

Trace Gas Breakout

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How to Cross the Wall of Ignorance

- And the Chicken and the Egg
- The developers had a “Build it and they will come” mentality.
- Funding provides ability to build a product, but not with the interaction needed to have it anticipated by the user community. Users not engaged in the early process. This user engagement exercise is funding limited.

Basic questions

- Describe how SNPP/JPSS products provide continuity from legacy POES, METOP, DMSP, EOS?
 - METOP/IASI, EOS/AIRS EOS/Aura/TES, EOS/Terra/MOPITT
- For new capabilities from SNPP/JPSS describe the benefits
 - No new trace gases, BUT
 - Dense 70% global coverage,
 - LTM (multi satellite mission, with multi year overlap, when all other resources are beyond their design life),
 - Gasses retrieved simultaneously
 - Possibility of additional gases (HCN, HDO, Ammonia)
 - Lower noise
- Provide Details on:
 - when do you plan to use the SNPP/JPSS NESDIS Product? NOTE: IASI === NUCAPS because it is identical code, format, and very similar characteristics
 - NESDIS deliver product (IASI+NUCAPS):
 - Ira Aoeifer IASI CH4 currently, funded by NASA ROSES
 - currently sporadic users for science applications
 - validation/comparisons with GOSAT, potential with OCO
 - Jonathan Smith using IASI and NUCAPS O3/CO
 - NASA/SPoRT using O3
 - TOAST O3
 - Users of legacy instrument (e.g., AIRS, TES, MOPITT) users of these instruments will have to use CrIS product and ultimately will have vested interest in using products

Atm Chem Part 2

- Is there an actionable plan? **Workshop – STAR/CPO workplan to develop products – engage user community**
 - Is it funded? **Yes,**
 - STAR developers has responsibility to meet the requirements via continuous measurements
 - AER is funded for new research NH3 algorithm via AC4
 - CPO/AC4 has resources to support atmospheric composition studies
- What is the priority?
 - **CPO/AC4: have not ranked priorities yet, it is one of a few priorities**
- Have you thought about how you will get the data and have you identified the issues with your operational use of SNPP/JPSS? **CLASS, Users have expressed concerned with access**
- Are the current legacy products well utilized? **yes**
- Is the SNPP/JPSS product part of a blended product? **Yes TOAST, TACO-O3**
- What additional work needs to be done to ensure that the SNPP/JPSS product is/will be well utilized? **Averaging kernels in operational products (data reduction), validation of product wrt reference instrument, closer collaboration between developer and user community**

Are enhancements needed for:

- Accessibility (data flow, latency, format)
 - Low latency products are needed for field experiments
 - The scientific interaction can be supported by STAR
 - But we need to communicate this capability
 - Numerous users have complained that obtaining trace gas products from CLASS:
 - Is not user friendly (cumbersome),
 - There is a lack of tools to narrow search range,
 - That all our products in one large file (no targeted retrieval)
- Product performance (accuracy, precision)
 - Full resolution required for CO and opaque water lines and may improve other products
 - Desire for filling spectral gap – formic acid, HDO
- User applications (modifications to modeling , decision tools, visualization to use the new products)
 - Level 3
 - Tailored products (e.g. lower vertical sampled CO with Avg Kernels)
 - Website visualization