

Philippine Sea Surface Temperature Cycle from a Three-Dimensional Ocean Model

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ABSTRACT

Sea surface temperature (SST) variability is immensely crucial in the energy exchange between the atmosphere and ocean. However, the complexity of Philippine sea dynamics due to the interaction of diverse atmospheric and oceanographic processes presents challenges in modelling the region's sea circulation and variability including SST. Using DELFT3D-FLOW, a hydrodynamic and transport modelling system, the study aims to simulate seasonal SST cycle with surface, atmospheric, and tidal forcing at the open boundaries. The simulations will be forced by meteorological data from European Center for Medium range Weather Forecasting ERA-40 and ERA5 reanalysis datasets and TOPEX/Poseidon Global Inverse model tidal constituents and the results will be validated using remotely-sensed SST dataset and cruise observations. Particular emphasis will be given on the ability of model to simulate SST along straits and upwelling regions.

Keywords: *SST, Temperature, Hydrodynamic Model, Delft3D-FLOW, Philippine Seas*