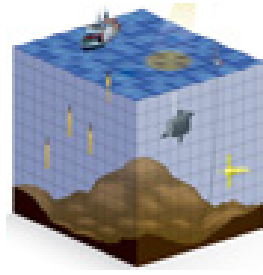


Joint ECMWF/OceanPredict workshop on Advances in Ocean Data Assimilation



Contribution ID: 43

Type: **Poster presentation**

Skills and biases of an 11-yr reanalysis produced by the HYCOM+REMO ocean data assimilation system (RODAS) in the South Atlantic

An 11-yr reanalysis (2008-2018) was produced with the HYCOM+REMO ocean data assimilation system (RODAS) in the South Atlantic. RODAS is based on the ensemble optimal interpolation method. It assimilated data from OSTIA sea surface temperature (SST), AVISO gridded sea surface height (SSH) and 61,031 vertical profiles of temperature and salinity (T/S) from Argo and XBTs, in addition to data from 8 PIRATA moorings each 3 days. The HYCOM+RODAS system was implemented with 1/12 degree of horizontal resolution and 32 vertical layers in the regional domain 45S-10N, 68W-18W. The system was forced by 6-hourly atmospheric reanalysis from CFSR NCEP/NOAA. Lateral boundary conditions were imposed by another HYCOM+RODAS run that covered the whole Atlantic, in which only mean dynamic topography was assimilated. Considering each 3-day period after each assimilation, the SST root mean squared deviation (RMSD) was 0.51C, SSH correlation with AVISO was 0.63, T and S RMSDs in the top 2000 m with respect to Argo data were 0.97C and 0.15 psu. These values are comparable to the HYCOM+NCODA reanalysis (0.49C, 0.60, 0.64C and 0.14 psu, respectively), and the GLORYS/Mercator reanalysis (0.60C, 0.78, 0.46C and 0.08 psu, respectively). The largest HYCOM+RODAS biases were attained in the Brazil-Malvinas Confluence region for SST (1.5C), in the crest of the South Atlantic gyre (10 cm) and in the thermocline region (2C and 0.20 psu). The results show the reanalysis is suitable to investigate ocean processes, particularly in the superior ocean in which circulation intraseasonal variability was well captured when compared to in situ data.

Which theme does your abstract refer to?

Ocean and coupled reanalysis

Primary author: TANAJURA, Clemente (Federal University of Bahia (UFBA))

Co-author: BITENCOURT COSTA, Filipe

Presenter: TANAJURA, Clemente (Federal University of Bahia (UFBA))

Session Classification: Poster session 1

Track Classification: Ocean and coupled reanalysis