



Lidar-observations and high-resolution simulations of low level jets to the east of S-Greenland

A. Dörnbrack (1), R. Busen (1), S. Rahm (1), O. Reitebuch (1), R. Simmet (1), M. Weissmann (1) and H. Ólafsson (2)

(1) Institut für Physik der Atmosphäre, DLR, Germany and (2) University of Iceland, Icelandic Meteorological Office and Institute for Meteorological Research

During a case of low pressure to the west of Iceland, profiles of wind between Iceland and Greenland were observed with an airborne lidar. The observations reveal the vertical structure of the Greenland tip jet and they also show a second jet further to the north. The winds are reproduced in high-resolution simulations, and the northernmost jet appears as an extension of a barrier jet along the east coast of Greenland. The origin of the two jets is thus dynamically different, but they are both sufficiently large to be to some extent geostrophically balanced. Further observations of local jets in the vicinity of Greenland and the sea-ice edge are planned during the International Polar Year