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Comment on nhess-2022-194

Anonymous Referee #1

Referee comment on "Increased spatial extent and likelihood of compound long-duration dry and hot events in China, 1961–2014" by Yi Yang et al., Nat. Hazards Earth Syst. Sci. Discuss., https://doi.org/10.5194/nhess-2022-194-RC1, 2022

The paper proposes a very interesting analysis on the occurrence of combined hot and dry events in China, which represent a significant natural hazard. To do so, the authors use daily maximum temperature and precipitation data obtained from the CN05.1 dataset over the period 1961 to 2014.

In addition to the identification of hotspots for the country, the authors propose an analysis of the trends with which these events occurred and a further analysis of two sub-periods (1961-1987 and 1988-2014) to highlight traces of climate change.

I find the work to be well organised, well written and of high quality. In the following, I present some general recommendations that I think would be useful to improve the manuscript. In particular, I would extend the discussion not so much with regard to the results obtained (already very good), but by improving the narrative concerning the relationship between the extreme event studied <-> natural hazard (and the main purpose of the review).

- Section 3: change the title from 'Results' to 'Results and Discussion'.
- In the introduction, I suggest adding at least one sentence on technologies and methods that offer large-scale climate data with sufficient resolution to obtain practical information. Mention, for example, satellite products and large weather station networks such as the one used by the authors.
- Although it is mentioned that such combined events can be both an environmental and human problem, I would strongly suggest strengthening the discussion on their role as a natural hazard. In other words, I would enrich the (well-done) climate analysis with indications more closely related to the concept of hazard (for example, more space for potential impacts). I believe that in this way the work can be further aligned with the aims of the journal.
- In my opinion, the most interesting part of the work is the fact that such extreme events are tending to increase in frequency with the passage of time. This fact of

climate change should find more space in the conclusions.

- Also in the conclusions, I would dedicate a few more sentences on possible limitations of the proposed approach.