Geophysical Research Abstracts
Vol. 15, EGU2013-894, 2013
EGU General Assembly 2013

The role of the subtropical and equatorial forcing in the development of the Atlantic Niños after 1970s.

Marta Martín-Rey (1,2), Belén Rodríguez-Fonseca (1,2), Irene Polo (3), and Alban Lazar (4)

(1) Universidad Complutense, Madrid, Spain (mmartindelrey@fis.ucm.es), (2) Intituto de Geociencias, CSIC-UCM, Facultad de Ciencias Físicas, 28040, Madrid, Spain, (3) NCAS-Climate, University of Reading, Reading, United Kingdom, (4) LOCEAN-IPSL, France

Previous works have reported a connection betweeen Atlantic and Pacific Ninos ocurring since 1970s. Accordingly, an Atlantic Niño (Nina) seems to favor the development of a Pacific la Niña (Nino) next winter, through an alteration of the Walker circulation.

These Atlantic Ninos ocurring since 1970s are characterized by anomalous SSTs covering the entire tropical band during the summer months, which differs from a more equatorial warming pattern observed in previous decades. The development of this striking spatial pattern of the Atlantic Ninos after 70s seems to be associated with an alteration of both North and South Subtropical Highs during the previous Winter-spring.

The aim of the present work is to understand the role played by subtropical forcing respect to the equatorial one in the development of these interanual events. For this purpose, a set of experiments with the ocean NEMO model have been performed, considering the wind pattern for the period 1970-2000 as the external forcing. The contribution of the winds in NTA, STA and equatorial band, as well as, the oceanic processes at work, are analyzed for both Atlantic Niños and Niñas phenomena. These results are compared with the observations.