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Comment

Interactive comment on “Growth rates of stratospheric HCFC-22” by D. P. Moore and J. J. Remedios

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Received and published: 15 September 2007

1) You quote Kleinert et al for a MIPAS NESR value of 50 nW, but in her paper (Fig.2) she shows values of 20-30nW around 900cm⁻¹. In any case, since you are presumably using apodised spectra an even lower noise value would be appropriate, so overall you seem to be overestimating the impact of instrument noise by about a factor 4.

2) In your Fig.2 error analysis you say in the text (p10522 line 3) that you use 1 sigma climatological errors for the contaminants. But earlier you also say that you use the L2 offline products for the major contaminant species, so why the climatological uncertainty to characterise these errors?

3) Also, in the plot, you seem to have a surprisingly low sensitivity to 1K temperature

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errors (less than 1% above the 200mb surface). Since the Planck function varies by several % per degree K at these wavelengths/temperatures I would have expected at least a similar level of sensitivity to a 1K error, ie several percent.

4) You say that systematic errors are dominated by spectroscopic uncertainties (p10522 line 20) but it is unclear whether this means contamination from other gases, the uncertainties in the spectroscopic database for these contaminant gases or the 3.5% uncertainty in the spectroscopy of HCFC-22 itself. If it's the latter - and this is presumably just a scaling factor applied to the strength of the whole HCFC-22 band - then you would expect this to translate directly into a 3.5% uncertainty in the retrieved VMR values.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 10515, 2007.

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