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Comment

Interactive comment on "Retrieval methods of effective cloud cover for the GOME instrument: an intercomparison" *by* O. N. E. Tuinder et al.

D. Loyola

Diego.Loyola@dlr.de

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GENERAL COMMENTS

The original version of OCRA should be used in this paper, particularly the method for selecting the scaling and offset factors.

The determination of these factors should be based only on GOME PMD data. This is the preferred method, as it maintains the independence and internal consistency of the OCRA algorithm. In Loyola (2000), section 'Cloud Recognition Results for GOME', it is clearly stated that "The scaling and offset factors are determined using histogram analysis of selected GOME orbits."

The determination of the scaling and offset factors using cloud fraction derived independently from the PMDs is only mentioned as an alternative in Loyola (1999, 2000).

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Furthermore, the selection of ICFA for the determination of OCRA's scaling and offset factors is even more doubtable due to the well known ICFA deficiencies.

In summary, the comparisons presented in the paper should be repeated using the original OCRA algorithm and the conclusion regarding OCRA should be revalidated. I would be pleased to provide all the required original OCRA results.

Reference Loyola D., "Cloud Retrieval for SCIAMACHY", ERS - ENVISAT Symposium, Gothenburg, October 2000.

SPECIFIC COMMENTS

Page 625, Line 29 The OCRA methods was first published in 1997: Loyola D., "Cloud Recognition Using GOME PMD Data", 6th GOME/SCIAMACHY Working Sessions, Brussels, Belgium, 1997.

Page 626, Line 7 The original OCRA algorithm should be use instead of the 'own code based' implementation. See general comments.

Page 633, Equation (21) F_{ci} should be used instead of f_{ci} on the left hand side $f_i(lambda)$ should be use instead of $F_i(lambda)$ on the right hand side

Page 637, Lines 6 to 9 The OCRA cloud-free is indeed the minimum in the three dimensional space RGB, see (19). This three dimensional minimum will not correspond to the lowest reflectance available if each R, G and B components are ranked separately.

Page 637, Lines 10 to 15 The PCRA minimum threshold is smoother than the OCRA cloud-free composite because the PCRA minimum threshold is a synthetic product (it may combine R, G, and B measurements taken independently), while the OCRA cloud-free composite is based on real GOME measurements (the R, G, and B values correspond to one and the same GOME measurement).

Page 637, Lines 19 to 21 The original OCRA algorithm is indeed independent, see general comments.

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Page 641, Lines 25 to 28 The comparison should be repeated using the original OCRA results.

Page 646, Lines 12 to 17 The argumentation followed in this paper is not valid for the original OCRA algorithm. The conclusions on OCRA should be revalidated as they are not based on the original OCRA algorithm. The general comments, and all the comments for Page 637 should be taken into account.

Interactive comment on Atmos. Chem. Phys. Discuss., 2, 623, 2002.