

Reply to RC2: Jim Edwards

Overall an excellent paper. On the issue of scientific reproducibility, that the IFS parallel IO scheme is not publically available makes this aspect of the paper difficult or impossible to reproduce.

Reply: We are grateful for the constructive and insightful comments and we have addressed all the specific issues raised by the reviewer. The original reviewer comments are colored in blue.

It is correct that IFS with the I/O server code is not “publicly” available, but the code is available as described in the “Code and data availability” section. It is also important to mention that in practise exact reproducibility would be impossible to achieve given the dependence on the HPC hardware, software stack and underlying file system.

I only have a couple of suggested corrections:

Page 13, line 14: "where" should be "were"

Reply: This is now corrected.

Page 17, line 28: "of" should be "for"

Reply: This is now corrected.

Page 17, line 29: " will be blocking the model time stepping in doing so" should be "will block progress of the model time step in doing so"

Reply: This is now corrected.

I would also like to point out newer reference documents for the parallelio library:
<https://github.com/NCAR/Parallelio#references>

Reply: We have changed the old reference for these two newer ones:

- Hartnett, E., Edwards, J., "THE PARALLELIO (PIO) C/FORTRAN LIBRARIES FOR SCALABLE HPC PERFORMANCE", 37th Conference on Environmental Information Processing Technologies, American Meteorological Society Annual Meeting, January, 2021. Retrieved on Feb 3, 2021, from [\[https://www.researchgate.net/publication/348169990_THE_PARALLELIO_PIO_CFORTRAN_LIBRARIES_FOR_SCALABLE_HPC_PERFORMANCE\]](https://www.researchgate.net/publication/348169990_THE_PARALLELIO_PIO_CFORTRAN_LIBRARIES_FOR_SCALABLE_HPC_PERFORMANCE).
- Hartnett, E., Edwards, J., "POSTER: THE PARALLELIO (PIO) C/FORTRAN LIBRARIES FOR SCALABLE HPC PERFORMANCE", 37th Conference on Environmental Information Processing Technologies, American Meteorological Society Annual Meeting, January, 2021. Retrieved on Feb 3, 2021, from [\[https://www.researchgate.net/publication/348170136_THE_PARALLELIO_PIO_CFORTRAN_LIBRARIES_FOR_SCALABLE_HPC_PERFORMANCE\]](https://www.researchgate.net/publication/348170136_THE_PARALLELIO_PIO_CFORTRAN_LIBRARIES_FOR_SCALABLE_HPC_PERFORMANCE).