Review of the manuscript of “Harmonizing seismicity information in Central Asian countries: earthquake catalog and active faults” by Poggi et al.

Development of a regionally consistent seismic catalog is a promising step towards advancing seismic hazard assessment and risk mitigation, which this study targets by focusing on Central Asia. In particular, open source development, and the emphasis given on a region that is diverse in terms of economical development and likely to be prone to future anthropogenic hazards due to industrial activities of the energy sector, I find the study of high value and would recommend its publication after the below comments are addressed.

Best regards,
Elif Oral

- In general:

  - An argumentation on what makes this manuscript worth publishing with respect to Poggi et al. (2023) https://doi.org/10.5194/nhess-2023-132 lacks.

  - I could not find any discussion on other groups’ studies on the same region (see for example, Caravan of GFZ https://www.gfz-potsdam.de/en/section/seismic-hazard-and-risk-dynamics/data-products-services/caravan). In other words, a brief but essential discussion on how the developments in this work can be useful/transformative for different topics under seismic hazard assessment (early warning; physics-based and/or probabilistic hazard assessment, etc.) lacks.

- To give an idea about spatiotemporal variation of seismicity, using the information in Fig. 5 on a map view like Fig. 4 would be helpful.

- L280: it reads like blasting and mining explosions are not human-induced. But they are. Please verify the validity of the terms.

- L280: if only removing anthropogenic events result in Poisson process, it contradicts with the 2nd sentence of the section.

- Please verify the use of “artificial” events. Induced and triggered events are the common terms, and they both can relate to anthropogenic activities such as blasting, geothermal activities, etc. At this point, if necessary, you can distinguish induced and triggered events in parallel with literature (see McGarr et al., 2002 https://doi.org/10.1016/S0074-6142(02)80243-1).

- L305: “… the largest events in the cluster are likely to be of natural origin.” A better way to justify this point is to show and comment on seismicity variation through magnitude-frequency distribution. Please quantify the variability of results to judge its significance/insignificance.

- L320: Any references of PSHA, and also for uncertainty related to source and ground motion?

- Table 9: USD: Do you mean surface or ground level? Surface rupture can relate to a given event, and does not necessarily mean surface level.

- L380: Please provide references for fault reliability and related classes.

Minor comments:

- Abstract: harmonized between countries? Do you mean countries in the same region make use of the same catalog? Unified? Regional joint use?

- Abstract: homogenized in Mw?

- L75: homogeneous Mw?

- L225: native estimate of Mw?

- I see what you mean by homogenization, but giving its definition at least once in the beginning would make it easier to follow the text.

- L395: a top-down approach?

- Line numbers for each “line” would be helpful for review.