



EXAMPLE OF FLASH FLOODS IN SPAIN: PALANCIA RIVER

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Abstract

In Spain, floods may result from highly different meteorological phenomena. Flash floods are provoked by mainly two kinds of rains, medium or large-scale convective rains that take place in autumn, lasting less than 24 hours and affecting mostly medium-sized Mediterranean basins, and small-scale convective rain which are highly intense but short (2 or 3 hours) and not particularly extensive, and take place in small mountain basins or in headwaters of rivers.

The problem of this type of floods increase when the geomorphology of the affected areas may contribute in an intensification of the effects of floods, mainly when the movement of water become two-dimensional. This occurs when the slope of the river suddenly change as it flows into an alluvial plain. Formations known as alluvial fans are usually created, where the water flow is two-dimensional whit high speeds and shallow waters. These are usually found in arid and mountainous areas, and create triangular flood plains

As a response to the Flood Directive on the second phase of mapping the risk, a National Cartography System of flood prone areas is being developed in Spain. Some examples are being carried out in order to improve this System and trying to find the best way to study the different types of floods. Aspects such as the hydrological characterization of the events, criteria for hydraulic modelling, the inclusion of historical events



and geomorphology in the analysis of information and which is the best information to be represented in risk and hazard maps, are discussed. In order to study flash floods, the Palancia River, located on the Mediterranean area, has been selected as pilot case. Results and conclusions of this study case are presented in the following paper.