

Data Analysis Working Group

Emma Bland, Kevin Sterne, and the Data Analysis
Working Group

“Workshop” Report 2020

Working Group Membership

- Co-chairs: Emma Bland, Kevin Sterne
- Membership:
 - Marina Schmidt, Keith Kotyk, Evan Thomas, Angeline Burrell, Pasha Ponomarenko (chair emeritus), Daniel Billett, Maria-Theresia Walach, Ashton Reimer
- Observers:
 - Dieter Andre, Mike Ruohoniemi, Simon Shepherd, Bill Bristow

Demographics:

- PIs: 3
- Researchers: 7
- Engineers: 1
- Computer scientists: 3

Tasks for new Chairs

- Migration for DAWG web presence (still underway); for now located in rst repo's wiki: <https://github.com/SuperDARN/rst/wiki>
- Revisit and update the charter
- Continue development, foster collaborative online environment to recruit more students and others as developers
 - This led to the creation of Communications Guidelines to assist or give perspective on giving and receiving feedback via github.

Releases

- **RST 4.3:** (Sept. 6, 2019, little over a year since 4.2)
 - Shepherd [2017] elevation angle algorithm into fitacf 2.5
 - Update to Heppner-Maynard boundary
 - Updates to plotting code
 - Updates to real-time gridding code
 - Numerous bugfixes, reduction in compiler warnings
 - And more...
- **RST 4.3.1:** (Feb. 3, 2020)
 - Patch release to include AACGM version 2.6
- **RST 4.3.2:** (April 29, 2020)
 - Patch release for newly added DCN, JME radars, and DCE, SPS radar site information (radar.dat, hdw.dat.*)

June 1, 2020 DAWG Meeting

- Pre-meeting confirmation of attendance: 8 (not including co-chairs)
- Total (highest) number to join meeting: 26
 - Rough demographics:
PIs: 9, Researchers: 10, Engineers: 5, Computer Scientists: 2
- Feedback on meeting and chairs: largely positive on style/topics of meeting and organization. Would like to see DAWG digest sent to WG and PIs to better inform highlights of activities.

Charter Update Highlights

- Mandate changed:
To maintain, improve, document and distribute software for analyzing **and visualizing SuperDARN radar data for use by scientists and students.**
- Additions:
 - “Scope” section to expand upon Mandate
 - pydarn as a responsibility of the DAWG as a secondary software package
 - Addition, removal of secondary software section
 - Requirements for DAWG managed software
- Updates:
 - Demarcation of DAWG responsibilities with the creation of DSWG
 - Membership definition

pyDARN

- Python 3 software package for SD data read/write (IO), basic plotting
- Initial idea conceived during SD 2018 as decided davitpy was too bloated, unmanageable, and could be better written
- Started to take shape in 2019 and had presentation during SD 2019
- First release made March 25, 2020! Includes RTI, time-series, and summary plots and dmap reading, writing within python environment
- Reads in Borealis HDF5 files and converts them to dmap.
- Group of 8 contributors (core team of 4 to 5)



June 1, 2020 DAWG Meeting

- Charter updates discussed, no large feedback. Lots of development happen before meeting. Going to PIs for approval.
- Discussed the shift of hdw.dat files from DDWG to DSWG and plans for RST in the future. Small changes to RST should allow this to be fairly seamless.
- High-level updates (or modernizing) to RST discussion largely productive. Lots of points/concerns raised for the WG to keep in mind for this effort.
 - Included discussion of fitacf 3.0 and path forward, basically need a reference to understand functionality
- With fitacf 3.0 path determined, clears goals for next RST release (4.4). This release should happen in the next week or 2.

June 1, 2020 DAWG Meeting

- Authorship of RST in Zenodo: One thought is to use “SuperDARN Data Analysis Working Group” as author and individuals in the contributors section of Zenodo listing. Will make a proposal and follow up with WG at next meeting.
- Thanks to all for attending and bringing up great points!