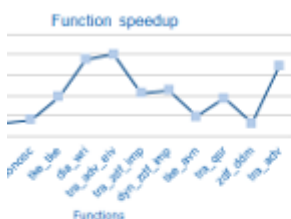


Computational Earth Services

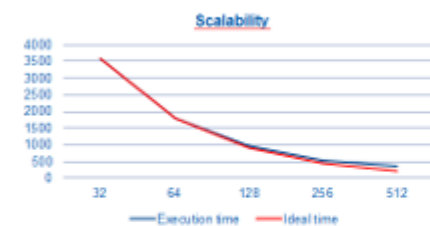


- Speedup evaluation of the functions of interest.
- Speedup evaluated as ratio between the execution time on 512 and 16 processors. The ideal value is 1.

Identifying the function of interest according to its scalability and its execution time. Functions of interest are highlighted in red.

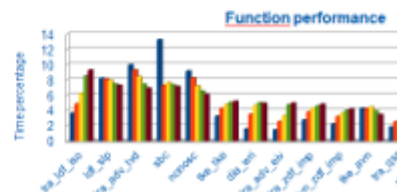


- NEMO-LIM 3.4 version with ORCA025 grid
- ORCA tripolar grid at $\frac{1}{2}^\circ$ horizontal resolution.
- Louvain-la-Neuve sea-ice model v2.



- The number of cores is doubled in each experiment.
- For each experiment the model is executed 5 times.
- The time is computed by calculating the average of these 5 runs.

- Comparison of the average execution time for each routine through the different configurations.
- The table includes the more time consuming routines.



This research line is focused on providing High Performance Computing expertise for the performance, deployment and usage of Earth System Models. A wide range of services are offered to get the best performance possible and overcome computational challenges.

Summary

Knowledge and technology transfer, via tailored services, is essential to bridge the gap between science and its end users in key sectors of society.

This research line will work with an interdisciplinary approach between Computational Earth Sciences group and all research groups to provide Computational Earth Sciences services to different partners. Services can cover a wide range of application: from earth model performance evaluation to earth model software development.

Objectives

- Provide HPC Services such as performance analysis, identification of bottlenecks and application of optimizations
- Provide development of atmospheric research software and contribute to its maintenance and share current in-house developed tools.
- Provide expertise in operational forecast. Deployment models to HPC facilities to perform cutting edge simulations.

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