



Socioeconomical impact of flood events in Spanish Mediterranean basins

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The Mediterranean is an area frequently affected by flood events that produce significant socioeconomic damage. The majority of the damage caused by these events is due to local events, with intense and short-lived rainfall rather than river overflow. Therefore, it is assumed that precipitation is the main contributing factor for damage caused by this type of event. To corroborate this hypothesis, the relationship between precipitation and compensations paid by insurance companies has been analysed in the Spanish Mediterranean region.

The relationship has been assessed using logistic regression models in order to estimate the probability of overpassing a selected economical damage threshold given a particular precipitation amount. Furthermore, it has been taken into account other variables in the model, both in terms of hazard (slope of the basin), and vulnerability and exposure (Gross Domestic Product, population density, percentage of urban area). Finally, the direct impact in human losses has also been studied.

In order to validate the model we consider the ROC diagrams (Receiver Operating Characteristic), as well as specific study cases have been used. Results show that our model is able to simulate the probability of a damaging event as a function of precipitation (Cortès et al. 2018).

These identified relationships will be applied in order to predict flood damage in future climate change scenarios. This work has been developed in the framework of the Spanish projects HOPE (CGL2014-52571-R) and M-CostAdapt (CTM2017-83655-C2-2-R).