Satellite data assimilation into a suspended particulate matter transport model

M. Dobrynin(1), K. Wahle(1) and E. Stanev(1)

(1) Institute for Coastal Research, GKSS Research Center (mikhail.dobrynin@gkss.de)

Suspended particulate matter (SPM) determines the light penetration depth and therefore is an important parameter regulating primary production in the areas where the SPM content is high. We examine SPM dynamics in the North Sea using a fine resolution (1.5' by 2.5') hydrodynamic SPM transport model improved by MERIS satellite data assimilation for the year 2003. The SPM model is based on the ocean circulation model HAMSOM forced by waves calculated on the same grid by the WAM model. The SPM and wave models include atmospheric forcing obtained from the regional atmospheric model REMO. We assimilate MERIS SPM concentrations retrieved using the Case-2 Regional Processor. We investigate the influence of satellite data assimilation on the model results by comparing modeled SPM concentrations to remote and in-situ measurements, as well as to a model run without data assimilation. Our focus is to develop a tool for SPM calculations based on the modeling and data assimilation, which can be used for operational purpose.