

Interactive comment on “A hybrid model for mapping simplified seismic response via a GIS-metamodel approach” by G. Grelle et al.

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Referee #1 –AUTHORS: Many thanks to Prof. Ganapathy for the accurate revision, we hope to have encountered his suggestions and corrections.

–REFEREE: The authors are trying to bring out a seismic microzonation mapping in a GIS model using thematic layers which contribute to seismic site attenuation. The manuscript is well written The authors are instructed to incorporate the following corrections. 1. Check the references thoroughly in the text. Some of the references which is mentioned in the text are missing in the reference part: Page 3, Line 5, FEMA 356 missing in the reference Page 3, Line 14, Grelle and Gudagno 2012 in text , in reference its given 2013, which is correct?

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–AUTHORS: We have reported it in the references and corrected it in the text.

–REFEREE: Page No.3, Line 21, mukhopadhyaya and Bormann 2004 - Check the Spelling with reference

–AUTHORS: We have corrected it in the text.

–REFEREE: Page No.5, Line 2, Edu Pro Civil System, 1999, Missing in the Reference

–AUTHORS: We have reported it in the reference

–REFEREE: Page No. 5, Line 10, HelGeoRDaS - Missing in the Reference

–AUTHORS: "HelGeoRDaS " is not a reference, now it is reported without the brackets.

–REFEREE: Page No. 5, Line 13, van Rossum and Drake, 2001 or 2005? Check with reference

–AUTHORS: We have reported it as 2005

–REFEREE: Page No. 13, Line 22, NTC, 2008 – Missing in the Reference

–AUTHORS: We have reported it in the reference

–REFEREE: Page No. 13, Line 23, Galatini,et.al, 2000 – Check with the reference.

–AUTHORS: We have correct it in the text.

–REFEREE: Page No.16, Line 10, Iwan (1967) – Check the year

–AUTHORS: We have correct it in the text.

–REFEREE: Page No.16, Line 23, Check the year of the references

–AUTHORS: We have reported it in the reference.

–REFEREE: Page No. 21 Line 16, Hutchinson , 1996 missing in the text part

–AUTHORS: We have correct it in the text.

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–REFEREE: - In the abstract it has mentioned that the model was applied and tested, however there is no comparison for the validation of the output in the results.

–AUTHORS: The validation is a topic discussed in the paragraph Validation and Discussion; the results of this are also reported in the conclusion of this form: "Moreover, the back-efficacy test was performed in zones where experimental profiles of 4 down-holes were present. Depending on the case, test results highlighted a high-to-good fit between the values of the spectral response of the hybrid model and those calculated from the physically based numerical model."

–REFEREE: Page No. 3 Line 8 and 9, correct grammar and spelling.

–AUTHORS: Grammar and spelling are corrected as following: "In addition to a need to have a sufficient amount of information suitable for the seismic microzonation approached, computerized data management and spatial distribution in terms of input and output/outcome is also a requirement."

–REFEREE: Page 5, Line 13 it has mentioned Python 2.7 code is used, however it had not mentioned how it influenced in the present study.

–AUTHORS: We have integrated the text: "The hybrid model architecture is characterized by clusters of procedures and sub-models (figure 1) where data flow and informations are driven in a semi-automated way using a tool-code written in Python 2.7 (van Rossum and Drake 2005) allowing a fast calculation mainly for regression iterations (Montecarlo technique) and calibration processes."

–REFEREE: - Page 7, Line 3, Lithology map used for the present study, however there is no source given for this map and also the lithological units can be written in the map itself in detail. - Page No.3, Line 23. Since it's discussed about the earthquake proneness of the study area, a separate seismicity map of the area or the seismicity can be super imposed over the lithology can be present. - Page No.29 Fig.4, The coordinate of the study area should given in degree minutes and seconds, The location

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of the study area is missing.

–AUTHORS: Substantial modifications performed in figure 4 aim to take into account the aforementioned suggestions: we have introduced a new map about the historical seismicity and tectonic structures of the study area. We have reported the description of lithology units in the legend and we have reported the coordinates in degrees, minutes and seconds.

Please also note the supplement to this comment:

<http://www.nat-hazards-earth-syst-sci-discuss.net/2/C443/2014/nhessd-2-C443-2014-supplement.pdf>

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 963, 2014.

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