

New Developments of the operational biogeochemical model component in the Copernicus Marine Service (CMEMS) for the Baltic Sea

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The Copernicus Marine Service is providing operational data products for the European Seas. Within the CMEMS framework, the BAL MFC is developing and delivering model data products for the Baltic Sea. With the latest update in December 2020, the products of a new model system for the near-real time in the Baltic Sea area became operationally available in the CMEMS catalogue. The biogeochemical component of the model system is ERGOM, which was coupled to NEMO 4.0 during the current phase of CMEMS. In addition to the large task of coupling NEMO and ERGOM, several new developments were implemented in ERGOM. A carbon cycle was included to be able to answer questions related to increasing anthropogenic CO₂ emissions and ocean acidification. As a result, two new products were added to the catalogue, delivering now gridded pH and pCO₂ data sets. The calculation of Secchi depth and Net Primary Production was added to the model system output, which can be used to monitor water quality for the Marine Strategy Framework Directive. The biogeochemical products are carefully validated within a validation framework that allows a comparison of model results with observational data from different sources. We will present details about the implementation of the new variables and show result from the validation and calibration work.