

Interactive comment on “The relationship between precipitation and insurance data for flood damages in a region of the Mediterranean (Northeast Spain)” by Maria Cortès et al.

Anonymous Referee #3

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Article summary

The article analyses the correlation between extreme rainfall events and compensation costs triggered by flash floods, which are drawn from insurance records. The correlation coefficient is used to draw conclusions on the causal effect between precipitation and damage magnitude, using different scales of aggregation as tests.

General comments

The topic is of great importance and the use of empirical data is a plus, however the thinking behind the paper is a bit too much straightforward. Indeed precipitation is a major driver of flash flood damage; but it is not the only factor. The paper do not

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take in account other factors influencing damage (slopes, land cover and soil sealing, vegetation), and explains the effect (damage) by stating the cause (heavy rainfall); the conclusion uses correlation values to confirm the hypothesis.

The statistical analysis needs to go deeper and to add more insights in relation to the distribution of damage along different typologies of exposure. The analysis uses 4 different aggregation scales based on administrative units; most commonly in these kind of studies the scale would be smaller than the municipality. A projection of the data over built-up areas from land cover, building units or a regular grid cells would improve the analysis by linking the variables at a more detailed and homogeneous unit compared to the administrative boundaries. I would suggest then to present only the results relative to the better performing aggregation method, as the comparison on administrative units do not produce added value for the conclusions.

The difference between different kind of floods and to which kind exactly the compensatory records refer is not clearly stated in the paper. Overall, both the record data and the spatial data needs to be presented more precisely and clearly.

Maps can be easily reduced in numbers and made more readable: figure 1 "a" and "b" can be combined by showing only the necessary information (river, basins, population, scores). Same goes for figure 3, it could be combined into 1 or 2 showing the information (dots) in different shapes/colors.

Finally, I agree with the insightful comments by reviewer 1 and 2 and suggest to majorly revise the paper by rethinking its objectives and methods.

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