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Atmospheric Measurement Techniques Discussions

Interactive comment on "The ground-based MW radiometer OZORAM on Spitsbergen – description and validation of stratospheric and mesospheric O_3-measurements" *by* M. Palm et al.

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As explained in the section 2.4.1 spectral artifacts, baseline features and the tropospheric background has been retrieved simultaneously with the Ozone profile. The reason that no patterns can be observed in Figure 2 of the manuscript is that they have been retrieved and removed from the spectrum. Hence the spectrum is completely modeled from the point of creation in the atmosphere to the spectrometer backend.

Please see Fig. 1 for the original spectrum (blue) and the fitted baseline (green).

The retrieval is done by extending the state vector by parameters describing sinusoidal and polynomial features of the baseline. This is possible by the highly resolved yet

broad spectrum where baseline features can easily be seen and separated from the information stemming from the atmosphere.

Many of the baseline features are orthogonal to the information gained from the ozone emission line. If not, the information loss due to baseline retrieval will show up in the averaging kernels. This can be seen in the rather high lower end of the altitude range in Figure 4 (right side). The reason for this are sinusoidal structures with long wavelengths which need to be retrieved in order to gain sensible results. The origin of this sinusoidal structure is not yet known.

Interactive comment on Atmos. Meas. Tech. Discuss., 3, 1933, 2010.

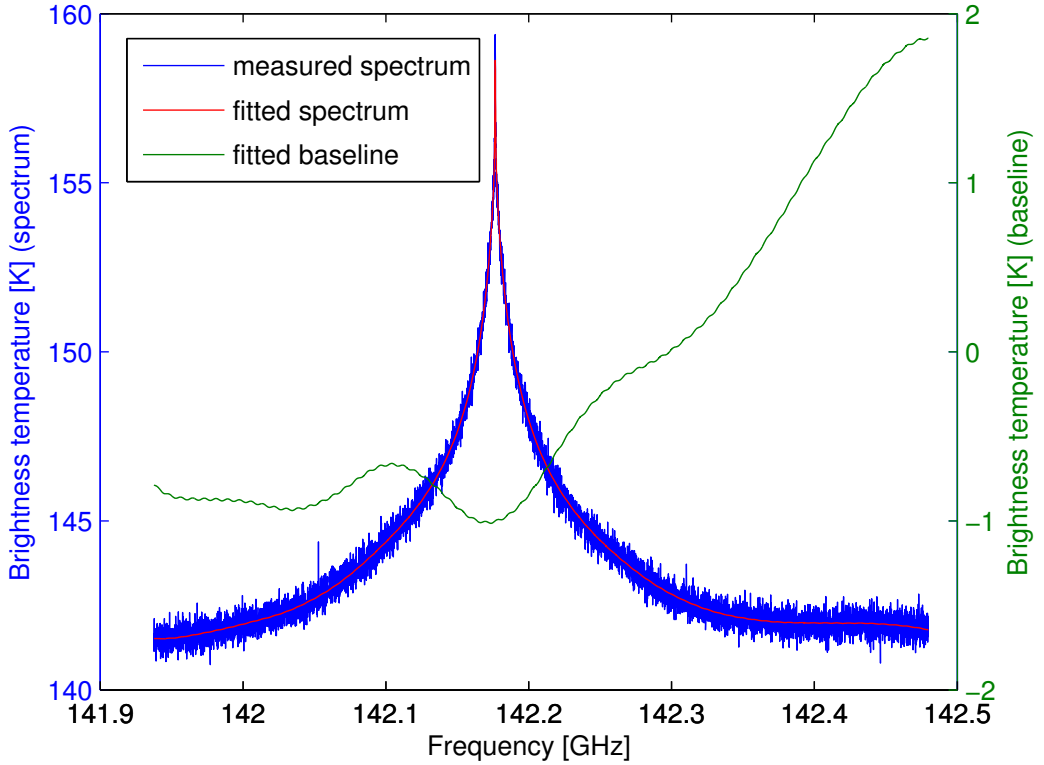

Fig. 1. Original spectrum, fitted spctrum and fitted baseline

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Interactive Comment

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