



Analysis of a tornado event in Basque Country

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In this work we present an analysis of a tornado occurrence in Basque Country during 23 june 2014, considering synoptical, mesoscale and local aspects. This study includes all available information from the area, and radar data provided by Basque Meteorology Agency (Euskalmet).

Unless tornado cases in Iberian Peninsula, and particularly in Mediterranean area (Catalonia, Balearic Islands, and Andalusia) are not unusual, those phenomena are less observed in north of Iberian Peninsula. Particularly, in Basque Country, none documented and confirmed case exist prior to this event.

During 23 june 2014, Basque Country area is affected by a cut-off low located at the west of Iberian peninsula, traveling to the east and promoting instability. Difluence in high layers are significant, with weak flux at 500 hPa and 300hPa levels, at low levels convergence is present at the South of Basque Country. At surface level, a relative thermal low is present with undefined wind and relatively warm and humid air mass affecting the area. These general environment favors a steep mid level lapse rate and humid air advected from the sea, supporting high degree of instability and moderate shear values increasing during day due to approaching upper level low.

During the afternoon, different severe storms affect southern part of Basque Country, with heavy rain, hail and wind gust. Particularly in Izki area hundreds of trees are removed in a narrow area compatible with a tornado path. Some Radar data, from the Euskalmet C-band Doppler radar sited near the affected area, present different signatures from supercell strucure and tornadogenesis.