

## More haste, less waste

October 28 2014



Scientists used a technique to shave time off computationally expensive global climate simulations.

Like a sleek, modern sports car, a climate model has a complex computer engine running underneath. As the demand grows for the models to produce faster simulations with more details, the computer engine takes up more time and space. This computational cost edges some climate questions out of the nation's limited number of supercomputers.

Using a novel computational approach, scientists at DOE's Pacific Northwest National Laboratory found a way to reduce the computational cost dramatically and get the climate answers hundreds of times faster.

The PNNL team calculated the <u>climate simulations</u> from a number of short simulations rather than from a single, multi-year <u>simulation</u>. Using



the Community Atmosphere Model, they initialized the short simulations with different weather conditions so that they were independent runs, carried out simultaneously.

The new strategy provides equally reliable results as the conventional method but reduces the total computational time by a factor of ~15. The turnaround time is also greatly reduced, by a factor of several hundred. The scientists showed that such a dramatic improvement in efficiency will help extend the scope and depth of detail in <u>climate</u> and other investigations.

Provided by Oak Ridge National Laboratory

Citation: More haste, less waste (2014, October 28) retrieved 2 May 2024 from <u>https://phys.org/news/2014-10-haste.html</u>

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