (fig. 2a) until 400 km of distance. The principal consequences are bad solutions during the localization above all in depth. In fact from fig. 3a and 3b it is possible to note the presence of earthquakes with moderate magnitude ($3.5 < M_w < 4.3$) with depth $<$ of 5 km. I suggest to do a selection of data taking for example all events with gap parameter $<$ of 180° and also with rms (s) $<$ 0.1 – 0.2 s.

Actually, for small earthquake records, we just use hypocentral distance less than 300km, as shown in Figure 4 and mentioned in section 2.1. And, we choose the records with signal-to-noise ratio larger than 3.