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Flash-floods and heavy rain over Bilbao: the first june 2008 case

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On June 1st 2008 a convective precipitation episode produces an intense rainfall in the area of Bilbao (north of Iberian Peninsula) generating flash-floods and damages on the area. In order to understand the development and evolution of this severe weather situation, synoptic characteristics, mesoscale situation and other local meteorological characteristics are analyzed. Including datasets coming from the Basque Country Automatic Weather Station Mesonetwork and other sources (MSG, Radar, etc) available during this episode.

In this singular case, convective precipitations are produced over Bilbao metropolitan area, collecting more than one hundred millimeters precipitation in twenty four hours with hourly rain intensities of thirty millimeters. In order to characterize the synoptic environment during this event, different synoptic maps are analyzed; 500 hPa topography, 850 hPa topography, sea level pressure, some instability indexes, dynamic instability and other relevant parameters are considered. A Mesoscale Convective System (MCS) develops in a high level cut-off low synoptical environment with low level convergence and light wind from north. The absence of unidirectional wind shear favors the persistence of thunderstorms than persists for several hours.