



Atmospheric temperature structure (0-120 km) at Rothera (Antarctica, 67°S, 68°W): Seasonal Variation

J.C. Diettrich (1), P.J. Espy (1), G.J. Nott (1), X. Chu (2), J.D. Shanklin (1)

(1) British Antarctic Survey, Cambridge, UK, (2) University of Illinois, Urbana-Champaign, Illinois, USA

An Fe-Boltzmann temperature lidar has been deployed and operated between December 2002 and March 2005 at Rothera (Antarctica, 67°S, 68°W). Temperature profiles could be determined for the Rayleigh range (from 30 to about 70 km) and the Iron layer range (75 up to 120 km). The lidar data are combined with balloon data (from ground to about 25 km), giving temperature profiles between 0 and 120 km. Seasonal variations of the temperature structure above Rothera will be presented and compared with results from a previous summer rocket campaign. Differences between the observations and the MSIS-00 model will be assessed in terms of changes to the dynamic forcing of the mesopause region.