Geophysical Research Abstracts
Vol. 12, EGU2010-12421, 2010
EGU General Assembly 2010

Comparing IASI and MIPAS ozone profiles: Case studies

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In the frame of the POMODORO French-German project we have compared ozone profiles retrieved from IASI and MIPAS data. IASI is a nadir-viewing Fourier transform spectrometer operating aboard the MetOp platform and MIPAS is a limb-observing Fourier Transform spectrometer operating aboard the ENVISAT satellite. They are both observing in the thermal infrared region; IASI from 645 to 2760 cm^{-1}, MIPAS from 685 to 2410 cm^{-1}. MIPAS data and IASI data are complementary because MIPAS, being a limb sounder, has high altitude resolution, while IASI as a nadir sounder has high horizontal resolution and can probe the troposphere. We compared datasets for different time periods of 2007 and 2008 and different regions of the world. We found reasonable agreement and investigated case studies for which the comparison between IASI and MIPAS helps to understand the transport and the exchange between the troposphere and the stratosphere. We also explored which gain for the tropospheric sounding can be expected by combining IASI and MIPAS.