

## ***Interactive comment on “A semi-Lagrangian advection scheme for radioactive tracers in a regional spectral model” by E.-C. Chang and K. Yoshimura***

### **Anonymous Referee #3**

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Major comments: Overall the manuscript is clear and the subject is much interesting to the readers of the GMD. I have a couple of questions and suggestions.

1. Computational burden: With the NDSL, is there any extra computational burden? In either case, it's better be described and discussed in the manuscript.
2. What is the order of the accuracy in the NDSL?
3. boundary/buffer zones: What are the minimum numbers of the grid points for these two zones? It is not uncommon to have these in the regional model. In real case, 5 times  $\Delta x$  is used. Is it the minimum recommended by the authors?

4. For idealized experiment, can the authors provide the original advection scheme's error? Also, I'd be interesting to know if one uses a longer time step ( $2 \times \text{delta}_t$ ). However, it is not necessary to perform this extra experiment.

5. I want to confirm that these tracers don't have sink terms as of the current implementation, right?

Finally, I'm wondering if the NDSL will be included in the official release of the RSM.

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Interactive comment on Geosci. Model Dev. Discuss., 8, 4221, 2015.

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