



ENSO impact on northwest African upwelling

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One of the most robust ENSO teleconnections is that linking SST anomalies in the equatorial Pacific and Tropical North Atlantic (TNA) in boreal spring. While the role played by the wind-evaporation-SST (WES) feedback in maintaining the ENSO-related SST anomalies over the TNA is well understood, many questions remain open about the signature of this ENSO teleconnection on the northwest African upwelling system and its role for the further response during the spring season along the whole TNA. This issue is analyzed here in both observations and CGCM models with different nominal resolution (CMIP6 HighResMIP simulations). In particular, the relevance of the mean state variability in the tropical Atlantic for modulating the northwest African upwelling response to ENSO has been assessed in depth. Furthermore, and considering the exceptional ecological importance of this upwelling area, the ENSO-related influence on the spatio-temporal variability of round sardinella (the dominant fish species in terms of abundance) has been also analyzed. To this aim, an *end-to-end* strategy which combines models of physics (hydrodynamic), lower trophic levels (nutrient-plankton) and upper trophic levels (sardinella), is used. All these analyses highlight from both climate and ecological perspectives, the relevance of better understanding the ENSO-northwest African upwelling teleconnection.