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Storm with anomalous movement in Bilbao area: 28 August 2013 case.

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In this study a singular situation is analyzed: Generation of convective cells and their unusual movement from north to south, with very heavy showers in Bilbao. Although the synoptic environment favors instability, in some degree, the occurrence of such heavy showers are not forecasted . The peculiarities of this situation are analyzed from the synoptic and mesoscale point of view, taking into account different meteorological parameters.
The synoptic situation is marked by the Atlantic anticyclone that goes into Europe, favouring the north wind in surface. In middle and upper layers, meridional circulation with cold air over the Bay of Biscay is present (-15 º C at 500 hPa level). Sea surface temperature is around 22 º C. Although stability indices are low, convective cells leave heavy showers in the sea and close to the Basque coast, especially in Bilbao.
In this work, we analyze the generation of convective cells and reasons why forecasted and observed stability indices were not so high. Vertical structure of storms cells was not exceptional. Cells with relatively little vertical development and a slow and irregular movement from north to south (not usually observed during summer in this region) promote heavy showers all around the area.