



## **Evaluation of an operational ocean configuration at 1/12° on the Indonesian seas: Physical/Biogeochemical coupling**

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In the framework of the INDES0 (Infrastructure Development of Space Oceanography) project, an operational ocean forecasting center has been developed to monitor the state of the Indonesian seas in terms of circulation, biogeochemistry and fisheries. The forecasting system combines a suite of numerical models connecting physical and biogeochemical parameters to population dynamics of large marine predators. Developed by Mercator Ocean and CLS, the physical/biogeochemical coupled component (INDO12BIO configuration) covers a large region extending from the western Pacific Ocean to the Eastern Indian Ocean at 1/12° resolution. The OPA/NEMO physical ocean model and the PISCES biogeochemical model are coupled in mode “on-line” without degradation in space and time. The operational global ocean forecasting system (1/4°) operated by Mercator Ocean provides the physical forcing while climatological open boundary conditions are prescribed for the biogeochemistry.

This poster describes the performances of the INDO12BIO configuration. They are assessed by the evaluation of a reference hindcast simulation covering the last 8 years (2007-2014). Confrontations to satellite, in-situ and climatological observations are commented. Diagnostics are performed on chlorophyll-a, primary production, nutrients and oxygen.

The model catches the main characteristics of the biogeochemical tracers in space and time. The seasonal cycle of chlorophyll-a and primary production is in phase with satellite-based products. The northern and southern parts of the archipelago present a distinct seasonal cycle, with higher chlorophyll biomass and production rates in the southern (northern) part during SE (NW) monsoon. Nutrient and oxygen concentrations are correctly reproduced in terms of horizontal and vertical distributions. The biogeochemical content of water masses entering in the archipelago as well as the water mass transformation across the archipelago conserves realistic vertical distribution in Banda sea and at the exit of the archipelago.