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Using GOME, SCIAMACHY and Sonde Data to Observe the Transport of Tropospheric Ozone Over the Tropics

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The Global Ozone Monitoring Experiment (GOME) launched in April 1995 measures the sunlight back scattered by the surface in nadir viewing mode (240-790 nm) to detect O3, NO2, BrO, OClO, HCHO and SO2. SCIAMACHY (Scanning Imaging Absorption Spectrometer for Atmospheric ChartographY) launched in March 2002 measures sunlight, transmitted, reflected and scattered by the earth atmosphere or surface (240 nm - 2380 nm). SCIAMACHY measurements yield the amounts and distribution of O3, BrO, OClO, ClO, SO2, H2CO, NO2, CO, CO2, CH4, H2O, N2O, p, T, aerosol, radiation, cloud cover and cloud top height in limb as well as nadir mode.

In this study data for the time period of 1998-2008 is used for the determination of tropospheric O3. Comparisons of the results of the retrieval of tropospheric O3 using satellite based data and sonde profiles will be shown for the tropical SHADOZ (Southern Hemisphere Additional Ozonesondes) stations Irene and La Reunion. The main focus of this study will be the analysis of transport processes from Irene or/and Madagascar to La Reunion during biomass burning events.