



The Effect of Gale Force Winds on the Ice/Ocean Surface in the Vicinity of Northern Greenland.

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Using a relatively high resolution atmospheric reforecast dataset we present a climatology of the winds in regions over Fram Strait, Smith Sound and north of Ellesmere Island from 2002–2010 and examine the impact of these GFWEs using an eddy permitting configuration of the coupled ocean/sea-ice NEMO model. In these regions wind speeds over the ocean episodically reached gale force intensity (17 m/s) or higher. We show that these events occurred most frequently in the wintertime and can alter the exchange of heat between the atmosphere and ocean, deepen the mixed layer, influence freshwater and volume transports out of the Arctic and lead to ice formation, convergence and divergence.