

Increasing severity of damage caused by floods in the Spanish Mediterranean coast (1960-2014), climate change or vulnerability?

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In recent decades, there has been an increase in physical and economic losses (WMO, CRED and UCL, 2014) that raises serious concerns in society. Climate change projections may explain the rise in flood losses; however, these shouldn't be considered yet (Bouwer, 2011). According to IPCC (2014), there is low confidence in anthropogenic climate change affecting the frequency and magnitude of fluvial floods on a global scale. In other words, this increase in flood events is not completely related to the higher frequency of heavy rainfall.

To illustrate the aforementioned, a spatial example can be seen in the study area. In the Spanish Mediterranean coast, we see an increase in economic losses within the last 50 years due to flood events (Gil et al., 2014). It seems that the socio-economic growth and the rise of housing construction (Gaja, 2008) have led to an increase in vulnerability and exposure which are mainly responsible for those losses and the increase in severity of flood events (Pérez et al., 2015). Furthermore, this situation will probably become more precarious if some climate forecasts are met [IPCC, 2014; AEMET, 2015], and if the economic model fails to adopt efficient adaptive measures. Therefore, it is interesting to focus attention on social factors either within the present or future scenario in order to minimise the potential consequences and improve the adaptation.

The main objective of this work focuses on the study of the evolution of the severity of the floods in the Spanish Mediterranean coast for the period (1960-2015). To do that, a statistical analysis of the data base [Gil et al., 2014; extended to the entire Spanish Mediterranean coast (MEDIFLOOD)] and a multiscale mapping (local, provincial and regional level) of the frequency of these events will take place in order to make comparisons and show spatiotemporal patterns according to the severity events evolution. Preliminary results show some interesting statistically significant relationships between severity and the increase of population and buildings mentioned above.

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