Second report

The authors have addressed my comments below reasonably. I have no further comments.

First report

The paper describes results of regional probabilistic loss assessment for five countries in central Asia. It describes a case-study for the application of event-based seismic loss assessment at the regional level. One issue with the paper is the possibility to re-produce the results. Therefore, the method, the data used, and the validation should be described in sufficient details for others to be able to follow/reproduce. For instance, the paper does not offer much insight about how the stochastic catalogue is generated, how the vulnerability functions are developed, the characteristics of the exposure model, and how the projection into 2080 is developed (some socioeconomic pathways are mentioned, and the reader is referred to another work). Moreover, very little is shown in the paper by way of validation – mentioned also by the authors. In most cases, the authors refer to other works for details/validation. This approach reduces the autonomy of the paper and makes it harder to read and to follow.

The paper needs to specify the thematic datasets used, the sources of data, the resolutions, the spatial extent. This holds, especially, for the exposure datasets, the vulnerability models, seismic sources, the stochastic catalogues, the geological and geotechnical datasets, and the loss data from historical earthquakes. As a work showcasing the results of a regional risk assessment useful for decision making purposes, the results need more comprehensive validation (both at the local/global level). Have the authors thought of comparing with the results of the Global Earthquake Model, if available?

Here are some more specific comments:

- Please describe what is mean by the "regionally-consistent" in the title?
- Introduction and abstract: please specify the spatial extent for the 2bn AAL estimate. Is it all the five countries?
- Introduction, Line 85: It is not clear whether this part is related to the results of this paper or past studies. If these are findings of this paper, please move to the conclusions.
- Line 100: what is meant by a long-term relationship? Please describe.
- Figure 1: The quality of the figure should be improved; the plots are too small and the labels cannot be seen.
- Line 120: 2090 or 2080?
- Equation 4: please use a different notation like nu or lambda to indicate rate. F(.) is the notation for a cumulative distribution function (CDF), therefore it represents a probability and not a rate.
- Line 200: This is the epistemic uncertainty in the prediction of the IM for a given event. It is estimated through a logic tree approach. please fix the wording

- Figure 2: how these curves are derived? no explanation is provided. If they are derived based on literature, provide the statistics, the reference papers, information about the consequence model(s) used, information about the fragility curves, the number of damage states, etc.
- Figure 3: how this calibration is done? It seems that in some cases the difference with observed values has even increased after the calibration. Please describe the rationale for this calibration briefly.
- Line 350: "However, the same additive property does not hold true for specific return period losses, meaning that the regional loss for a given return period is different (lower) than the sum of the individual losses for that same return period calculated for each country." Why is lower? Please explain.
- Line 389: what is this shortlisting representing? how it done? what are the criteria?
- Table 7: If these scenarios represent a 100 year return period, say so specifically.
- Section 4.2: Scenario earthquake loss estimates. Perhaps, instead of calling them pseudo-deterministic, they could be referred to as scenario-based loss assessment. Then the authors could explain that the method is not fully deterministic.
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