

D18  
96

N85-20468

VHF-RADAR OBSERVATIONS IN THE STRATOSPHERE AND MESOSPHERE  
DURING A STRATOSPHERIC WARMING

R. Ruster, P. Czechowsky and G. Schmidt

Max Planck Institute of Aeronomy  
3411 Katlenburg-Lindau, FRG

K. Labitzke

Meteorological Institute  
Free University  
1000 Berlin 33, FRG

The SOUSY-VHF-Radar (lat. 51°N, long. 10°E) was used to carry out measurements during minor and a major stratospheric warming in February and March 1980, respectively. Echoes have been received from the stratosphere up to an altitude of about 30 km continuously during day and night, whereas echoes from the mesosphere were restricted to the daytime and occurred sporadically at different heights within the altitude range from 60 km to 90 km. The three-dimensional velocity vector has been derived from Doppler measurements made in three different antenna beam directions with a height resolution of 1.5 km. In particular the results obtained during disturbed conditions show the change of the zonal winds at mesospheric heights from westerly to easterly. A spectral analysis reveals a diurnal and a weaker semidiurnal tide of the zonal wind component.

This paper has been published in full in: *J. Atmos. Terr. Phys.*, 45, 161. (1983).