

ACG032-P03

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Ocean reanalysis dataset produced with the ocean data assimilation system of the Meteorological Research Institute

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In the Meteorological Research Institute (MRI), we have been developing an ocean data assimilation system, named the Multivariate Ocean Variational Estimation System/ MRI Community Ocean Model (MOVE/MRI.COM). It is composed of the ocean general circulation model developed in MRI (MRI.COM), and the Three-dimensional Variational (3DVAR) analysis scheme using coupled temperature-salinity Empirical Orthogonal Function (EOF) modal decomposition. MOVE/MRI.COM has three variations with different resolutions and horizontal domains. MOVE-G has a nearly global domain (75S-75N) and the horizontal resolution of 1 degree with meridional equatorial refinement to 0.3 degree within 5S-5N. MOVE-NP has a domain extending over the North Pacific (15S-75N, 100E-160W) and the horizontal resolution of 0.5 degree. Another variation is MOVE-WNP which has the domain extending over the western North Pacific around Japan (15-65N, 117E-160W) and the resolution of 0.1 degree. These systems are operationally employed in the Japan Meteorological Agency (JMA) for the monitoring and forecasting of the ocean state around Japan and the equatorial Pacific associated with the El Nino phenomenon, as well as the seasonal forecasting.

We implement ocean reanalysis experiments repeatedly using different variations of MOVE/MRI.COM with different configurations, and the several results of the experiments are saved as reanalysis datasets for use of oceanic and climate studies. For example, MOVE-G RA07 is a result of the reanalysis experiment in the period of 1950-2009 using MOVE-G. This dataset has been employed for analyses of the ocean heat content, salinity variability, the current fields, etc. We also has a high resolution reanalysis dataset with the resolution of 0.1 degree produced with MOVE-WNP, and used for the analyses of the Kuroshio variability etc.

Keywords: Ocean Dataset, Ocean Reanalysis, Data Assimilation, 3DVAR