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Looking for the best flash floods indicators in Mediterranean Region

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Flash floods are a recurrent hazard in Mediterranean Region. From a global point of view, a distinction between two kinds of floods can be made (Llasat, 2009): a) Short-lived and strongly convective events (<3 h) of very intense precipitation (peaks above 3 mm/min) and total rainfall <100 mm, that usually appear during summer and early autumn and produce local flash-floods in small catchments; b) Moderate convective events that last less than 24 hours and the maximum precipitation is usually recorded in less than 6 hours, with accumulated rainfall above 200 mm, although in some occasions they can be produced in the context of a longest event; they can produce catastrophic flash floods, and are usually recorded in autumn and end of summer. First ones are more frequent and have an important social impact, due to the great urbanization of some areas in which ephemeral channels are present; they can bring road traffic to a standstill, give rise to power cuts, and sweep away cars parked in the littoral water courses or in adjoining streets, but lose of lives are usually the result of the imprudent behaviour of people. The second type of flash-flood has produced the highest number of casualties when they have affected flood-prone areas with high concentrations of people, and catastrophic damages. However, there is not an agreement about the criteria of damages evaluation, in the same sense that there are notable discrepancies between authors in the criteria used to estimate the vulnerability.

A number above 185 flood events have been recorded between 1990 and 2006 in Mediterranean region (Llasat et al, in press). A great part of them have been flash-floods, but, in order to make a good characterization of them, it is needed to recur to the most suitable indicators (Gruntfest, 1997, Messner and Meyer, 2006). The presentation is based on the research developed in the framework of the European Project FLASH (http://flash-eu.tau.ac.il/index.php), and particularly in the analysis in deep of 20 flash-flood cases recorded between 2005 and 2006. This sample has been increased with some selected cases of the European project HYDRATE. Information from all the flash-floods recorded in Catalonia (Spain) since 1982, completed with data about population density and so on, has also been considered.