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Comment

Interactive comment on "Elimination of hidden a priori information from remotely sensed profile data" *by* T. von Clarmann and U. Grabowski

Anonymous Referee #2

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The authors of this excellent manuscript propose a new way of presenting retrieved data so that the a priori information in the data product is limited to the a priori information presented by the altitude grid itself. The process of a-priori removal involves a re-regularization and resampling scheme and leads to an information centered representation of the retrieved profiles. It is demonstrated that the combined regularization/resampling scheme leads to a significantly smaller loss of information than simple resampling onto a coarse altitude grid. I completely agree with the author's statement that available metadata like averaging kernels are often not used by data users, and therefore a presentation of data which renders the use of metadata unnecessary is of great benefit to the community.

The paper contains unique results, has no obvious errors and is very well written.

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Several useful applications of the proposed scheme including validation and data assimilation are given and the concept is tested on a sample MIPAS retrieval of ClONO2. Re-regularization matrices are explicitly provided for both a staircase and a triangular representation of retrieved profiles.

I recommend the publication of this excellent manuscript more or less as is. The only thing which would make the manuscript perhaps more complete is to also show a retrieval example for the triangular representation of the re-regularized profile.

Moreover, there are still a few typos etc.:

Section 1, Introduction, page 6724, line 3: "pracise" should be "practise"

Section 1, Introduction, page 6726, line 7: "Institut" should read "Institute"

Section 2, Theor. background, page 6727, line 9: "is" should be "are" to give "All complications arisingĚĚ are omittedĚ.."

Section 2, Theor. background, page 6728, line 10: "..it does.." should be "..they do.."

Section 3, Appr. representation, page 6730, 3rd line from bottom: "a prior" should read "a priori"

Acknowledgements: Shouldn't "BmBF" be "BMBF"?

References, Esler and Waugh paper: "tracer-racer" should read "tracer-tracer"

References, Ray et al. paper: something is odd here before "Dutton". Perhaps a missing last name?

Interactive comment on Atmos. Chem. Phys. Discuss., 6, 6723, 2006.

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