INFRARED SPECTROSCOPY AND THE MIPAS (MICHELSON INTERFEROMETER FOR PASSIVE ATMOSPHERIC SOUNDING) EXPERIMENT

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The Michelson Interferometer for Passive Atmospheric Sounding (MIPAS) experiment is operating on board the ENVISAT satellite and uses a Fourier-transform spectrometer to acquire for the first time high spectral resolution middle infrared emission limb sounding spectra of the Earth atmosphere from space. The measurement capabilities make it possible to determine every 75 s the vertical profile of several atmospheric trace constituents, during both day and night with an almost full coverage of the globe. In a quasi-operational mode atmospheric vertical profiles of temperature and pressure, as well as of concentrations of O_3, H_2O, CH_4, HNO_3, N_2O, and NO_2, are retrieved in the altitude range from 12 to 68 km. The analysis and interpretation of the limb spectra require good knowledge of the molecular parameters of these species as well as of the interfering species. In this talk, after a brief presentation of the MIPAS instrument and its capabilities, we will describe the spectroscopic line parameters database compiled for the MIPAS experiment and we will give some examples of improvements.