Comment on nhess-2022-136
Anonymous Referee #3


The authors used the Cloud-improved Entropy Method and the Fuzzy Variable Theory to calculate the vulnerability of Chinese provinces to extreme floods. The trend and law of vulnerability distribution are analyzed, which provides a reference for regional risk management. This manuscript is very interesting and valuable. I do not have strong suggestions, only the following small suggestions.

(1) Add relevant contents of index SI and PI in Table 1.

(2) In section 2.1, it is written that the subjectivity and objectivity of weights are considered. Where are the subjectivity and objectivity embodied respectively?

(3) In section 2.2.1, RP is defined as the population at risk. In fact, it is more appropriate to call it population density.

(4) The method proposed in this study is to conduct flood vulnerability research and assessment on a provincial basis. Compared with the research on City, county and district scale, does it have more advantages in some aspects?

(5) The severity of disasters caused by floods is largely related to the intensity of floods. Are the results of this study applicable to flood analysis on any scale? When the flood intensity is different, how does it affect the final evaluation result?