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Physical control of the Faroe shelf spring bloom

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The marine ecosystem on the Faroe shelf has been shown to be tightly controlled by the primary production during the spring bloom with sandeel, economically important demersal fish, as well as seabirds clearly linked to the intensity of the spring bloom. The spring bloom has been monitored since the early 1990ies and is found to vary greatly from one year to another. A complete explanation for these variations has not been demonstrated but it has been suggested that physical processes on the shelf and exchange with the off shelf waters, are the main controlling mechanism of the spring bloom.

In order to investigate this hypothesis, a high resolution ($\sim$ 1 km) physical 3D ocean model (HYCOM) has been set up and a hindcast for the period from 2000 to 2009 run. The results from this hindcast are compared with observations of temperature, salinity and currents on the shelf and the ability of the model to explain the observed spring bloom variations is discussed.