

Interactive comment on “An approach to retrieve information on the carbonyl fluoride (COF₂) vertical distributions above Jungfrauoch by FTIR multi-spectrum multi-window fitting” by P. Duchatelet et al.

Anonymous Referee #1

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The paper is a well rounded examination of the retrievals for COF₂ obtained from Jungfrauoch since 2000. The retrievals are more sophisticated than previous studies and address possible causes for some discrepancies in those earlier studies. The example of vortex intrusion is a clear demonstration of the effectiveness of the retrieval.

A little more detail of the "multi-spectra" approach might be useful, as the reader would not be sure if they are co-adds of the spectra that assume a common airmass or, as I suspect, a fitting that allows each spectrum to have a unique airmass.

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I would like to see a little more detail in the discussion of errors. For example, what specifically are the parameters included in the model parameter errors? What estimate of atmospheric variability was used in the estimation of smoothing error? For the multi-spectra fit, is there allowance that the SZA of each spectrum may have independent errors?

The comparison with models and various features of the models that could contribute to the discrepancies are well discussed. The trend estimates for the period of the current study provides a useful measure of the slowing in fluorine growth in the atmosphere.

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 3167, 2009.

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