

The relation between the Atlantic and Pacific Niños in CMIP simulations: A multidecadal modulation

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Recent studies have pointed out the existence, from the 1970's, of a global tropical interannual mode, occurring in boreal summer, in which a warming (cooling) in the equatorial Atlantic coexists with a cooling(warming) in the Pacific and Indian equatorial regions . The impacts of this mode are numerous including the Southamerican and West African monsoons. Moreover, one of these studies has shown how, from the 1970's, the Atlantic Niño in summer is able to develop the dynamical processes which trigger a La Niña event in the Pacific, and the oposite. Current seasonal prediction systems are based on ENSO. Changes in the tropical convection, in both the equatorial Pacific and Atlantic basins, are able to trigger extratropical atmospheric teleconnections with a potential impact on midlatitudes climate. The role of the equatorial Atlantic in triggering the development of Pacific ENSO events is, thus, crucial for the correct prediction of ENSO and its impacts. The present work analyses the stationarity of this relationship finding how it is not stationary and it is statistically related to the ocean mean state in which the Atlantic Multidecadal Oscillation plays a key role. Also, the reliability of CMIP coupled simulations is analysed.