

## ***Interactive comment on “Cloud information content analysis of multi-angular measurements in the oxygen A-band: application to 3MI and MSPI” by G. Merlin et al.***

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This is a very interesting paper on the information content of the oxygen A-band for the retrieval of cloud properties. A few comments follow:

### GENERAL COMMENT

- sections 4.2 and 4.3

In the paper from Schuessler et al. we show that, in agreement with this paper, in general it is not possible to simultaneously retrieve CTOP and CGT. Furthermore, in the paper from Schuessler et al. we also show that CTOP and COT can be retrieved

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simultaneously from mono-angle (nadir) O<sub>2</sub> A-band measurements. As the main focus of this paper is multi-angular measurements, it will be interesting to know what is the gain in information content for the retrieval of CTOP and COT using multi-angle O<sub>2</sub> A-band measurements.

### DETAIL COMMENTS

- page 4, line 19

Besides SCIAMACHY, the O<sub>2</sub> A band is used for the operational retrieval of cloud properties from the GOME and GOME-2 sensors, see:

Loyola, D., Thomas, W., Livschitz, Y., Ruppert, T., Albert, P., and Hollmann, R.: Cloud Properties Derived From GOME/ERS-2 Backscatter Data for Trace Gas Retrieval., IEEE T. Geoscience and Remote Sensing, 45, 2747–2758, 2007.

- page 15, line 18

A reference to the paper from Schuessler et al. on information content could be added here.

- page 30, line 3

The correct reference is "Schuessler, O., Loyola, D., Doicu, A., and Spurr, R." instead of "Schuessler, O., Rodriguez, D. G. L., Doicu, A., and Spurr, R."

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