Earth Surface Dynamics Discussions

Earth Surf. Dynam. Discuss., referee comment RC3
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Comment on esurf-2022-67

Anonymous Referee #3

Referee comment on "Reveal the relation between spatial patterns of rainfall return levels and landslide density" by Slim Mtibaa and Haruka Tsunetaka, Earth Surf. Dynam. Discuss., https://doi.org/10.5194/esurf-2022-67-RC3, 2023

This paper analyzed > 7,500 landslides in a region of Japan and insisted that the landslide density would be high when the rainfall return period exceeded 100 years. This paper deals with an interesting topic; the interpretation of results is reasonable for me.

I hope the authors consider the comments below to make this paper more attractive to readers.

The authors assume the stable conditions of rainfall. The meaning of “100 years” would differ in changing climate conditions. I want the authors to consider and mention climate change. The first step may be to examine trends in rainfall.

The authors analyzed using the return period of rainfall and did not mention the absolute amount (intensity) of rainfall. I am wondering whether the absolute amount of rainfall may be more important than the return period for understanding the distribution of the landslides.

The results section includes not only “results” but also “discussion”. It may be better to combine these two sections as the “results and discussion” section.

I guess there are several studies focusing on the same landslides because these landslides would affect a large-scale impact on this region. The authors did not mention the factor determining the density of the grids with any return periods of < 100 years. Are there any tips from the previous studies?