

Evaluation:

This is an important study which estimate the spatial distribution of tsunami hazard in the South China Sea based on Geodetic locking of the Manila subduction zone. The study should be published because the influence of geodetic locking on the distribution of slip is rarely considered on tsunami hazard assessment in the South China Sea region among the current researches. It can help to understand the influence of uncertainties of the seismic source on tsunami hazard assessment. The article is well organized and well written. The present manuscript only needs minor revision for Natural Hazards and Earth System Science publication with the following comments.

Comments:

1. In general, the English of the text is good, but could be further improved. If you can, please ask a native speaker to polish the text to improve its readability.
2. At present, the abstract part does not give a good overview of the innovative points of the article. Please further summarize it.
3. Please check terminology consistency throughout the text. Such as “the maximum possible magnitude” and “the possible maximum magnitude”, as we all know, they represent different meanings.
4. Line 258: “in the current researchs” should be “in the current researches”; Please check out.
5. In the introduction part, it will be good that the quantitative tsunami hazard assessment results from other researchers should be addressed and cited.
6. The impact of source uncertainty on tsunami hazard assessment in Figure 3a, why does the authors use the 100-year return cycle as an example instead of 1000 years? In addition, we can find that the impacts did not have a consistent trend at different locations with the same heterogeneous slip scenarios. Please add possible reasons for the results.
7. It might be good to provide brief discussions on the limitation of the present method of based on geodetic locking especially for tsunami hazard assessment.