

A study of a flashflood case in Basque Country: the 16th june 2010 event

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On June 16th 2010 as a consequence of a quasi-stationary frontal passage over Basque Country, a persistent precipitation episode produces in the area of Basque Country a flash-flood event. In order to understand the development and evolution of this severe weather situation, synoptic characteristics, mesoscale situation and other local meteorological aspects are analyzed. We also include some data coming from the Basque Country Automatic Weather Station Mesonet and other data sources (MSG, Radar, etc) available during this episode. Finally we present some aspects related with damages and different actions taken during this severe weather event.

During this event an occluded quasi-stationary front coming from the Mediterranean Sea reach our region. Maximum frontal activity affects specially the northwest part of the Basque Country and in particular the Bilbao area where the daily maximum precipitation accumulated are observed (Abusu: 138 mm, Deusto: 130 mm, Derio: 129 mm). Rain is persistent with moderate to heavy intensity in some places in the Bilbao area (Abusu: 14.8 mm/hour). Significant quantities are accumulated in the rest of Basque Country Cantabric slope, surpassing the 80 mm in numerous locations. As a consequence of these precipitations warning and flood threshold are surpassed in numerous stations in the Cantabric slope, affecting specially the Basque Country west river basins.

The synoptic situation during this episode is determined by the displacement of a cut off low (COL) from north southwards, that is located during the 15th over the Basque country, and during the 16th moves eastward and northwards, to finally place over France. In low levels, north winds provide humidity to the system. The formation of the low pressure area in the Mediterranean generate a backward warm front moving from east to west, reaching our area like a occluded quasi-stationary front. The rotational movements in all levels favour the slow displacement of the front over our region, generating persistent precipitations during day 16th.