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Vertical Column Abundances of COF_2 above the Jungfraujoch Station: Update and Consolidation of the Database with Measurements in the ν_4 Band Region

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In 1993, a systematic analysis of two spectral microwindows belonging to the COF_2 ν_1 band (W1, 1951.80–1952.15 cm^{-1}; W2, 1936.22–1936.34 cm^{-1}), was initiated using a large set of very high resolution infrared solar spectra. They were recorded with two Fourier transform spectrometers at the International Scientific Station of the Jungfraujoch, Switzerland. The total vertical column abundances of COF_2 determined in this way were gathered in a rather complete database covering the 1985–1995 period, which was presented at the ASA 96 Colloquium [1–2].

Subsequently, the database has been regularly updated, and consolidated. The acquisition of a new detector (Hg MnTe) has allowed to obtain much higher quality spectra in the region of the ν_4 band of COF_2. An additional spectral microwindow was investigated in this band (W3, 1234.40–1234.55 cm^{-1}), in order to validate the results obtained from the ν_1 band microwindows, and, at the same time, to check the relative consistency between the ν_1 and ν_4 spectroscopic intensities available in the HITRAN database.

The new results and their quality will be presented and discussed.

References

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2. F. Mélen, E. Mahieu, R. Zander, C. P. Rinsland, P. Demoulin, G. Roland, L. Delbouille, and C. Servais, *J. Atmos. Chem.*, 29, 119-134, 1998.