

Inter-comparison of ocean colour data products during algal blooms in the North Sea

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The Nansen Environmental and Remote Sensing Centre (NERSC) has since 1998 developed and operated a near real time system for algal bloom monitoring based on ocean colour Earth Observation (EO) satellite data from the Sea-viewing Wide Field of View (SeaWiFS) sensor. The system provides daily information about the abundance of phytoplankton in the North Sea and Skagerrak regions, provided via the web. Several satellite-borne ocean colour EO sensors are presently collecting data on an operational basis, including the Envisat MERIS sensor. This study aims at detecting differences in ocean colour EO sensor performances for ocean monitoring and in particular the study of algal bloom situations. The motivation for the present study is to explore how data from different sensors can be utilized in one system for HAB detection and monitoring. Ocean products from the MERIS, MODIS/Aqua, and SeaWiFS sensors have been processed and inter-compared for data acquired during the development of an early spring algal bloom in 2004 in the North Sea region. The study assesses the comparability of these OC sensors in the cases of bloom and non-bloom situations. Furthermore, ground-truth observations of Chlorophyll a concentrations and algae species composition have been used for evaluating the validity of the ocean colour products.