

Interactive comment on “Seasonality of Peroxyacetyl nitrate (PAN) in the upper troposphere and lower stratosphere using the MIPAS-E instrument” by D. P. Moore and J. J. Remedios

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We thank the referee for their valuable comments which helped improve the paper. One of the main concerns raised in the specific comments was the issue regarding the spectrum of PAN being rather flat (with particular reference to the figure 4). We thank the reviewer for giving us the opportunity to discuss this further. It is true that the spectrum of PAN shown in such a small region looks rather flat. What we have aimed to do to make the residual fit to PAN (and not another “ghost” species) clearer, with the aid of a revised figure 4, is to identify different scenarios at 12 km where

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the retrieved PAN concentrations are 1) close to the mean value for the month and 2) slightly enhanced compared to the mean and 3) moderately enhanced compared to the mean. Rather than restricting the figure to the small range of the optimised microwindow range, we have extended the plot to encompass a broader spectral range (775–795 cm^{-1}), showing the residual fit with/without PAN + continuum retrieval. This also shows more clearly the PAN spectral dependence from the centre to the edge of the band. It should also be noted that we have responded to a similar comment by reviewer 2 and we increase the information given about the retrieval and explicitly state that we perform a joint PAN+continuum fit to the MIPAS-E spectra.

We also agreed with the observation that there are some figures in which the text is either too large or small. We have adjusted the pressure and colour bar labels to be a similar size as the text.

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