El Niño-Southern Oscillation (ENSO) is the globally dominant mode at interannual timescales. However, its influence over the North Atlantic sector is less well understood than those influencing on the Pacific due to the highly variable extratropical circulation of the Atlantic basin [Trenberth et al., 1998]. Over the North Atlantic, most of the studies point out to the North Atlantic Oscillation (NAO) as the leading pattern controlling the atmospheric variability. An interesting point is that, at interannual timescales, the regional atmospheric spatial pattern at surface levels over the Euro-Atlantic region associated with the Pacific El Niño presents a similar structure to the one associated with the NAO [Brönnimann, 2007, García-Serrano et al., 2012]. In this way, although most of the NAO signal has an internal origin, external contributions associated with Sea Surface Temperature (SST) changes in the Pacific can have a determinant impact on the centers of action of the NAO.

Over Europe, previous studies have found nonstationary features of ENSO and NAO impacts along the 20th century. These studies include interdecadal shifts in the location of NAO centers [Vicente-Serrano et al., 2008], different impacts of ENSO on the Euro-Atlantic winter climate before and after the 1970s [Sneddon et al., 2004], multidecadal variations in the relationship between ENSO and the western Mediterranean rainfall [Mariotti et al., 2001], or a changing ENSO impact depending on the PDO and multidecadal oscillations of the SST over the Pacific [Zanchett et al., 2008]. However, none of these studies has restricted the analysis to the interannual signal, distinguishing in this way the multidecadal modulation of the interannual variability from the purely multidecadal variability not removed in the analysis.

• Similar iEMedR pattern for FMA and OND, but different projection of the anomalous SST onto the leading PC, mainly over the tropical Pacific.
• 1º PCs statistically significant changes in its variance along 20º century.

1. To investigate the El Niño impact over the Euro-Mediterranean climate variability at interannual timescales.
2. To analyze the stationarity of this El Niño impact and related sources.

REFERENCES


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