

Model Clinic Recap 2009 – Friday April 10, 2009
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Intel Compiler

- GEOS-Chem apparently has problems with IFORT 11, we will try to look into it
- Lee Murray has done some testing on a Mac w/ IFORT 11

GNU Fortran

- No real need to port to this yet, must be user-initiated

Adding a new tracer into GEOS-Chem:

- Seek document from May Fu, which may need update
- Check parameters in CMN_SIZE, especially NNPAR

Restart file

- Chemical species will be added to a new restart file in the public release v8-02-01

FTP transfer:

- Jack Yatteau (sysadmin) is looking into using BitTorrent or GridFTP
- Issue: not all users can use peer-to-peer clients like BitTorrent at their institutions
- Suggestion: use ThreadServer for data transfer (not sure if that is feasible, check w/ Jack)

Timeseries and others diagnostics

- Discussion as to whether or not the timeseries diagnostic should be written to disk after chemistry or after transport. It is suggested to be done at the beginning of the dynamic time step.
- We will think about that problem. More complicated than it looks like: Strang operator splitting (different time step for transport/convection & chemistry) requires a new way to accumulate and count the diagnostic.

ND05 diagnostic unexpectedly zeroing some fields

- See:
http://wiki.seas.harvard.edu/geoschem/index.php/Bugs_and_fixes#ND05_diagnostic_quantities_zeroed_unexpectedly

Bug in GEOS-5 0.5 x 0.667 nested grid model for emissions

- Scale factor files not available at 0.5 x 0.667
- Philippe said that you don't need to use any emissions other than Streets 2006 for nested grid, so that should be OK.
- Action item: talk to Aaron van Donkelaar

Numerical issues

- e.g. don't test for equality for floating point numbers, use `IF (ABS (X) > 0d0)` instead, etc.
- See "Floating point math issues" page on the G-C wiki for more info.

Diurnal variation

- `Ihour = INT((GET_LOCALTIME(I)) / 4) + 1`
- Should use NINT, not INT. Will be corrected in the next release.

ND45 diagnostic

- if only part of the day is requested, this is not correctly picked up. Will investigate. May be related to the location of the diagnostics in the code (see above).

MASS FLUX diagnostic

- One user reported that GC crashes if those diag are switched on at 2x2.5. We suspect a memory issue.
- The ARCTAS bug: we know recommend to always turn on the mass flux diagnostic (See [here](#)). There will be a fix for that issue in the next release so users can turn off the diagnostic and not worry.