

Nat. Hazards Earth Syst. Sci. Discuss., referee comment RC1
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Comment on nhess-2021-157

Anonymous Referee #1

Referee comment on "Temporal changes in rainfall intensity–duration thresholds for post-wildfire flash floods in southern California" by Tao Liu et al., Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2021-157-RC1>, 2021

Wildfire is an important interference factor in the forest ecosystem. The occurrence and development of mountain torrents after a disaster has a complex mechanism, which is affected by many factors. Based on the precipitation obtained by hydrologic model and radar technology, estimate the identification threshold of flash floods after fire in the Southern California basin of the United States, and analyze the change characteristics of the threshold over time, providing reference for forest disaster prevention, disaster prevention and mitigation planning, and climate change adaptation in accordance. The article has a certain degree of logic and content, and the overall research is of strong practical significance. It can be included in this journal, but there are still some problems in the article, and it is recommended to modify it accordingly.

- Introduction

This part of the content is the current research status and progress of flash floods after the disaster, and points out that it is impossible to use a single indicator to characterize the threshold of flash floods. However, it seldom describes the innovation and research significance of the article, and it is recommended to add relevant content and modify it.

- Research area

□ The format of the title of the article is not uniform. For example, "Figure 1, Figure 2 and Fig. 4" suggest to unify the format and modify it according to the requirements of the

journal.

â□iThe article is rigorous in description and rich in content, but there are some detailed problems, such as the inconsistent citation format, (Staley et al., 2014). and (Oakley et al. 2018a). It is recommended to organize and modify according to the requirements of this journal.

- Data and methods

â□ The article estimates the value of precipitation based on hydrological models and radar technology. It is recommended to explain whether the result has passed relevant verification.

â□iThe article points out that after wildfires, mountain torrents erupt, saturated hydraulic conductivity on hillsides and hydraulic roughness in river channels play a decisive role, but whether it is necessary to consider the situation of burned sites, channel conditions, underlying surface conditions, and development history. Consider only the rainfall intensity, one of the material sources of the flood.

â□çThe article is based on the K2 hydrologic model to simulate rainfall division, surface watershed and flood path. This model has relative advantages over other hydrologic models. In this study area, this hydrologic model has fewer verification links and overall adaptability evaluation descriptions. It is recommended to consider adding related information.

â□£This paragraph is rich in content and complete in structure, but there are still some details. It is recommended to organize and modify it. For example, "It is written in the text (Table S1) but this table does not appear. The format of the table is recommended to be modified according to the journal's requirements. The three-line format shall prevail , So that readers can read and understand".

- Results

There are some detailed problems in the content of this paragraph. For example, "the horizontal and vertical coordinate units of some charts are not marked" are suggested to be added so that readers can understand the relevant content.

- Discussion

This paragraph points out the significance of the optimal measure of rainfall intensity after a fire for flood warning and the increase in rainfall intensity threshold over time.

□ It is recommended to increase the comparison between the research of this article and the research conclusions of other scholars, as well as the existing shortcomings.

□ There are some detailed problems, it is recommended to sort out and modify them, such as "It is written in the text (Figure S3) but this picture does not appear".

□ The title of 4.2 "Increases in rainfall intensity thresholds with time since fire "is similar to the title of 5.2 "Increasing rainfall intensity thresholds with time since fire". It is recommended to modify it for readers to understand.

- Conclusion

It is recommended to classify and elaborate the main research conclusions of the article for readers to understand.

- References

□ Some cited documents do not have a year and are unified in accordance with journal requirements.

□ The format of URL addition is not uniform, for example, line 485 is from <https://journals.ametsoc.org/view/journals/mwre/144/4/mwr-d-15-0242.1.xml>. Others are added directly. It is recommended to make unified rectification in accordance with the requirements of the journal. □ The font size in the text are not uniform. For example, "35 of line 491, 31 of line 518, and 5 of line 556 are bold fonts, but other references do not have this format, and it is recommended to be unified".