Technical discussions on Emissions and Atmospheric Modeling (TEAM)

Gregory Frost* – NOAA Earth System Research Laboratory

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Megan Beardsley, Chad Bailey, Darrell Sonntag - EPA Office of Transportation and Air Quality

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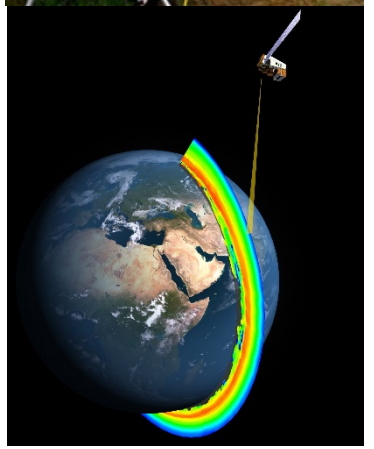
****TEAM Agency Point of Contact***

TEAM Motivation

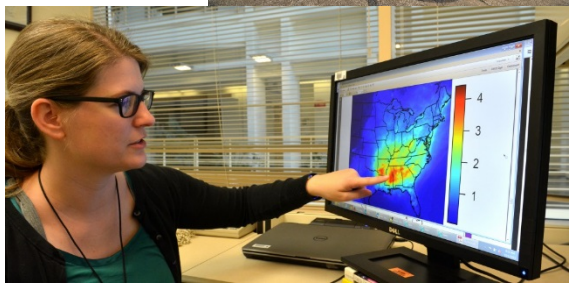
- Multiple federal agencies develop, collect and analyze complementary data relevant to atmospheric composition
  - Ambient ground measurements
  - Aircraft-based observations
  - Satellite-based retrievals
  - Weather models
  - Emission inventories
  - Air quality models
- Ambient observations, atmospheric models, and emission inventories are fundamental tools for science and for federal and state actions
- Field measurement campaigns and analysis of satellite observations highlight need to reconcile emission inventories with observed atmospheric concentrations
- Each agency approaches reconciliation differently!

EPA

NASA

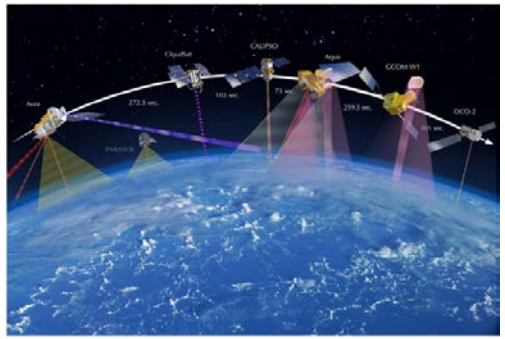


NOAA



EPA

TEAM: Strengthening Inter-agency Collaboration and Knowledge by Sharing Data and Analytics



NASA

NOAA

EPA

Meteorology

Emissions

TEAM Purpose

- Benefit state and federal environmental management
- Better characterize present and future air quality

TEAM Objectives

- Facilitate informal scientist-to-scientist interactions
- Leverage resources through coordination, communication and collaboration
- Improve scientific understanding of emissions and atmospheric processes
- Close gaps limiting inventory development and atmospheric modeling
- Increase understanding of uncertainties
- Add value to existing efforts

TEAM Participants

- Small steering committee composed of technical experts in atmospheric observations, modeling, and inventories
  - Currently includes EPA, NASA, and NOAA staff
- Participants are active in atmospheric research, air quality modeling, emission inventory development, and environmental assessment
- Participants will likely vary over time depending on the topic area
- Technical staff at Federal agencies with specific interests in emissions and atmospheric modeling are welcome to participate in TEAM

TEAM Design

- Facilitate active and sustained communication through webinars and in-person meetings on emissions topics
- Series of 3-4 webinars on a given topic will last several months

Webinar 1: **Introduce** topic, challenges, and concerns → Webinar 2: **Discuss** issues & connections → Webinar 3: **Discuss** issues & connections → Webinar 4: **Agree** on solutions & path forward

- Complement webinars with face-to-face meetings of convenience
- Interactions remain flexible, responding to needs of group
- Inspire further expert-to-expert communications

TEAM Connections

- TEAM fills a unique role not currently addressed by other interagency venues.
- TEAM proposed topics and depth of inquiry are generally outside the scope of higher-level coordination efforts.
- TEAM is an informal group interacting with more formal coordination vehicles:
  - Air Quality Research Subcommittee
  - NASA-EPA Memorandum of Agreement
  - NASA Health & Air Quality Applied Sciences Team
  - Multi-agency field missions
  - Related national/international collaborations

First TEAM Webinar Series:

