



Experimental high-resolution weather prediction with the NASA finite-volume General Circulation Model

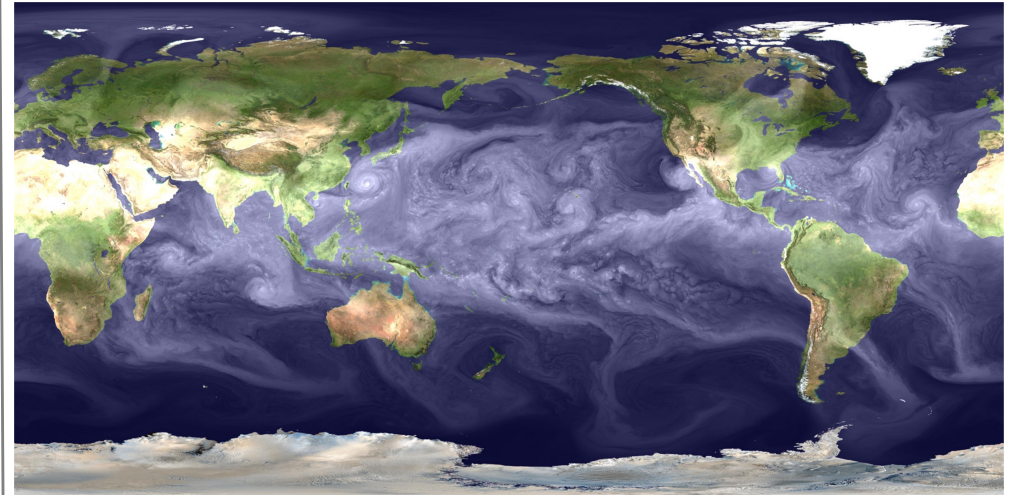
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Objectives of Columbia Usage:

1. Demonstrate the superior computing power of the Columbia supercomputer with high-resolution fvGCM
2. Improve weather and hurricane forecasts with the high-resolution fvGCM

Identify the code to be run on Columbia

- fvGCM



5-day forecasts of total precipitable water initialized at 0000 UTC 1 September 2004 with the 1/12 degree (~9m) fvGCM

Key Milestones:

- Demonstrate remarkable hurricane forecasts in 2004 with one paper chosen by American Geophysical Union as Journal Highlight in February 2005
- Successfully deploy the 1/12 (1/8) degree fvGCM, which becomes the highest resolution GCM, in June (March), 2005
- Demonstrate model's capability of simulating mesoscale vorticities with one paper submitted in September 2005
- Demonstrate the model's performance in simulating track, intensity and near-eye wind distributions of hurricanes Katrina with one paper submitted in November 2005

Scientific Impacts

The mesoscale-resolving fvGCM could

1. resolve both synoptic- and meso- scale weather events, and their scale interactions aimed at improving weather and hurricane forecasts, and
2. study the uncertainties of deep and/or shallow convection parameterizations in a global environment.

CO-Is/Partners:

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