

Interactive comment on “Utsu aftershock productivity law explained from geometric operations on the permanent static stress field of mainshocks” by Arnaud Mignan

Anonymous Referee #2

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This is an interesting paper which correlates the Utsu aftershock productivity with the geometric operations on the permanent static stress field. The paper is well written and I have very minor comments on the manuscript as indicated below.

1. For Figure 2, several hours after the 1992 Landers earthquake, the largest aftershock (or triggered earthquake), Big Bear earthquake, occurred southwest of the mainshock source region. I think it's better to mention in the text (around Lines 90) that these off-fault triggered seismicity also happened due to static stress changes imparted by the mainshock, while these triggered seismicity are out of topic in this paper. (If my understanding is correct, please neglect if I'm wrong) 2. In Figure 2a, the author

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assumed the regional stress of 10 bar. But, I think that this assumed regional stress is too small to cause earthquakes, because a stress drop basically ranges 10-100 bars (Kanamori and Anderson). Furthermore, I think that it is not so obvious whether on-fault aftershocks are due to static stress changes imparted by the mainshock or not. It's better to mention this point more carefully by referring several previous studies.

Interactive comment on Nonlin. Processes Geophys. Discuss., <https://doi.org/10.5194/npg-2017-38>, 2017.

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