

Interactive comment on “The off-line Lagrangian particle model FLEXPART-NorESM/CAM (V1): model description and comparisons with the on-line NorESM transport scheme and with the reference FLEXPART model” by Massimo Cassiani et al.

Anonymous Referee #2

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This paper documented the details of on-line NorESM to FLEXPART. A comprehensive comparison with an off-line model is presented. Overall it is a very nice paper covering several different aspects of the Lagrangian stochastic dispersion model. One weakness is that it lacks the comparison with measurements or real data. Some actual measurements could shed more light on the model's performance.

For the on-line model, new routines were added for FLEXPART to read in and/or modify the NorESM outputs. It is a bit questionable that such modifications have enough

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originality. However, the model inter-comparison provides some insights into the model and will be helpful for future users. The title and abstract could emphasize more on this part rather than the FLEXPART-NorESM/CAM(V1) itself.

The comparison between Lagrangian and Eulerian models in the first paragraph of the Introduction is somewhat biased. It is better to state that both models have their advantages and disadvantages.

Inline coupling of WRF and HYSPLIT, published in 2015 (shown below), is a very relevant work and could be mentioned here.

Inline Coupling of WRF-HYSPLIT: Model Development and Evaluation Using Tracer Experiments. this link opens in a new window Fong Ngan, Ariel Stein, and Roland Draxler, 2015. J. Appl. Meteor. Climatol., 54, 1162-1176. doi:<http://dx.doi.org/10.1175/JAMC-D-14-0247.1>

Appendix A is probably unnecessary here.

Specifics:

Abstract, "However, for both model versions there was some degradation ...": What degradation means here need to be specified.

Page 8, line 10: Please describe what the emission rate is and how many particles were released here?

Page 16, line 11, (Fig. 2 and 6, right panels): They should be the left panels.

Page 24, line 11: Remove "both" from "and both with the ..."

Page 28, table 1B: Add "Unit" at the top of column 2.

Interactive comment on Geosci. Model Dev. Discuss., doi:10.5194/gmd-2016-86, 2016.

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