



Dynamics associated to different Atlantic Niño configurations

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The Equatorial Mode or Atlantic Niño is the leading mode of the tropical Atlantic interannual variability. The positive phase of this mode is characterized by anomalous positive SST anomalies in the eastern equatorial Atlantic during summer months, associated with a weakening of the trades in the western side of the basin. Recent studies have demonstrated that the Atlantic Niños (Niñas) are connected to their Pacific counterpart, ENSO phenomenon, in some periods of time. In particular, the Atlantic Niños-Pacific Niñas (and vice versa) appears as the leading covariability mode of the tropical Atlantic and Pacific interannual variability under negative phases of the Atlantic Multidecadal Oscillation. During those decades, the Atlantic Niños able to impact on the Pacific show a wide-basin warming contrasting to the equatorial warming flanked by north and south tropical cooling observed in positive AMO phases. It has been demonstrated that during negative AMO phases two different inter-annual SST modes resembling the Atlantic Niño pattern appear. Here we analyse the origin and development of these two modes, including associated teleconnections in relation to their forcings and impacts, for instance the connection with ENSO and the role of the Subtropical Highs. An ocean heat budget of the modes and the role of kelvin and Rossby waves is also investigated