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A study of an intense and persistent precipitation event in Basque Country: the 11 January 2018 case.

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In this work a study of an unusual severe weather episode (11 January 2018) is performed focusing on synoptic, mesoscale and local aspects based on different data available in the studied area as the Basque Country Automatic Weather Station mesonetwork, the Euskalmet Dual Polarization Radar, Operational Numerical models and other sources.

During the afternoon of the 11 January 2018 an occluded front associated with a low pressure system, affects especially the Basque Country area in the North of Iberian Peninsula. The local pressure field configuration in the Basque Country region generates a surface convergence zone in the north part of the territory (area of Gernika) where two different air masses join, one relatively warmer that is situated towards the west and another cold air mass stagnated at the east, this causes a special activation of the front in the affected area.

Precipitation during the episode surpass 70 liters per square meter in 24 hours in different parts of the territory, with hourly intensities greater than 25 liters per square meter and ten minutes intensities greater than 8 liters per square meter . Those quantities are unusual in our territory in winter season cases.

In different municipalities in Bizkaia historical territory, water accumulations on streets, the overflow of several rivers, localized minor floods and numerous problems on roads are produced. The most affected area is the surroundings of Gernika, where different material damage occurs and the Firemen had to rescue several people from cars trapped by water in the Muxika area.