

Interactive comment on “High resolution global climate modelling; the UPSCALE project, a large simulation campaign” by M. S. Mizielinski et al.

Anonymous Referee #1

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This paper summarizes the UPSCALE project’s modeling science aspect concisely. It discusses parallelization, data management, grid point storms, bit-reproducibility, hardware failure and others. The paper would be a good reference for the UPSCALE project. It should be accepted after minor revisions.

1) Suggested revisions:

1) High-resolution global atmospheric simulations started in 2002 with the Japanese Earth Simulator. Some papers have discussed a few issues in the present paper. The reviewer suggests the authors to refer to, for example,

Shingu, S. et al., 2002, Proceedings of Supercomputing 2002

Ohfuchi, W. et al., 2004, J. Earth Simulator, 1, 8–34.

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Mizuta et al., 2006. J. Meteorol. Soc. Jpn, 84, 165-185.

Data handling aspects are briefly discussed in,

Ohfuchi, W. et al., 2003, Proceedings of the Tenth ECMWF Workshop on High Performance Computing, "Realizing Teracomputing", Eds. W. Zwiefelhofer and N. Kreitz, 47–57, World Scientific, Singapore.

Desgagné, M. et al., 2006. Scientific Programming, 14 (1), 13–25.

2) There are some HPC machines' names, such as HECToR and GÉANT, in this paper. Describing a little more, such as the peak speed, and the number of nodes and cores, about each machine should improve readability.

3) Some of the readers may be interested in how fast (flops) the simulations were, and how many cores were used. The reviewer suggests the authors to include the information.

II) Suggested corrections:

1) page 571 line 1

‘Haloes are not permitted to extend across multiple MPI tasks.’ Is it probably “more than two MPI tasks”?

2) page 574 line 14

Williamson (2013) > Williamson (1992)

— END

Interactive comment on Geosci. Model Dev. Discuss., 7, 563, 2014.

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