

Review of the manuscript: Improving the inter-hemispheric gradient of total column atmospheric CO_2 and CH_4 in simulations with the ECMWF semi-Lagrangian atmospheric global model

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The manuscript addresses the important issue of mass conservation of SL schemes in long time rank simulations.

The description of the numerical methods is clear and so is the presentation of the results. The numerical tests are relevant.

The discussion of the results is illuminating and helpful for other researchers.

The paper is excellent according to the principal criteria for acceptance, so my recommendation is that the paper should be accepted as is.