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A study of 13 september 2016 storm event in Basque Country

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During the 13 september 2016 heavy storms episode, heavy showers and intense wind affect some parts of Basque Country. In this work different aspects of this severe event are studied considering synoptic and mesoscale features. In order to characterize the synoptic environment during this episode, different synoptic maps are analyzed in the main levels; 300 hPa, 500 hPa and 850 hPa topographies, sea level pressure, and relevant parameters are taking into account. In this analysis we use recorded data from the automatic weather stations network and remote sensing data available in the area.

The synoptic situation affecting Basque Country area is marked by the presence of a low pressure area in the Cantabric sea, with an associated front and a line of prefrontal instability, as well as a trough in height with its axis moving from west to east of the Iberian Peninsula. The difference between the air masses of the east and west of the Bay of Biscay is significant, enhancing the stormy activity and the sharp wind reversal on the coast.

The passage of the prefrontal instability line and the cold front, during the first hours of the afternoon, leaves very strong storms with intense showers and very strong gusty winds especially during the wind turn in the coastal line. Wind gusts surpass 100km/h in some points, the drop off in temperature with the turn is more than 10° C in a short time and more than 25mm im am hour and 15mm in 10min are registered.