

Response to the Referee comments on the article "Regional seismic risk assessment based on ground conditions in Uzbekistan".

Thank you for careful consideration of the article.

1. The article discusses the outcomes of developing GIS-platforms for seismic risk assessment in Uzbekistan. The significance of this publication is unquestionable. Nevertheless, in the reviewer's view, the authors have not effectively organized the information pertaining to the initial data used for risk assessments, nor have they adequately described the process for determining the final risk values. The text of the article is poorly structured, containing many introductory sentences, while there are no descriptions of specific stages of development of new maps. The article does not reveal the novelty of taking into account the ground conditions indicated in the title. The described changes in ground conditions accounting (135) are not used further and are not described. Furthermore, there are numerous inaccuracies within the article's text, tables and figures provided do not adhere to the standards expected in scientific publications.

Answer: We have corrected all reviewer's remarks and changed the structure of the article and eliminated the ambiguities.

2. Table 1 is redundant. The text suggests that it includes events with magnitudes greater than or equal to 7, which does not align with the table's actual content. Additionally, there is no information regarding the type of magnitude used, and inconsistencies exist in the spelling of the same names. The date of the event 1924 is not provided.

Answer: In the table there are earthquakes with the same name, but these events took place in the same place at different times. We included dates in the table

3. The title of the second section should be changed to "Data and methods"

Answer: Corrected

4. 101-102 - missing references.

5. 102 – The principle of division of the territory into 12 districts is not described. There is also no description of the division into sub-regions and sections.

Answer: we have removed 12 districts from the text. The map itself is divided into 14 districts by lithologic composition.

6. Figure 1 should be modified. Only the demonstration areas and the legend should be shown. All information about the map should be given in the figure caption.

Answer: Done

7. Figure 2 - see comments on Figure 1.

Answer: Corrected

8. Figure 3 is not referenced in the text, and the panels within the figure remain undescribed. The panels essentially replicate maps found in other figures.

Answer: We corrected the numeration and inconsistencies

9. Figure 4 - see comments on Figure 1. Figure 4 may be shown in conjunction with Figure 2. In this case it will be convenient for the reader to compare them

10. The color code of intensity in Fig. 2 and Fig. 4 must be the same.

Answer: Corrected

11. Changes in the definition of intensity should be described in more detail. For example, by presenting a table of area for one and the other seismic hazard maps.

Answer: Ratios between seismic hazard map and seismic hazard map considering ground conditions in percentage.

12. GESI_Program - missing references

Answer: Corrected

13. "Damage characteristics of buildings" - table it.

Answer: We have included table.

14. 240 - The vulnerability functions used should be cited. If they are presented in Fig. 5, this should be indicated. The article does not specify (except for Fig. 5) the ratio of peak acceleration and macroseismic intensity used. A correspondence table or conversion formula (with references) is needed

Answer: We have included the citation on vulnerability function. We have included a conversion equation with reference.

15. 252 "GESI_Program and experimental data of Sh. Khakimov" - missing references

Answer. We have corrected the references

16. 305, Figure 9 - PGA needs to be in m/s^2 as on Figure 5. The grading of the PGA in Fig. 8 is not clear. It would seem that it should coincide with the one in Fig. 5 and, accordingly, with the intervals corresponding to the seismic intensity values.; EMS-98 - missing references

Answer. We have corrected the figure and included the reference.

17. Since administrative divisions are difficult to present to the general reader, the information in Figure 11 should either be presented in the form of a map or population numbers should be given instead of/along with the names of administrative divisions. see comments on Figure 9

Answer: It is not possible to separate population instead of/along with the names of administrative units because there are different PGA for each city.

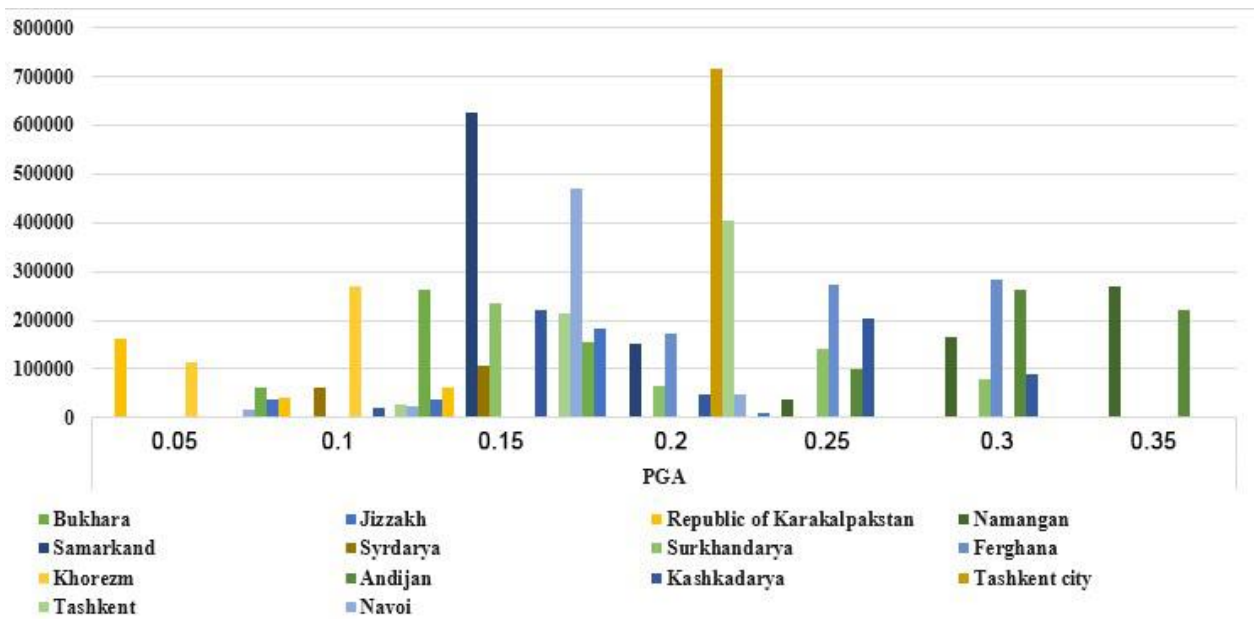


Figure 11: Distribution of residential buildings in the territories with different seismic effects within the administrative regions in Uzbekistan.

18. 335-340 - Technical information is redundant. If the database is open, a link to it should be provided. If it is closed for public access, this should also be indicated.

Answer: We have removed the redundant technical information and Figures 13 and 14.

19. 360-390 The section provides a map of seismic risk. It is not clear what the authors meant by "Probable seismic damage" in the title of the paragraph. Since the title of the article contains new seismic hazard estimates, seismic risk estimates based on the previous seismic hazard map should be given for comparison.

Answer: The seismic risk map is calculated only considering the ground conditions