Simulations over Greenland with the LM and the Snow Model SNOWPACK

H. Hebbinghaus (1), G. Heinemann (2), C. Drüe (3)

(1) Meteorological Institute, University Bonn (hebbinghaus@uni-bonn.de), (2) Meteorological Institute, University Bonn (gheinemann@uni-bonn.de), (3) Institute for meteorology and climatology, University Hannover (clemens@uni-bonn.de)

The interactions between atmosphere and snowpack are of importance for modeling the boundary layer. To study the interactions, the non-hydrostatic Modell LM (version 3.5) from the German Weather Service DWD is applied for simulations of Greenland, using a vertical resolution of 8km, leading to 180x240 grid points, and 35 horizontal grid points with 20 of them below 500m height. Simulation time is July 3rd 2002 till July 12th 2002. GME-results are used as boundary data. Since the direct use of the surface module TERRA leads to unrealistic ground temperatures, some modifications are done to the modelling of snow temperature in the surface module.

The modelling results are compared with measurements from the PARCA-Network and ground measurements at Summit during the simulation period. The LM-results are used to drive the 1-dimensional snow model SNOWPACK from the Swiss Snow and Avalanche Institute SLF in Davos.