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Supported Projects: (ESGF, UV-CDAT, ACME, PCMDI)

Quarterly Report for October 1, 2015 – December 31, 2015

Quarter Accomplishments:

- Diagnostics (ACME, UV-CDAT):
 - Climatology script (Oct.):
 - Finished implementing MPI parallel processing
 - Investigated use of MPI together with Unix-style process forking and with threading.
 - More timing studies, mostly on Rhea
 - Bug fixes, minor improvements, mergers, etc. (Oct., Nov., Dec.)
 - Introduced use of named tuples in the internal ID system. (Oct.)
 - Mass weighted averages (Oct-Dec)
 - Implemented core weight computation (for CAM/CESM model output)
 - Implemented identification of variables needing this weighting (also for CAM/CESM)
 - Revised (most of) the reduction functions to just wrap a single function which does everything, including mass-weighted averages
 - Integrated mean attribute (needed to display weighted mean in VCS) into the diagnostic system; and integrated computed weights themselves
 - Provenance and other metadata written to png and NetCDF files (Nov)
 - Revised templates for less bad appearance of line plots (Dec)
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- Data management (ESGF, PCMDI):
 - Tested and fixed my database, in order to...
 - Provide Sasha with version number information (Oct-Nov)
 - Provide Sasha & Tony with lists of publishable files (Nov-Dec)
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- Data for Ben & Ivana (PCMDI) (Oct-Dec):
 - Found, transferred and prepared data, and ran scripts for MSU temperatures on many files, for Ben and Ivana. I wrote scripts to fix up some of the data - from new variable names to computing pressure levels from hybrid - and I fixed a small problem in the MSU script's build system. (Oct)
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- CF Conventions (PCMDI)
 - Maintenance and user support of the cf-metadata mailing list and Trac issue tracker (Oct-Dec)
 - Re-implemented my changes to the Conventions document in AsciiDoc (they were previously done in DocBook), and pushed to github, as

part of the general project of changing the CF Conventions to a community-supported effort (Dec)

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Next Quarter's Roadmap

- Diagnostics:
 - Mass weighted averages (Feb.)
 - Fast climatology script tested and released (Feb.)
 - The settings needed for “fast” will depend on machine and I don't know yet how we will do that.
 - Improved internal ID system (will ease the computation of better titles and labels) (Mar.)
 - Start restructuring code as necessary to support user-provided diagnostics. This is a large project, but necessary. (Mar.)
- CF Conventions:
 - Available for public contributions (most of this work will be done by others) (Feb.-Mar.)
- Data management:
 - Finish with support of publishing CSS-01 data (Jan.-Mar.)
 - I want to return to my “garbage collection” project but I'm not sure whether the time will be there; it might be. (Mar.)
- Other PCMDI: as needed; something usually comes up.

Resources Required to Achieve Goals

- Much of the CF Conventions work will be done by a group at BADC/CEDA, notably John Hattersley; and the web work by Matthew Harris here
- Diagnostics work has always depended on high quality support from Charles Doutriaux and other UV-CDAT people.