

## ***Interactive comment on “A Taylor’s power law in the Wenchuan earthquake sequence with fluctuation scaling” by Peijian Shi et al.***

**Anonymous Referee #3**

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Earthquake forecasting is very important but challenging. Due to the inherent randomness and complexity of rupture process, the forecast can only be made in probabilistic manners rather than in the form of deterministic predictions. Therefore, statistical methods play an important role in earthquake forecasting and hazard assessment. Taylor’s power law (TPL) has been widely testified across space and time in biomedical sciences, botany, ecology and many other fields. The current manuscript shows its application in the study of Wenchuan earthquake sequence. The results suggest that the mean–variance relationship of the energy release from the earthquakes could be predicted and the exponent of TPL are approximately 2.

The manuscript is well organized. The discussion is thorough and the methods are solid. I recommend that the manuscript could be considered for publication after reply-

C1

ing the following questions.

1. What is the minimum magnitude of completeness in the catalog? Will the missing events affect your results (such as the exponent in TPL)?
2. Line 336, you mentioned about space and time, but you only showed results for different temporal blocks. May you need to give some results using different spatial blocks (divide the study region in Fig.3a into several sub-regions)
3. How would you results benefit earthquake forecasting?

You may need to reference the following two papers, which are important pioneer work about scaling law for earthquakes.

1. Unified Scaling Law for Earthquakes, *PHYSICAL REVIEW LETTERS*, 2002;
2. Unified scaling law for earthquakes, *PNAS*, 2002

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2018-315>, 2018.

C2