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Global and local ozone measurements from the thermal infrared IASI/METOP sounder

C. Scannell (1), A. Boynard (1), C. Clerbaux (1), and P. F. Coheur (2)

(1) UPMC Univ. Paris 06, CNRS UMR8190, LATMOS/IPSL, Paris, France. , (2) Spectroscopie de l'Atmosphère, Service de Chimie Quant. Photophys., ULB, Brussels, Belgium.

The IASI instrument was launched onboard the METOP platform in October 2006. It is a nadir looking Fourier transform spectrometer that probes the Earth's atmosphere in the thermal infrared spectral range, with a spectral resolution of 0.5 cm-1 (apodized). IASI monitors the atmospheric composition at any location two times per day, and measures many of the chemical components which play a key role in the climate system and pollution issues.

We present here the ozone concentrations retrieved from the IASI Level 1 radiance data using two complementary tools. On one hand, a near-real time retrieval algorithm based on neural network techniques allows us to derive global distributions of ozone, total and partial columns. On the other hand, a sophisticated line-by-line radiative transfer and retrieval software is used to measure vertical profiles and local distributions. We discuss the current performances of IASI for monitoring ozone in terms of vertical resolution and accuracy, and validate the global distributions and observed profiles with available ground-based and satellite data.