**Atmospheric
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Interactive comment on "Intercomparison of ILAS-II Version 1.4 and Version 2 target parameters with MIPAS-Envisat measurements" *by* A. Griesfeller et al.

Anonymous Referee #2

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The manuscript by Griesfeller et al. contains a comparison of near-coincident profile measurements of a number of climate/chemistry significant gas species measured by both ILAS II and MIPAS. The focus is on the change in the data quality of ILAS II between versions 1.4 and 2. In this regard, the paper contains valuable information. However, the presentation is so terse that it is more like a poster than a manuscript. I think that it is in need of substantial revision before it can live up to its full potential.

Major Point

The paper effective uses MIPAS as the standard against which ILAS version 1.4 and 2 are compared. There is an implicit assumption throughout the manuscript that MIPAS

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data is correct. While this is generally true a brief discussion of the state of the various MIPAS data products is required at the beginning of the section (where is it reliable, what are the know uncertainties and biases). Following this, any discussion of differences between MIPAS and ILAS II can be placed in this context so that we can know when ILAS is unrealistic or flawed rather than have it just asserted by the authors. The paper contains 12 pairs of figures that are quite repetitive. This is inevitable given the nature of the paper but the accompanying text is little more than a rehash of the figures. I can read the figures pretty well myself so much of this text is of little or no value. What would be of more interest is there understanding of why some large differences still exist? What are the authors' views on where the ILAS data is useful and where it is not? When I read a paper of this sort, I expect to come away with a feeling regarding the usefulness of the data sets. Based on this paper, I come away with the general feeling that ILAS Version 2 is better than previous versions but still not fully trustworthy and I would tend to stay away from it. Is this what the authors intend? If not, tell me where it is useful.

Minor Points

The short descriptions in the introduction regarding why the various species are important is not particularly enlightening. I think a discussion of what the authors plan for the paper would be more helpful to readers. Something to the effect that previous validation papers were based on ILAS II Version 1.4. Improvements to the retrieval software have improved the data products and been released as Version 2.0. This paper shows the improvement for these species as shown through comparisons with MIPAS. I don't think you can use ILAS II to validate MIPAS even where MIPAS validation papers do not currently exist.

Results section (9324, 15)

What is the justification for the coincidence criteria? Are the comparisons sensitive to changes in the criteria? The current justification is not adequate. Is there any reason

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to be concerned as to whether the MIPAS results are for daytime or nighttime?

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 9319, 2007.

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