Reviewer 1

The authors would like to thank the Anonymous Referee #1 for their valuable feedback on the submitted manuscript.

COMMENT 1.1*: The paper is very interesting, the topic is important, and the methodology considered is appropriate. My main concern is about the data used here, partially described in section 2.2. As explained in https://doi.org/10.5194/nhess-22-2401-2022 (Charpentier, James and Ali 2022) on a similar topic, the French system has a very specific design, where claims within a "town" (or "commune" or "municipality") need first a national recognition before beeing accepted as "legitimate claims" (and then paid by the insurance company). In Charpentier, James and Ali (2022), it is observed that models are good to predict town that will claim losses, but the national recognition stage is much harder. Which data are used in this study? Those obtained initially, from towns claiming losses, or those obtained after censoring, by national recognition? In the first case, the paper is ok, and could be published. Otherwise, there is a major selection bias in the study that should, somehow, be considered.*

RESPONSE 1.1: Many thanks for noting this. The insurance dataset used in this study corresponds to the accepted "legitimate claims", after the national recognition step (accepted CatNat requests). To investigate the influence of this national recognition stage on the end-of-chain insurance data, we propose to add to the paper an interpretation of the history of accepted and refused national recognition requests for the towns forming our sample (this data was obtained by merging individual decree files downloaded from the CCR website: https://catastrophes-naturelles.ccr.fr/les-arretes). For each year and subset, we confront the number of accepted and denied requests to the drought index and the reported claims. These elements are added to Figure 5 (see below). The number of refused decrees is significant and does have an influence on the insurance data. We could identify situations in calibration and validation set where this bias could be the source of inconsistencies between drought index and claims. In particular, we can explain all the inconsistencies noted between index and claims (positive index and no claims) in 2003 and 2018 by this factor (3 inconsistencies in 2003 and 1 in 2018, in the figure below).

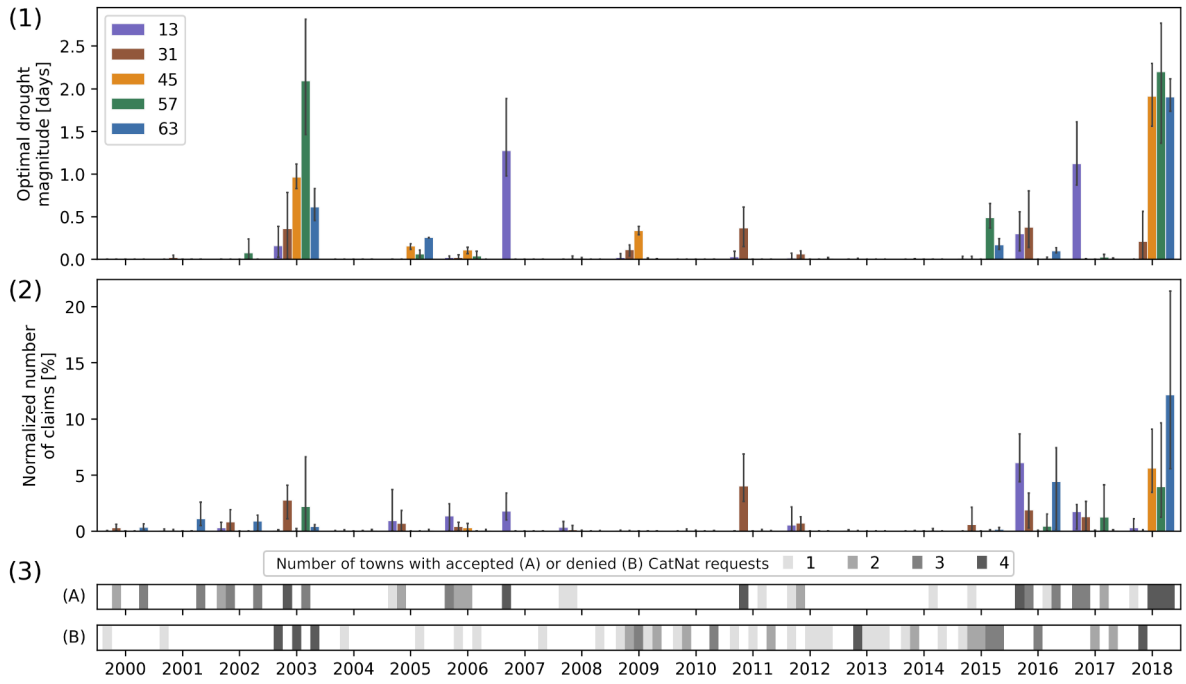

Figure 4 : Optimal drought magnitude (1), and normalized number of claims (2) averaged by calibration subset, and numbers of towns per subset with accepted (3A) or denied (3B) CatNat requests. The error bars on (A) and (B) indicate the amplitude of values.