



On the influence of Subtropical Highs in the development of Atlantic Niños

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The Atlantic Niño is the leading mode of interannual Tropical Atlantic Sea Surface Temperature (SST) variability during boreal summer. It has been shown that changes in Sta Helena High play a role in the development of this mode, in such a way that anomalous geostrophic winds associated with a weakening of this High pressure System are observed previously to the Atlantic Niño evolution. Nevertheless, recent observational studies also suggest that the Azores High could contribute to its development, although the processes involved are still unknown.

The objective of the present work is to understand the contribution of both Subtropical Highs in the development of the Atlantic Niño after the 1970s. To this aim, a set of sensitive experiments with the NEMO OGCM are performed. Firstly, an interannual simulation is performed considering observational winds for the period 1991-1999, which is a representative decade of increased SST variability over the equatorial Atlantic. The observed Atlantic Niño events are well reproduced. In particular, we present an analysis of the mechanisms at work in the development of the Atlantic Niño/Nina case study. Results suggest that off-equatorial oceanic processes are playing a role in the growth of the SST anomalies.