

**Point-by-point responses to the reviewer's comments on the
manuscript MS No.: nhess-2020-48**

**Macrozonation of Seismic Transient and permanent Ground
Displacement of Iran**

The authors would like to thank the editor and the respected reviewers for their precious time and invaluable comments. We have carefully addressed all the comments. The corresponding changes and refinements made in the revised paper are summarized in our response below.

In their revised manuscript, Farahani et al., have satisfactorily addressed most of the questions and comments that I previously posed for their original submission. I recommend that the article be published. However, below, I list a number of important points that remain and need to be addressed. I hope that the authors find them useful and that they can incorporate these recommendations into their final manuscript.

1) Line 103. The geological map shows the rock units and therefore it can be compared to a rough validation (see also comment in "line 94") with the soil map, at least in determining soft and hard rocks. In my experience, using only the method of Allen and Wald (2009) which is an excellent method in case there is no other alternative information, without even rough validation may leads to some errors. If the authors prefer not to address this issue, at least they can add a comment/or note on this topic in the Ms.

Answer: Thanks for your invaluable comment. It is important to note that such a validation study was performed by P. Shahvar (2013) in order to evaluate the merit of the Allen and Wald (2009) for the geological situation of Iran. The mentioned study, which was performed as a Ph.D. dissertation, is cited in the references and also manuscript.

2) Line 140: It will greatly help the reader if the authors put some of the explanations mentioned in their answers into the text (especially for kw and km factors).

Answer: The mentioned explanations are added to the manuscript.

3) Line 204. I do not see a reference to the table in the appendix showing the moment magnitudes in the Ms.

Answer: The mentioned reference is added.

4) Lines 214-246. In order to make the paper more relevant to readers outside Iran, you can for example mention whether the development of Macrozonation maps of Seismic Transient Ground Displacement and Permanent Ground Deformation of regional area was done elsewhere in the world by other methods. If this process is completely new, it is highly advisable to mention it.

Answer: As previously mentioned in the introduction section, it is rare to find a comprehensive study to present macrozonation of seismic ground deformation of a country around the world. The majority of the previous studies were carried out for specific small regions in the countries. Hence, the significance of the current study is highlighted in the introduction comprehensively.

5) The word "as" is used too often throughout the Ms.

Answer: Some corrections are made to address this correct point.