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Assimilation of optical absorption by phytoplankton functional types into ecosystem model

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As a part of Copernicus Marine Environment Monitoring Service (CMEMS) project Optical data Modelling and Assimilation (OPTIMA) we developed a novel spectrally resolved stand-alone bio-optical module. The module was used together with the Euroepan Shelf Seas Ecosystem Model (ERSEM) to improve representation of bio-geochemistry in the North-West European Shelf (NWES). The ERSEM model using the bio-optical module was reparametrized and validated for NWSE using multiple observational data-sets. Novel observational products for the optical absorption of the four ERSEM phytoplankton functional size classes were assimilated into the model. The re-analysis was subsequently validated using both satellite and in situ data.