

Comparative analysis between CCSM4.0 and CCSM3.0 representativeness in relation to SODA reanalysis

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This study has the purpose to evaluate the differences between global ocean and individual basin surface variables between CCSM4 and CCSM3 relative to the 20th Century. In other words, results obtained from the 20c3m experiment with the model CCSM4.0 (Community Climate System Model 4.0) is compared with the results from its predecessor CCSM3.0. As a reference data the SODA2.2.4 reanalysis was used. The period of this study is from 1900 to 1999, the frequency of data used is monthly (averages) and the parameters considered are: sea surface temperature, sea surface salinity, sea surface height, zonal and meridional surface currents. The results are presented in the form of Taylor Diagrams (Taylor 2001). For the South Atlantic Ocean in particular there seems to be a slight improvement of the SST representation (relative to SODA). However, there is a considerable depreciation on the representation quality on all others variables in relation to the SODA2.2.4 reanalysis. The results for the individual basins vary among them. Investigation of the subsurface is underway. Taylor, K.E.: Summarizing multiple aspects of model performance in a single diagram. J. Geophys. Res., 106, 7183-7192, 2001