

Interactive comment on “Seismic vulnerability assessment of school buildings in Tehran city based on AHP and GIS” by M. Panahi et al.

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Dear reviewer #2

The authors would like to thank you for invaluable comments and suggestions, they will be used in our revised manuscript.

In the following parts you may find our reply to your comments:

1. Tehran is located near the vicinity of three more important, major and very active faults: Rey, North Tehran and Mousa. In this article we just assess seismic vulnerability of schools that is caused as a result of Rey fault movement. Also because the surface rupture connects with the subsurface plane of major movement release or whether it

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is a secondary effect of folding, lateral spreading and unfortunately we did not have enough information about subsurface layers so we could not study and consider surface rupture hazard in our article.

2. Standard 2800 (BHRC, 2005) is sets of regulations that has been developed based on the experiences of past earthquakes by the Iranian Building and Housing Research Center. It is the only scientific and official reference in order to determine how to design seismic resistant structures and how to assess seismic vulnerability of available buildings during earthquake. According to this regulation, the major seismic stability of structures is dependent on the construction materials, age of construction, quality and seismic resonance coefficient of buildings. Also, in Standard 2800 each of these factors was divided to some sub factors based on peak ground acceleration (PGA) of earthquake.

3. According to Figs. 5, 28% of schools have high structural vulnerability and do not have adequate strength at the time of earthquakes. This matter due to the reasons mentioned in this article is reasonable. But since the main purpose of writing this article is evaluation geotechnical and structural vulnerability of Tehran school buildings together thus by consideration these main factors the seismic vulnerability is reduced and just for only 72 schools (about 3%) out of 2125 schools destruction rate is very high and therefore their reconstruction should be considered, 9% of the schools are safe and about 88% of schools require seismic retrofitting. We think this is a reasonable result because the cost of reconstruction is much higher than the seismic retrofitting of existing structures.

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