



## **The influence of fronts and eddies on the primary productivity: preliminary results**

**C. Hansen** (1), A. Samuelsen (1), N. Winther (1)

(1) Mohn-Sverdrup Center/Nansen Environmental and Remote Sensing Center

The exchange of watermasses over a front, such as the front between the Norwegian Coastal Current and the Norwegian Atlantic Current, is important for the primary productivity in the area. The interaction between the relatively fresh Norwegian Coastal Current and the saltier, warmer Norwegian Atlantic Current can create a shallow mixed layer, which gives good conditions for an early phytoplankton spring bloom. Eddies are frequently formed along the front, some of which detach from the front and propagate out into the Atlantic watermasses. In satellite images, some of these eddies are easily recognized because of their high concentration of Chlorophyll-a, but little is known about their influence on primary productivity. The physical ocean model HYCOM (HYbrid Coordinate Ocean Model) has been coupled with the primary productivity model NORWECOM (NORWegian ECOlogical Model system). To study the mesoscale activity and its influence on the biology along the Norwegian coast, a high resolution system has been set up in this area. NORWECOM was originally developed for the North Sea. The ecosystem model contains two phytoplankton classes, diatoms and flagellates, as these are the two most abundant phytoplankton groups in the Norwegian Sea. It also includes nitrate, ammonia, phosphate, silicate, detritus and inorganic suspended particulate matter. Preliminary results from this model experiment, focusing on the influence of eddy- and frontal dynamics on the primary productivity, is presented.