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A comparison of heavy rainfall events in Spain. Modeling by radar and raingauge data

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Between 1950 and 1999 there were a total of over 2,200 deaths in Spain (of which 1,400 were in Catalonia) and material damage amounting to over EUR301,000,000 per year as a consequence of floods. Usually the most affected area is the Mediterranean one, where heavy rainfalls and floods are frequent during the autumn season. However, although in the central and western part of the Iberian Peninsula floods are not so important, their role and impact are not insignificant, mainly in winter. The objective of this contribution is to analyse the main hydrometeorological features of the floods recorded in the Tagus basin and comparing them with these ones of the Internal Basins of Catalonia, for which more meteorological analysis and information is available. In this last case, all the flood events recorded between 1996 and 2005 have been analysed using the raingauge data and the meteorological radar, and taking into account the flow values. Radar imagery and rainfall data have been introduced into a GIS, and a classification of the events has been done. A distinction between short-lived events, episodes of heavy rain sustained for several hours which can produce catastrophic floods, and episodes of long duration with weak average pluviometric intensity values has been made. Besides this, the convective features and spatial rainfall distribution has been taken into account.