General comments

This paper presents comprehensive physics-based database of injection-induced seismicity with descriptions related to its physical and statistical implications for understanding and forecasting of induced seismicity. I think the database adequately covers the vast range of physical parameters from worldwide injection-related geo-energy applications. The manuscript is well written and structured. I see the paper as a useful contribute to ESSD, if the below minor comments are handled appropriately.

Specific comments

1. This study seems not to discriminate the term "induced" and "triggered", although both terms indicate different nucleation mechanism in some studies (Dahm et al., 2015; McGarr et al., 2002, Ellsworth et al. 2019). Particularly, Ellsworth et al. (2019) classified the mainshock of the M_w 5.5 Pohang earthquake as triggered seismicity, which was initiated by anthropogenic forcing and propagated beyond the bounds of the stimulated region. Other seismic events that occurred during hydraulic stimulations were termed as induced seismicity, of which magnitudes are limited to within the spatial dimension of the stimulated volume (Kim et al., 2022). As mentioned in the manuscript, M_w 5.5 Pohang earthquake is regarded as a representative counter-example of magnitude scaling relations driven by McGarr (2014), but McGarr and Majer (2023) argue that the relationship is intended for earthquakes induced, not triggered. Thus, some descriptions regarding the term "induced" and "triggered" might be needed in the manuscript for the further understanding of the physical mechanism of seismicity.

2. In Figure 5, parameters with the logarithmic scale of y-axis such as permeability, maximum injection rate, maximum injection volume show that the mean value is plotted outside of the boxplot probably due to extremely large or small value of outliers. Particularly, the permeability for "research" is generally one or two order lower than the permeability for "geothermal", but mean values of both types indicate contrasting result. Mean values calculated by excluding the outliers can better represent the characteristics of the given parameters.

Technical corrections

1. L172. The project number is missing in first column of the given excel file.

2. Host rock properties in Figure 2. There is a typo in the unit of thermal expansion coefficient. (1/°K → 1/K)

3. L193: "hydrogeological" properties needs to be changed to "thermal and hydrogeological" properties, as thermal conductivity and thermal expansion coefficient are included in the reservoir rock properties.

References

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