Geophysical Research Abstracts
Vol. 15, EGU2013-5234, 2013
EGU General Assembly 2013

Development of SST errors in the southern tropical Atlantic in CMIP5 decadal hindcasts

Thomas Toniazzo and Steven Woolnough
University of Reading, Meteorology, Reading, United Kingdom (t.toniazzo@reading.ac.uk)

SST errors in the tropical Atlantic are large and systematic in currentcoupled general-circulation models. We analyse the growth of these errors in the region of the south-eastern tropical Atlantic in initialised decadal hindcasts integrations for three of the models participating in the Coupled Model Inter-comparison Project 5 (CMIP5). A variety of causes for the initial bias development are identified, but a crucial involvement is found, in all cases considered, of ocean-atmosphere coupling for their maintenance. These involve an oceanic "bridge" between the Equator and the Benguela-Angola coastal seas which communicates sub-surface ocean anomalies and constitutes a coupling between SSTs in the south-eastern tropical Atlantic and the winds over the Equator. The resulting coupling between SSTs, winds and precipitation represents a positive feedback for warm SST errors in the south-eastern tropical Atlantic.