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Flash floods in Catalonia: a recurrent situation

M.C. Llasat (1), S. Lindbergh (2), M. Llasat-Botija (1), A. Rodríguez (1), and A. Zaragoza (1)

(1) University of Barcelona, Department of Astronomy and Meteorology, Barcelona, Spain (carmell@am.ub.es, +34-(0)93-4021133), (2) University of Montpellier III

A database with information about the social impact produced by all the flood events recorded in Catalonia between 1982 and 2007 has been built. Original information comes from the INUNGAMA database (1900-2000) presented by Barnolas and Llasat (2007), the PRESSGAMA database (1982-2007) (Llasat et al., in rev.) and information from different published works (Barriendos et al, 2003; Barriendos and Pomés, 1993). Social impact has been obtained systematically in basis to news press data and, occasionally, in basis to insurance data. Flood events have been classified in ordinary floods, extraordinary floods and catastrophic ones, following the proposal of Llasat et al (2005). However, having in mind the flash floods effects, some new categories concerning casualties and car damages have also been introduced. The spatial and temporal distribution of these flood events has been analysed. Results have been compared with those obtained for the period 1900-2000 (Barnolas and Llasat, 2007) and 1350-2000 (Barrera et al, 2006).

In order to better estimate the social impact and vulnerability some indicators have been defined and analyzed for some specific cases and a specific region. Besides the indicators applied in the INUNCAT Plan to obtain a cartography of flood risk in Catalonia, other ones like the number of cars affected or the number of request received by the meteorological service, has been also taken into account. These indicators allow analyzing global and temporal trends as well as characterizing the events. The selected region has been the Maresme, which is a flood prone region with a great density of population and that experiences every year one or more flash floods. The annual number of floods shows a positive trend that cannot be justified by the rainfall trend. Both vulnerability and hazard components have been considered and a discussion about the flood prevention measures is presented.

The third part of this work has been centred in the analysis and characterization of flash flood events. With this aim, the eleven cases selected in the framework of the FLASH European project have been analysed in depth. The relationship between the rainfall recorded above 60, 100 and 150 mm and the municipalities affected by floods have been analysed.