320

SIMULATION OF PRECIPITATION IN DRONNING MAUD LAND

U. Wacker, H. Ries, U. Schättler

[1]Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany, [2]Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany, [3]Deutscher Wetterdienst, Offenbach, Germany

The high resolution operational weather forecast model 'Lokal-Modell' (LM) of the German Weather Service has recently been implemented for Antarctica, and numerical studies are performed to investigate origin and amount of precipitation in Dronning Maud Land and adjacent coastal and marine regions for selected weather situations.

A case study is presented with emphasis placed on the distribution of precipitation for a weather situation which is dominated by the passage of a front. The horizontal variability reflects strongly the synoptic and topographic forcing, as expected. On the plateau, where these forcings become weak, we do not find a monotonous decrease in precipitation. From simulations using an idealised flow configuration with a topography of a plateau, it turns out that gravity waves are excited. These waves trigger secondary precipitation cells on the plateau. Hence, gravity waves may contribute to the spatial variability of precipitation on the plateau.