Evaluation of Marine Heatwaves Forecast in GEOS-S2S Version 3 System

Marine Heatwaves (MHWs) are extreme events that cause stress to corals and other marine ecosystems and are deadly for marine life. In addition, they impact weather phenomena such as atmospheric rivers and tropical cyclone development. Therefore, understanding and forecasting MHWs will benefit society and assist communities to anticipate the effects of marine heatwaves. The Global Modeling and Assimilation Office (GMAO) has developed a new version of the Goddard Earth Observing System (GEOS) Subseasonal to Seasonal prediction (S2S) system (GEOS-S2S-3). This new version of the coupled atmosphere-ocean data assimilation system (GiOCEAN) runs with upgrades of a higher oceanic resolution, assimilation of satellite sea surface salinity, new ensemble forecast strategy, and “dual ocean” replay to the GEOS Atmospheric Reanalysis. The new “weakly” coupled reanalysis is designed to provide dynamically consistent air/sea coupled model results for a wide range of scientific studies. In addition, this coupled system will

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