

Interactive comment on “A distributed computing approach to improve the performance of the Parallel Ocean Program (v2.1)” by B. van Werkhoven et al.

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The hierarchical partitioning scheme described in section 2.3 does not seem novel by itself as the same scheme has been available e.g. in the Zoltan library for almost 10 years [1, 2]. Basically the only difference between e.g. figure 12 of [2] and figure 4 of this work is the number of partitions at each level of the hierarchy (2 and 4 vs. 4 and 3 or 2 respectively) and the algorithm used for partitioning (graph and IRB vs. block type respectively). In Zoltan one can also use any supported partitioning algorithm [3] independently of the algorithms used at other levels of the hierarchy, which does not seem to be possible in the presented scheme.

C1435

In light of the above I suggest the following changes:

In the abstract change

...two innovations to improve the performance of POP are presented.

into

...two methods for improving the performance of POP are presented.

and

The first is a new block partitioning scheme...

into

The first is a block partitioning scheme...

In section 2.3 change

Our new hierarchical load balancing scheme, like the rake and space-filling curve algorithms described earlier, assumes...

into

Our hierarchical load balancing scheme, like the rake and space-filling curve algorithms described earlier, assumes...

In section 6 change:

The new hierarchical load balancing scheme was shown...

into

The hierarchical load balancing scheme was shown...

[1] Zoltan User's Guide, Hierarchical Partitioning (HIER),
http://www.cs.sandia.gov/Zoltan/ug_html/ug_alg_hier.html

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[2] Resource-aware scientific computation on a heterogeneous cluster, Teresco et al., Computing in Science & Engineering, volume 7, issue 2, 2005, <http://dx.doi.org/10.1109/MCSE.2005.38>

[3] Zoltan User's Guide, Load-Balancing Algorithms and Parameters, http://www.cs.sandia.gov/Zoltan/ug_html/ug_alg.html

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