Notes of the COCCON EM27/SUN telephone conference at October 25th 2022

Here are some notes of the discussions and ideas of the telecon.

Please note that these notes are not a complete record. Rather it tries to sum up the most important points of the discussion. Furthermore, no liability is taken in case of any misunderstandings.

However, if you think an important point is missing please email to benedikt.herkommer@kit.edu.

List of participants:

Greg Osterman (JPL), Dave Pollard (NIWA), Hayoung Pak (National University Seoul), Jonghyuk Lee (National University Seoul), Jueun Kim (Chungnam National University Korea), Katharina Heimerl (Vrije University Amsterdam), Mahesh Kumar Sha (BIRA), Mattias Frey (Nies), Morgan Lopez (LSCE France), Noemi Taquet (UNAM), Neil Humpage (University of Leicester), Nicholas Deutscher (University of Wollongong), Pascal Jeseck (Sorbonne University), Qiansi Tu (Tongji University, Shanghai), Thomas Blumenstock (KIT), Tomi Karppinen(FMI), Wolfgang Stremme (UNAM), Yao Te (Sorbone Universtiy), Frank Hase (KIT), Benedikt Herkommer (KIT)

1) PROFFAST2.2 and PROFFASTpylot FAQs

Questions to the community:
In the following the question and the possible answers are listed. The number behind the answer is indicating the number of persons choosing this option.

1. Who is using which version of PROFFAST:
   a. PROFFAST1, without pylot (6)
   b. PROFFAST2.0.1, with pylot 1.0 (1)
   c. PROFFAST 2.1 without pylo t (1)
   d. PROFFAST 2.1 with pylot (8)
2. Are you using git for downloading and getting updates:
   a. Yes (8)
   b. No (3)
3. Which operational system are you using:
   a. Windows (6)
   b. Linux (including Mac OS) (6)
4. Did you embed the retrieval into a larger system or do you intend to do it?
   a. Yes (8)
   b. No (6)

Any other Questions/Discussion:

- Is it possible to compile PROFFAST with gfortran-8 (9 is recommended)
    - Our tests say yes. However, it may be slower
- Are the GGG2020 map-files used for the calibration of PROFFAST?
    - Yes!
- Is there an automatically tool to download the map-files from the Caltech server?
    - No, not yet. But everyone is welcome to write one and make it public to the community
    - There is the possibility to run your own gInput server to generate the map-files locally on your own: https://tccon-wiki.caltech.edu/Main/UsingGinput

This would help to decrease the load to the Caltech server and would make you more flexible with map file

2) COCCON steering committee, presentation by Frank Hase

Comments/Discussion to the presentation:

- Maybe organize the COCCON in working groups similar as NDACC does.
- The question of joining to infrastructures like ICOS is connected with the funding and also a question of steering: There may be some standards to be followed.

3) Using the EM27/SUN FTS for open path measurements of GHGs by Frank Hase

Questions to the presentation:

- Is is possible to extend the shown setup using a retroreflector?
  - In principle yes. When research is going on this will be tested.
- What is the reason for the spikes of the EM27 measurements at slide 10?
  - Hard to say what is the reason
  - There is a small power plant of the KIT in direct vicinity of the EM27 measurement but more remote to the ICOS station. Maybe this could be a reason.
  - Would be interesting to correlate it with the wind direction.