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## Measurements of total and tropospheric ozone from IASI: comparison with correlative satellite, ground-based and ozonesonde observations

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**Abstract.** In this paper, we present measurements of total and tropospheric ozone, retrieved from infrared radiance spectra recorded by the Infrared Atmospheric Sounding Interferometer (IASI), which was launched on board the MetOp-A European satellite in October 2006. We compare IASI total ozone columns to Global Ozone Monitoring Experiment-2 (GOME-2) observations and ground-based measurements from the Dobson and Brewer network for one full year of observations (2008). The IASI total ozone columns are shown to be in good agreement with both GOME-2 and ground-based data, with correlation coefficients of about 0.9 and 0.85, respectively. On average, IASI ozone retrievals exhibit a positive bias of about 9 DU (3.3%) compared to both GOME-2 and ground-based measurements. In addition to total ozone columns, the good spectral resolution of IASI enables the retrieval of tropospheric ozone concentrations. Comparisons of IASI tropospheric columns to 490 collocated ozone soundings available from several stations around the globe have been performed for the period of June 2007– August 2008. IASI tropospheric ozone columns compare well with sonde observations, with correlation coefficients of 0.95 and 0.77 for the [surface– 6 km] and [surface– 12 km] partial columns, respectively. IASI retrievals tend to overestimate the tropospheric ozone columns in comparison with ozonesonde measurements. Positive average biases of 0.15 DU (1.2%) and 3 DU (11%) are found for the [surface– 6 km] and for the [surface– 12 km] partial columns respectively.

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