

Nat. Hazards Earth Syst. Sci. Discuss., referee comment RC1
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Comment on nhess-2021-282

Anonymous Referee #1

Referee comment on "Ground motion prediction maps using seismic microzonation data and machine learning" by Federico Mori et al., Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2021-282-RC1>, 2021

The manuscript utilizes machine learning in ground motion prediction and compares ML-based techniques with GMM and ShakeMap. The former has been shown to have better performance than the latter two. I am not surprised by the results, as has been demonstrated by many that ML techniques are advantages over parametric GMMs. ShakeMap is basically also based on GMMs which rely on an input grid-based VS30 map.

General comments:

What is the logic behind the selection of site proxies? For instance, why do you utilize elevation? Is there any physical reasoning? Is it necessary to use elevation, slope (hx and hy) and curvature (hxx and hyy) simultaneously? Could you provide a plot or some discussions on the performance of each site proxy in the best performing model (GPR)? I recommend the authors expend a bit on the performance of these site proxies?

Specific comments:

Line 74-95: these paragraphs have many details. I suggest they better be moved to other sections, rather than in the introduction. The introduction shall serve to intrigue the readers to read the paper, but these paragraphs are too detailed and may be counter-productive.