

PIEC greatly appreciates the work of the members of the DAWG

We agree that the main track for the continued development of fitted parameter estimation is FITACF-3.0 and a new **make_fit3** binary should be created in the RST.

FITACF-2.5 provides better results from some of our data and should remain available for use. To that end, a new **make_fit2** binary should be added to the RST and the code removed from the main `make_fit3` branch. This will have the added benefit of cleaning up the `make_fit3` implementation. The v2.5 branch should be maintained as any other software in the RST. As such any bug fixes to v2.5 should be applied immediately as they are identified.

To maintain compatibility with existing user scripts, a “`make_fit`” symbolic link could be created in the `.../rst/bin` directory that points to either `make_fit2` or `make_fit3` (or `make_fitex`, or `make_fitex2`, or...). (This is in line with standard practice for new implementations like for example `python2` and `python3`)

Because v3.0 is able to estimate parameters from some observations where v2.5 has not been able to do so there are some adverse impacts on other software in the RST, which was developed based on v2.5 results. We would like to see the DAWG turn their attention to mitigating these impacts before v3.0 becomes the more widely used fitting algorithm.

Because of the need to “despeckle” much of the fit data generated by v3.0 before it can be used in routines like `map_potential`, the DAWG should develop a user guide/tutorial for non-expert users of the software. The guide should detail the steps going from rawacf files to convection maps, identifying the best options/flags for non-experts. It is also recommended that the DAWG investigate ways to enforce the use of the “despeckle” routine.

FITACF-3.0 has been shown to be ~4 times slower than FITACF-2.5. The PIEC recommends that the DAWG investigate ways to improve the performance of the algorithm, which will help in a more widespread adoption of its use.