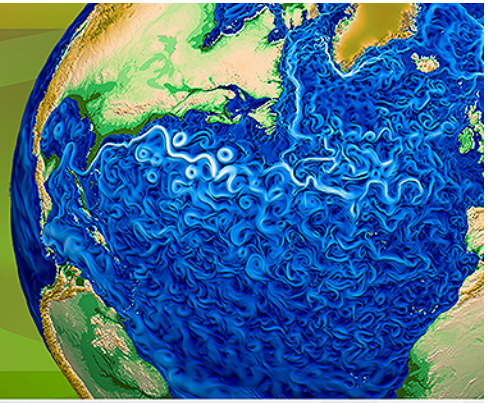
ACME
Accelerated Climate Modeling for Energy



Coupled Simulation Roadmap

U.S. DEPARTMENT OF ENERGY

EPICS

- *v0.1 high resolution baseline - Mark Taylor*
- *v0.1 low resolution baseline – Dave Bader*
- *Publications – Dave Bader*
- *Complete document with plans for the 3-year three major experimental campaigns 4/30/15 – Bill Collins*
- *Identify Coupled Simulation Workflow requirements –* Peter Caldwell
- *Construct and document coupled testing framework for model developments – Andy Salinger*
- *Maintain Computer Resource usage and availability information - Renata McCoy*

v0.1 high and low resolution baselines

- Long run
- 3 member late 20th Century ensemble of 40 years each

Publications

- T85 Coupled Model Initialization Study
- CCSM4/ACME v0 high resolution comparisons

v0.1 Baseline Runs Elements

- perform coupled simulation workflow on all runs;
- perform analysis through diagnostics and metrics[1].
  - provenance,
  - move data,
  - publish to ESGF,
  - create climatologies,
  - create diagnostics,
  - move them to common place for analysis, produce metrics)

Priority Metrics

- For each metric – Define full provenance
  - Suggested reference data set
  - Model output
  - Algorithm
- Climatology and trends of zonal precipitation
- Climatology and trends of zonal top-of-atmosphere incoming and outgoing radiation
- Climatology and trends of the timing of sea ice extent and thisckness
- Climatology and trends of two-dimensional SST fields

Priority Metrics (cont)

- **Climatology and trends of zonal ocean heat content for these depth ranges: surface-700 m, surface-2000 m, and surface-bottom, computed globally and per ocean basin**
- **Climatology and trends of northward annual zonal ocean heat transport by basin**
- **Nino 3.4**