

ACTRIS CiGas NO_x Data Submission Workshop Minutes, 08 February 2024

- Robert Holla (RH, DWD): Converter temperature flag - is it still differentiated from the span measurement?
 - Robert Wegener (RW, FZJ): This is not foreseen, it all refers to calibration now. But we will look how to deal with it in the future. We want to balance the entries and therefore simplify the process.
- Martin Steinbacher (MS, EMPA): The Level 2 and 3 data, does it apply to all trace gases now, also to the ones without inlet effect? The levels should be defined in the way throughout the whole database.
 - Markus Fiebig (MF, NILU): Level 2 is the first direct product from the instrument e.g. for the NO_x instrument, or O₃ instrument it is the final hourly value. Level 3 on the other hand is a higher-level product which may contain more advanced calculations and corrections, based on input from other instruments. That is what we are using for providing the inlet corrected NO_x. Another example for higher level product is filter absorption photometer which measures particle absorption coefficient, which is an equivalent Black Carbon concentration. Another reason is that air quality networks do not correct for sample line effects but we would like to have an option to compare ACTRIS to those products and show that ACTRIS products can in fact provide better data.
- MS: If the new procedure, how much does it go hand in hand with EMEP data? Level 2 should in principle agree.
 - MF: That is correct.
 - RW: This is why we correct for nocturnal NO which can be regarded as an instrument failure and we need only the instrument data and not any other auxiliary data, so it is level 2.
- MS: For direct NO₂ measurement methods like CAPS, if NO₂ is calibrated with GPT calibration is it accommodated in meta data? In that case we would possibly need to add more data like the amount of ozone etc. And what is the preferred way to calibrate the CAPS?
 - RW: For CAPS the preferred way to calibrate is GPT. You have to make sure you don't produce NO₃ out of NO via NO₂. There are unfortunately no other standards available for NO₂, only via GPT. It is also indicated in the metadata. We also indicate the SOP, or the measurement guideline you used. If you submit an ACTRIS dataset, in the metadata you should refer to the ACTRIS SOP.
- RH: Couldn't the status type variable be used to indicate the 2 modes of GPT converter efficiency determination in future? so this would not affect the reduced set of flags.
 - MF: That is exactly the solution I was thinking about. But we would need to agree TC internally on clear guidelines about this use before taking this into use.
- Petri Keronen/SMR Hyttiälä (Vieras): Is a cavity-ringdown analyzer (CRDS) acceptable or not?
 - RW: It is a general issue as it is new on our list of instruments. In general, if you want to have this or other new measurement methods under ACTRIS, you should inform the topical center first before purchasing such an instrument. We are open to new techniques and we can for example have a look at the new instrument

and data at our institute. We need to check whether it fits the purpose/where you measure (remote/urban/sub-urban etc.).

- MF: If you already have a CRDS instrument you can submit data under EBAS but it won't be under ACTRIS.
- Christoph Büttner: Is it necessary to send measurement data during the calibration process?
 - RW: This would be level 0a data and then you send the counts and mixing ratio for the calibration process and put the appropriate flag on the datapoint.

General points

- Recommendation RW: Check the link in the presentation and look into the pages of data portal. Whether you can provide the data that is required and if there are problems please contact us at the TC CiGas for feedback/help.
- Topical wishes and inputs will be collected from the community for the next NO_x submission workshop to be held tentatively on 07 March 2024 (Thursday) 10:00 CET/09:00 UTC via Teams.