

Interactive comment on “Evaluation of the probable annual flood damage influenced by El-Niño in the Kan River Basin, Iran” by Farhad Hooshyaripor et al.

Anonymous Referee #3

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The manuscript described an interesting idea on looking at the flood damage caused by ENSO. A case study in Kan River Basin, Iran was presented. The manuscript is well organized and easy to follow. However, I think the current results are not convincing enough, because huge uncertainties from the 6-step were ignored. Extrapolation without acknowledging uncertainties can mislead the result. Thus, I recommend return the manuscript to authors for major revision.

Major comments:

In methodology section, authors presented a 6-step method to investigate the flood damage from ENSO. In each of those steps, there are uncertainties. In particular, the

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steps I, II, III and VI are based on probabilistic models, in which uncertainties cannot be avoided. The main issue is that when putting those 6 steps in series the uncertainty can be exploded. This makes the result meaningless when having huge uncertainty.

When estimating the relationship between rainfall variation and SOI, large uncertainty should exist on the slope as shown in Figure 2. The results derived from Eq 3 should also have a large uncertainty. When bringing this uncertainty into next steps, the final results may be very different from what has been found right now.

Minor comments:

There are some constant values in equation 2 and 4. Authors need to justify these numbers.

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