ACTIVITY REPORT:

TUNER
(Towards Unified Error Reporting)

Activity leads:

Thomas von Clarmann, KIT-IMK

Nathaniel Livesey, NASA JPL and CalTech

Doug Degenstein, University of Saskatchewan

28th SPARC SSG meeting
Part II: Activity reporting

February 2021

- Provide recommendations for evaluation and reporting of errors/uncertainties of remotely sensed atmospheric state variables (temperature, gas concentrations)

- Dto. for other diagnostic data (averaging kernels, information on resolution etc.)

- Apply these rules to the error reporting of some selected missions.

- Instruct data users how to use these metadata.

Progress and achievements

- The first team paper on recommendations on error reporting has been published in summer 2020.

- The TUNER special issue includes already 8 papers.

- The submission deadline has been extended by October 2021 because we expect some further papers to be written.

Article	Peer review	Metrics	Related articles

Review article   17 Aug 2020

Overview: Estimating and reporting uncertainties in remotely sensed atmospheric composition and temperature

Thomas von Clarmann[1], Douglas A. Degenstein[2], Nathaniel J. Livesey[3], Stefan Bender[4], Amy Braverman[3], André Butz[5], Steven Compernolle[6], Robert Damadeo[7], Seth Dueck[2], Patrick Eriksson[8], Bernd Funke[9], Margaret C. Johnson[3], Yasuko Kasai[10], Arno Keppens[6], Anne Kleinert[1], Natalya A. Kramarova[11], Alexandra Laeng[1], Bavo Langerock[6], Vivienne H. Payne[3], Alexei Rozanov[12], Tomohiro O. Sato[10], Matthias Schneider[1], Patrick Sheese[13], Viktoria Sofieva[14], Gabriele P. Stiller[1], Christian von Savigny[15], and Daniel Zawada[2]

[1]Karlsruhe Institute of Technology, Institute of Meteorology and Climate Research, Karlsruhe, Germany
[2]Department of Physics & Engineering Physics, University of Saskatchewan, Saskatoon, Canada
[3]NASA Jet Propulsion Laboratory and California Institute of Technology, Pasadena, CA, USA
[4]Department of Physics, Norwegian University of Science and Technology (NTNU), 7491 Trondheim, Norway
[5]Institut für Umweltphysik, Department of Physics and Astronomy, Universität Heidelberg, Heidelberg, Germany
[6]Department of Atmospheric Composition, Royal Belgian Institute for Space Aeronomy (BIRA-IASB), 1180 Brussels, Belgium
[7]NASA Langley Research Center, Hampton, VA, USA
[8]Department of Space, Earth and Environment, Chalmers University of Technology, Gothenburg, Sweden
[9]Instituto de Astrofísica de Andalucía, CSIC
[10]National Institute of Information and Communications Technology (NICT), 4-2-1 Nukui-kita, Koganei, Tokyo 184-8795, Japan
[11]NASA Goddard Space Flight Center, Greenbelt, MD, USA

Collaborations

- Which other projects are you collaborating with? Those the TUNER participants are involved in.

- How is this collaboration organized / formalized? Informal.

- What other possibilities do you see for future collaborations (inside/outside SPARC; new partner projects/ possible topics/ …) Application of our recommended methods to data of other projects.

- Are there specific needs to put new collaborations in place? Informal cooperation seems sufficient.

Future plans

- Provide TUNER-compliant error estimates for data of missions TUNER scientists are involved in.

- Write a data user tutorial paper (how to use error estimates, correlation information, averaging kernels, etc.); this will be the second team paper to be published in the special issue.

- Tutorial workshop for data users.

- SPARC endorsement of the TUNER recommendations would be appreciated.

- Due to Covid-19 there are still no specific plans for the data user tutorial meeting. Once specific plans emerge, SPARC support would be appreciated.

Thank you and stay healthy!