EMS Annual Meeting Abstracts
Vol. 13, EMS2016-626, 2016
16th EMS / 11th ECAC


# El Niño influence on the Basque Country

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El Niño-Southern Oscillation (ENSO) is the dominant global climate mode at interannual timescales and the main source of predictability. Several studies point out that El Niño influence over European North Atlantic sector is consistent and statistically significant. Some hypotheses show that this influence, which lacks of stationarity, seems to be modulated by multidecadal oscillation of the anomalous Sea Surface Temperature (SST) over the Atlantic and Pacific basins (AMO and PDO respectively). A recent study has found how that the main El Niño teleconnection over European rainfall takes place in late winter and spring (February-March-April), being modulated by the Atlantic Multidecadal Oscillation (AMO), while in fall is the Pacific Decadal Oscillation (PDO) which appears to modulate this teleconnection. The authors of this study shows the North of Spain (where the Basque Country region is located) as a transition zone of this teleconnection, so a better analysis of the ENSO-rainfall link in this particular peninsular region needs to be clarified in order to achieve its predictability.

The present study focuses on a thoroughly analysis of the behaviour of El Niño influence on different variables - as anomalous rainfall, minimum and maximum temperature- in different seasons over the region of the Basque Country. This work is performed analysing a high resolution gridded dataset over Spain, Sea Level Pressure dataset (SLP) in the North Atlantic, European and Mediterranean regions, El Niño climate indices and Sea Surface Temperature dataset.

The results of this study show a non-stationary relationship between Basque Country rainfall, minimum and maximum temperature, and El Niño. This relation depends on the Pacific region considered and seems to be maximum in summer. The impact of the connection seems to be phase locked to the seasonal cycle of the circulation in the region.