

Atmospheric ozone and water vapor observations: remote sensing and in situ data comparisons

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Confidence in satellite remote sensing observations is based on independent validation measurements. In Sodankylä, northern Finland, we have performed a series of measurements by balloon borne instruments that have been timed to satellite overpasses. Here we first focus on the water vapor data in the lower stratosphere and upper troposphere, and secondly on the ozone data in the lower stratosphere. The data used in this study have been obtained by satellite borne remote sensing measurements and by balloon borne in situ instruments. The in situ ozone measurements were obtained by the electrochemical concentration cell ozonesondes. Accurate measurements of water vapor were made by research grade hygrometers. In addition we have flown the newest versions of operational radiosondes in the same payload with research instruments. This has provided an opportunity to characterize the accuracy of radiosonde humidity measurements in the troposphere.