Geophysical Research Abstracts,
Vol. 11, EGU2009-11486, 2009
EGU General Assembly 2009
© Author(s) 2009

Greenland, the sea ice and wind extremes

B. Hagen (1), H. Ólafsson (2,3), A.D. Sandvik (4), and B. Tveita (5)

(1) Norwegian Meteorological Institute (VpV), Bergen, Norway, (2) University of Iceland and the Icelandic Meteorological Office, (3) Bergen School of Meteorology, Geophysical Institute, University of Bergen, Norway, (4) Institute for Marine Research, Bergen, Norway, (5) Storm Weather Centre, Bergen, Norway

Cases of most extreme winds in the QuikSCAT data for the Nordic Seas are explored. A majority of such cases occurs in northerly winds east of the east coast of Greenland, indicating a strong influence of Greenland on the generation of the extremes. These Greenland windstorms are all characterized by a strong negative vertical windshear, a deformation of the surface cyclone and strong low-level temperature gradients.
The extreme winds are systematically underestimated by a NWP system and they are not very sensitive to horizontal resolution in the range of 3 to 27 km.

In a future climate, the sea ice is expected to retreat and tests are performed to investigate how sensitive the wind extremes are to the sea ice east of Greenland. The results indicate a substantial impact of the sea icea on wind speed and also on the location of the wind maxima.