

HyMeX program: Multidecadal modulation of the ENSO influence on the interannual Euro-Mediterranean rainfall.Jorge López-Parages[†]; Belén Rodríguez-Fonseca[†] Universidad Complutense de Madrid, SpainLeading author: parages4@gmail.com

Several studies have shown how the anomalous precipitation over the Euro-Mediterranean region is influenced by the ENSO phenomena. This influence is not stationary, with maximum correlations in the beginning of the twenty century and since the 1976-1977 Climate Shift and no influence during the 1940's-50's-60's. In this study we analyze the purely interannual rainfall anomalies, unlike with previous studies that consider the whole precipitation signal. The role of Natural Multidecadal Variability in the relationship between ENSO and the interannual precipitation over the Euro-Mediterranean region is studied for the 20th century. Principal Component Analysis (PCA) of the anomalous rainfall for the 20th century is performed for all the seasons considering the whole precipitation signal (total case) and only the interannual one (interannual case) . The results in late winter show changes in the Sea Level Pressure (SLP) anomalous projection, from a zonally-symmetric dipolar NAO-like pattern to an undulatory pattern. It seems that in the total case the results should be interpreted with caution due to the length of the time period analyzed, which includes variability at interannual and decadal times scales. Also, 20-year moving window correlations along the 20th century between the Nino3.4 index and the interannual Euro-Mediterranean rainfall have been done for groups of three months along the year. The correlation between the leading principal component in late winter and spring, and the Nino3.4 index shows a significance multidecadal modulation, particularly with AMO, showing the non-stationarity of the ENSO teleconnections with the Euro-Mediterranean region.