



## **Predicting wind-driven ocean currents at high latitudes**

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We present a simple linear model to predict the depth-averaged currents in the Norwegian Seas and Arctic Ocean. The model requires only the observed wind stress and the bottom topography. In comparisons with altimeter-derived sea surface height measurements, the model achieves correlation coefficients in the range 0.75-0.85. The predicted velocities also agree well with fields derived from a full primitive equation model.

Interestingly, the observations suggest that there is a preference in the sign of the circulation in the gyres, with the flow being more often cyclonic than anticyclonic. Such an asymmetry was also observed by one of the authors in laboratory experiments. We discuss possible reasons for this asymmetry, as well as its effect on the current predictions.