



Effects of strong wind forcing on ocean currents around Iceland

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Ocean currents around Iceland are simulated with the ocean current model MOM (Modular Ocean Model). Experiments are carried out where the flow is forced by strong and steady winds during a 10 day period. The simulations reveal considerable impacts of such events on the currents and the temperature of the coastal waters. The simulated impact of the wind events on the ocean can be explained by advection, vertical mixing and the impact of the bathymetry on the currents.

Simulations with different temporal resolution of the atmospheric forcing indicate that periods of strong winds may be of relatively great importance. The largest impact of increasing the resolution from monthly mean values to daily mean values is found in the waters to the north and northwest of Iceland, where the ocean is much warmer in the case of daily variation of the atmosphere. The results underline the importance of having high temporal resolution atmospheric data for correctly reproducing the conditions in the ocean. This accounts in particular for the oceanic temperatures north of Iceland which influences fishing stocks that are of economic importance.