

HCl and HF in the Venus atmosphere from the SOIR instrument on board VEx

A. Mahieux (1), V. Wilquet (1), A.C. Vandaele (1), S. Robert (1), R. Drummond (1), J.L. Bertaux (2,3)

(1) Belgian Institute for Space Aeronomy, 3 av. Circulaire, B-1180 Brussels, Belgium ; (2) LATMOS, 11 Boulevard D'Alembert, 78280 Guyancourt, France ; (3) IPSL, Université UVSQ, 78 Saint-Quentin en Yvelines, 78280 Guyancourt, France.

The SOIR instrument performs solar occultation measurements in the IR region (2.2 - 4.3 μm) at a resolution of 0.12 cm^{-1} , the highest of all instruments on board Venus Express. It combines an echelle spectrometer and an AOTF (Acousto-Optical Tunable Filter) for the order selection.

The wavelength range probed by SOIR allows a detailed chemical inventory of the Venus atmosphere at the terminator in the upper mesosphere and lower thermosphere (70 to 170 km) with an emphasis on vertical distribution of the gases. In particular, measurements of HCl and HF density vertical profiles have been routinely performed, in the 60-110 km altitude range. Using the CO_2 density vertical profiles that are simultaneously retrieved, HCl and HF VMR profiles are obtained.

Time and latitudinal trends are investigated, and robustness of the fitting procedure is investigated.