

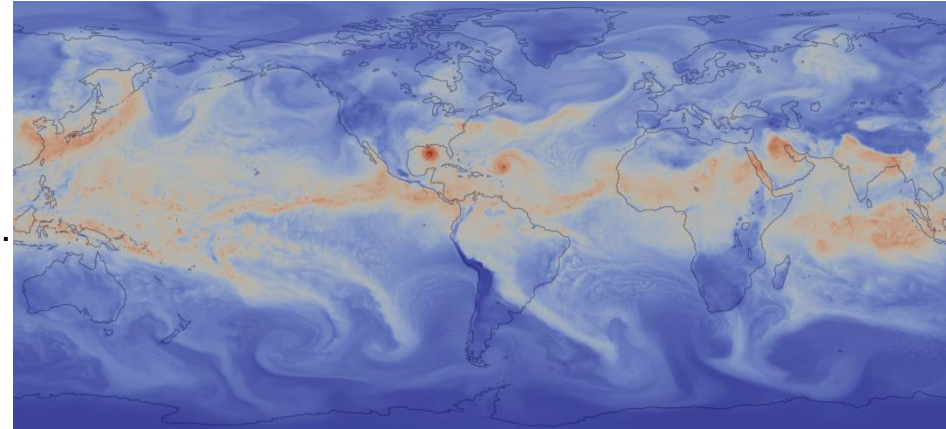
NSF/DOE Community Atmospheric Model: Total Precipitable Water Visualization

Objective

- The Climate Science Computational End Station (CCES) aims to predict future climates by using scenarios of anthropogenic emissions and other changes resulting from U.S. energy policy decisions.

Technology

- NSF/DOE Community Atmosphere Model (CAM5): A 3D global model used to predict atmospheric behavior and its effect on other climate systems.
- Demonstrated a two-year simulation at 1/8 degree global resolution with full prognostic aerosols and monthly varying sea surface temperatures derived from observations.
 - Performed on 64K cores of Intrepid (25 million total core-hours), running at 0.25 simulated years/day
- ParaView generated Animation sifts through 916GB of results data.



Impact

- Visualization clearly shows hurricanes in Atlantic and Pacific.
 - Top right: a Katrina-like hurricane makes landfall while another prepares to travel along the eastern U.S. coast.
 - Direct right: Two typhoons interacting in the Pacific.
- Presented by Warren Washington, INCITE PI, at the 92nd American Meteorological Society Meeting.
 - “We are on the threshold of simulating the global high-resolution atmosphere circulation on decadal and century time scales and this animation demonstrates this new capability.”

