

Preliminary ground-based observed data of the ozone distribution from a surface of the Earth up to mesosphere in Arctic (Kola Peninsula) during campaign SOLVE-2 in the winter 2002/2003.

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SOLVE-2 (The SAGE III Ozone Loss and Validation Experiment) is a measurement campaign designed to examine the processes controlling ozone levels at mid- to high latitudes. Measurements will be made in the Arctic high-latitude region in winter using the NASA DC-8 aircraft, as well as balloon platforms and ground-based instruments. The mission will also acquire correlative data needed to validate the Stratospheric Aerosol and Gas Experiment (SAGE) III satellite measurements that will be used to quantitatively assess high-latitude ozone loss.

The results of simultaneous ground-based microwave measurements of stratospheric ozone at altitudes from 20 to 60 km and surface ozone in polar latitude during winter 2002/2003 (SOLVE-2) are presented. These observations were executed during from middle of November 2002 till the end of February 2003 at the Kola Peninsula. The microwave observations of ozone were conducted in Apatity (67°N, 35°E) with a radiometer measuring the O₃ emission line at 101.7 GHz, and measuring of surface ozone at the station Lovozero (68°N, 35°E) by the Dasibi-1008AH. The variability of the ozone vertical profiles is compared with ozone sondes (in situ) made from Ny Alesund (79N, 11E) and Sodankyla (67N, 27E). Besides, variations of the ozone distribution are compared to the Earth Probe, TOMS and the POAM-III satellite data.

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