

Interactive comment on “The direct inversion method for data assimilation using isentropic tracer advection” by M. N. Juckes

M. N. Juckes

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Thankyou for your deatiled review.

I was puzzled by the statement in your first paragraph that "sensitivity tests show the predominance of spatial smoothing, while the influence of advection is rather small." The smoothing term is vital to make the problem well-posed and ensure numerical stability, but the resolution sensitivity tests in section 3.7 show that the results are very insensitive to the smoothing.

I am not sure what you would like in the way of mathematical derivations. Minimising a quadratic quantity is hardly original, so I am not sure that a step by step explanation would be appropriate here.

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I would be grateful for any clarification you could offer on these points.

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 8879, 2005.

ACPD

5, S3711–S3712, 2005

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