



## **The ENSO signal impact in the rainfall of the Southwestern Europe before and after the Climate Shift**

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To forecast the climate variability in the European region the identification of the oceanic forcing factors is necessary. Previous studies have shown the impact of the tropical oceans, particularly the Pacific, on the European climate. There are various mechanisms that explain the ENSO teleconnection with the European climate. Those mechanisms are not linear and include tropospheric and stratospheric pathways through the extratropical Pacific (via PNA). There is another hypothesis that explains this teleconnection via the interaction with the Tropical Atlantic using an atmospheric bridge.

In this study the ENSO impact on Southwestern European rainfall will be analysed exploring the related anomalous atmospheric dynamics. A previous work has shown a significant change in the correlation between the Northwestern Iberian Peninsula spring anomalous precipitation and ENSO (Lorenzo et al., 2010). This change took place in the 1970's and coincides with the Climate-Shift phenomenon that took place between 1976 and 1977 as a result of the change in the sign of the PDO.

The obtained results show the existence of a dynamical link between winter ENSO events and the spring rainfall in the Southwestern of Europe, via Rossby waves. Before the Climate Shift, La Niña events produced dry springs over Southwestern Europe, while El Niño events did not affect. After this period, the situation was the opposite and El Niño events produced rainy springs whilst La Niña events do not show any significant relationship.

### References:

Lorenzo M.N., J.J. Taboada, I. Iglesias and M. Gómez-Gesteira (2010): Predictability of the spring rainfall in North-west of Iberian from sea surfaces temperatures of ENSO areas. Climatic Change DOI:10.1007/s10584-010-9991-6.