AGU 2012 Presentation

Title: Techniques for visualizing and analyzing very large earth science data using VAPOR.

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Abstract:

Recent trends in supercomputing are leading to a dramatic increase in the size of simulation outputs; however current visualization and analysis capabilities do not easily scale with the increased simulation size. VAPOR is a visualization and analysis package that was designed to enable interactive visualization and analysis of these very large datasets, through the use of a wavelet-based multi-scale data model. VAPOR runs on Mac, Windows and Linux workstations, exploiting the power of modern graphics cards. VAPOR includes several features to facilitate interactive analysis, such as built-in support for Python/NumPy scripting, streamlines, particle tracing and geo-referencing.

In this presentation the capabilities of VAPOR will be described and applied to various simulation results. We shall discuss and demonstrate a number of techniques for handling very large datasets, enabling interactive performance even on tera-scale data. These techniques are applicable to a variety of earth-science models, for example WRF-ARW weather simulation, MHD simulation, and various ocean models.