

CCSM high res

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This page consolidates notes and status on the attempt to run CCSM with at least and eddy-resolving ocean (0.1 degree) and 0.25 or 0.5 degree atmosphere.

Specs:

Ocean/ice always on tripole grid.

CCSM POP2 Task List: (updated 2/14/2008 by NN)

- Port LANL-POP infrastructure into CCSM-POP (Phil; in progress)
- Standalone version of CCSM4-POP working on Phil's laptop (Phil;done)
- Binary tavg output (Nancy; done; output has been validated by Mat)
- parallel I/O (John)
- barotropic solver (John; after Phil's infrastructure changes are done)
- run-time disabling of unwanted diagnostics such as bsf, mosf, mht,regional (eg, NINO), budgets (Mat, Nancy; BSF,MOC,transports can now be totally disabled)
- region mask done for budgets, ms balance (Julie, Mat, Nancy; ms balance done; Nancy is testing in ccsm4 gx1v5 context)
- run-time control for NINO diagnostics (Nancy)
- runoff (Rob, Art)
- handling system calls (John notes that Blue Gene does not support system calls) (Nancy)
- remove _HIRES ifdefs that are being used to disable some features and replace with logical controls (Nancy)

Full Model (0.5x0.1, cpl7)

- BlueGene
 - Runs for a couple of days on up to 2000 procs. No output
- Atlas
 - Runs for 4.6 days on 480 procs. Daily netcdf output successful

Ocean-ice (0.1)

- with Hunke coupler and older POP/CICE code base
 - runs for 1.5 years with old NCAR/NCEP forcing
 - exits quickly with Normal Year forcing
- with cpl7: not tried

Repo:

Code changes for POP are in: <https://svn-ccsm-models.cgd.ucar.edu/pop2/branches/hrpop/>

Fully coupled tag: https://svn-ccsm-models.cgd.ucar.edu/ccsm4/exp_tags/alpha18_jmd01/

Status:

[Grid circle](#) apparent in first monthly average field.

- Suggestions:
 - Run with data atm/Ind ? See if the feedback is in the ice/ocean to atm interpolations. Need mapping file for T63 --> tx0.1v2
 - Try using different type mapping. May indicate error in one particular type of mapping [Art]
 - Try using a Asymmetric test function [Brian K.]
 - Examine daily averaged or instantaneous fields from CAM. Is grid circle present 1 day into simulation or does it appear later.

Related projects:

[Parallel I-O](#) - needed for output on BlueGene

[CCSM on BlueGene](#) - All resolutions on BlueGene