Atmospheric Composition from JPSS Satellites

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Current JPSS Atmospheric Composition Capabilities

- Products
- VIIRS
  - Aerosols, smoke, dust, volcanic ash
- CrIS
  - Trace gasses (Ozone, CO, CH4, CO2 profiles)
- OMPS
  - Ozone profiles, total ozone, SO2

- Application # 1
  - Air quality, PM 2.5, Aviation Safety

- Application # 2
  - Climate

- Application # 3
  - Ozone hole, UV Index Forecast, volcanic eruptions

JPSS Satellite product support for AGES field campaigns

Describe how your products can support the campaigns (e.g., NRT provision of your products in support of flight planning)

- NRT data are available via direct broadcast
- NRT products are also available on Product Distribution and Access (PDA) for operational users
- Products are also available from NOAA CLASS for public users to access

- What scientific objectives you want to achieve as a satellite product developer?
  - The products should meet users needs for accuracy, timeliness and spatial resolution
  - Provide the performance information and where the information come from (e.g. averaging kernel etc.), so users can use as reference for their applications

- Cite one or two examples on how past field campaigns helped with cal/val of satellite products
  - ATOM
  - FIREX
  - AERONET

  The data sets have been used in the JPSS cal val and the results are presented in the Cal/Val maturity reviews.

Latency may depend on products; in general; latency for PDA (Operation) is ~100 min or less; for DB, usually ~30-40 min or less; and CLASS it is 4-6 hours or less

Post AGES campaigns satellite data analysis

- List science activities involving data from AGES campaigns
  - Cal/Val of CrIS, OMPS and VIIRS products (need to list some from the OAR bilateral meetings)
  - GML-NESDIS Quarterly Workshops
  - JPSS PGRR Atmospheric Composition Initiatives Meetings
  - JPSS Cal Val Maturity Reviews for SNPP, NOAA-20 (completed already), planned JPSS-2 and LEO/EPS-SG cal val

How AGES campaigns can inform future/upcoming satellite product development

- List science activities involving data from AGES campaigns
- AGES campaigns can improve cal/val of satellite products and fine tune the algorithms to improve accuracy
  - Atmospheric composition products are hard to validate due to sparsity of ground networks, coarse resolution of satellite products, gaps in satellite data due to clouds, orbital coverage etc.
  - The validation datasets will be much needed for the cal val of the future/upcoming missions such as JPSS-2, and Metop-SG from which are expected to produce global atmospheric composition products


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Nov 1 2022 - GO JPSS-2 !!!