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Supported Projects: UV-CDAT, ACME

Quarterly Report for July 25, 2016 – September 30, 2016

Quarter Accomplishments:
- One of the first things I did upon returning was to build and test with my manual tests. These revealed some bugs which the automated tests missed, so I fixed them.
- I fixed a situation which had had user complaints, about unusual filenames. In the process I wrote a central function for computing all filenames, in order to ease future maintenance. This also turned out to be useful to the web viewer.
- I implemented calculations of several variables which Chris Golaz wanted in diagnostics output.
- The diagnostics code has a general-purpose system for defining new variables, to be derived from other variables. I exposed this to the user. Now any user can add variables to the diagnostics, defined in his own Python files. They are incorporated just like internally defined variables. This happens at runtime. These variables are only understood by a few plot sets, but that includes the most important one, set 5 (lat-lon contour plots). Usage is documented on both Confluence and Github.
- I reorganized some of the ID and naming systems in the metrics (diagnostics) code, leading to better title and source fields for some plots, and easier development in the future.
- In testing the (extensive) changes I had made, I uncovered and fixed several bugs, some with sometimes-serious consequences in numerical values in plots.

Next Quarter's Roadmap
- Merge the metrics branch with improved ID and naming systems into the master branch.
- If time, I will continue development of better titles and other text fields in plots.
- Clean up, and if necessary re-implement, some of the emergency changes which Jim had recently made in tables (he and I had agreed to this division of labor).
- Start on a better system for user customization.
- Modify or (more likely) replace metadiags in order to better suit our current needs for maintainability and flexibility.
- In the near future ORNL will hire a replacement for Brian Smith. Jim and I will want to discuss what he should work on first. Of course, I expect that he will be responsible for land diagnostics.