Reconciling NOx Emission Inventories with Ambient Observations

- Carry out substantive discussions aimed at improving scientific understanding of NOx emissions
- Build on work of EPA's NOx Coordination Group
- Webinars: April 17, May 15, August 8, and at least one more in next couple of months
- Half of today's presenters (Barron, Greg, Brian, Darrell) are involved in these webinars

Topics discussed in 1st TEAM Webinar Series:

Reconciling NOx Emission Inventories with Ambient Observations

- EPA process for developing the NEI and emissions modeling
- Development and evaluation of MOVES
- EPA efforts to evaluate modeled NOy budgets with ambient observations
- Using aircraft in-situ and remote-sensing data from research field missions to constrain NOx emissions
- Using satellite data to constrain NOx emissions and extend inventories to near-real-time
- Developing a US transportation inventory using a fuel-based approach combined with atmospheric EF observations
- Impact of different NOx emissions approaches on modeled O_3

TEAM-related in-person meetings

EPA International Emissions Inventory Conference

- This science session
- Informal lunch discussion (yesterday)

Community Modeling and Analysis System Conference

- October 23-25, 2017
- Chapel Hill, North Carolina
- Special Session: *Improving the Characterization of the Ambient NOy Budget*

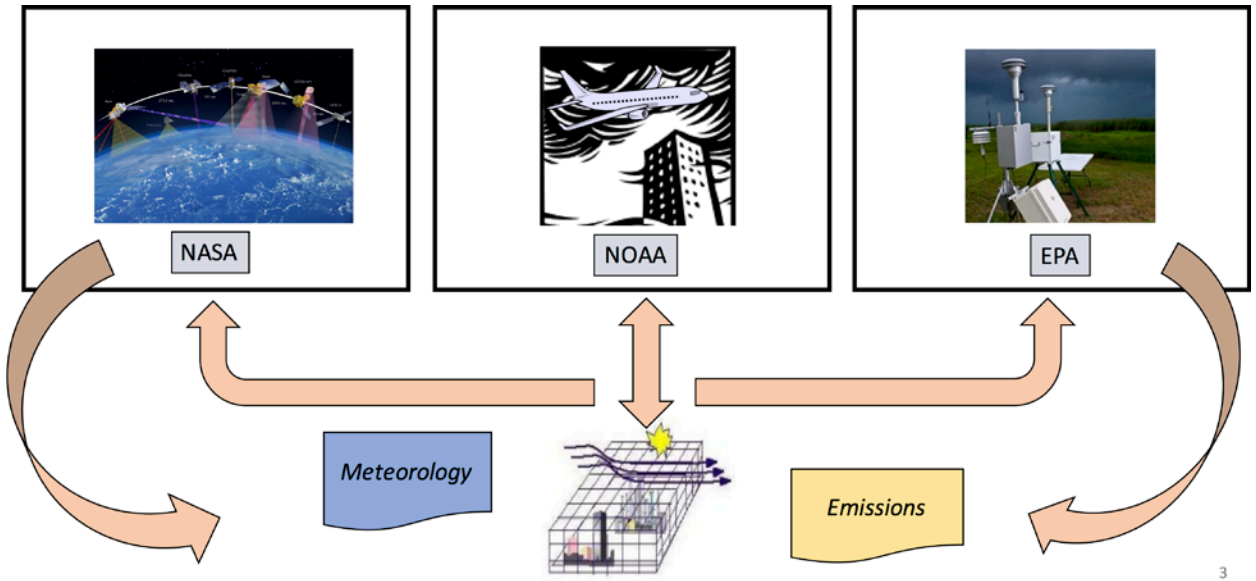
https://www.cmascenter.org/conference.cfm

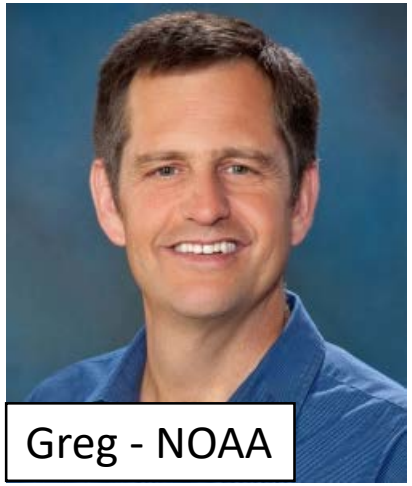
American Geophysical Union Fall Meeting

- December 11-15, 2017
- New Orleans
- Session: *Leveraging Inventories, Observations and Models to Improve the Scientific Basis of Emissions*

https://fallmeeting.agu.org/2017/

Questions?

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Barron - EPA


Barry - NASA

TEAM Points of Contact

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