Coordinated US Initiative on Emissions Research
1st Workshop, 4 December 2009
Preliminary Agenda (12/02/09 Draft)

Workshop Location
Room 2A-305 (CSD Conference Room), NOAA David Skaggs Research Center, Boulder, CO

Workshop Goals
- Provide an overview of US emission inventory development efforts, and summarize the drivers and needs of the agencies tasked with these efforts.
- Identify research questions and approaches that can contribute to improved emissions inventories, with a focus on how various types of observations (surface networks, aircraft, satellite) and inverse modeling can be used to develop and evaluate emission inventories.
- Develop a plan to address these research questions, taking into account the respective capabilities of different agencies or communities.
- Develop a sketch of an open-source research emission system to provide emissions for gases and aerosols. With this system, emission inventories for a variety of scales developed with different approaches could be evaluated and easily incorporated into atmospheric models. The actual development of such a system is expected to be a much longer-term effort. The goal of this workshop would be to describe activities and benefits that could be accomplished in a shorter time frame.

Workshop Schedule
8:30 - 9:00 Presenter check-in; coffee/tea/snacks available

9:00 - 11:50 Morning Presentations
Short presentations (maximum of 10 minutes each) that show the work that various groups are doing on emissions and that describe their needs.

Motivation
9:00 - 9:10 Welcome: A. R. Ravishankara (NOAA/ESRL/CSD)
9:10 - 9:20 Introduction and goals of the meeting: Claire Granier and Greg Frost (NOAA/ESRL/CSD)
9:20 - 9:30 Thoughts from the IPCC work: Steve Smith (PNNL) and/or Jean-François Lamarque (NCAR)

Inventory Development
9:30 - 9:40 Overview of EPA emission inventory development and research needs: Chet Wayland (EPA), Terry Keating (EPA)
9:40 - 9:50 US NEI perspective: Lee Tooly (EPA), Marc Houyoux (EPA)
9:50 - 10:00 CO2 inventories, how can they be linked with inventories of other species: Kevin Gurney (Purdue Univ)
10:00 - 10:10 Biogenic VOCs emissions: Alex Guenther (NCAR)
10:10 - 10:20 Dust emissions: employing land-use data in calculating emissions: Paul Ginoux (NOAA/GFDL)
10:20 - 10:30 Fire emissions at high resolution: Christine Wiedinmyer (NCAR)

10:30 - 10:40 Break

Inventory Evaluation and Data Access Methodology

10:40 - 10:50 Assessment of emissions: Paulette Middleton (Panorama Pathways)

10:50 - 11:00 Evaluating emissions using field observations: Tom Ryerson (NOAA/ESRL/CSD)

11:00 - 11:10 Evaluating VOC emissions from anthropogenic, biogenic, and burning sources: Carsten Warneke (NOAA/ESRL/CSD)

11:10 - 11:20 Evaluating emissions using satellite observations: Greg Frost (NOAA/ESRL/CSD)

11:20 - 11:30 Inverse modeling and multi-species analysis to quantify emissions: Gabrielle Pétron (NOAA/ESRL/GMD)

11:30 - 11:40 Real-time inventories: how to verify consistency between the emissions of different species: Greg Carmichael (Univ. Iowa)

11:40 - 11:50 Networked Environmental Information System for Global Emissions Inventories (NEISGEI); Global Earth Observation System of Systems (GEOSS) Architecture Implementation Pilot (AIP): Stefan Falke (WUStL, Northrop Grumman)

11:50 - 13:00 Lunch

13:00 - 16:00 Afternoon Discussions

The afternoon will consist of discussions on this initiative and definition of the first steps towards coordinated emissions research. Some possible questions to guide these discussions:

- What are short-term (6 months, 1 year, 2 years, 3 years) goals with well-defined limits that could be achieved by this collaboration?
- What inventory products are needed/desired that are not available now, and what are the key characteristics needed to improve research and assessment activities? Dimensions of these questions include:
    - Focus on emissions only or also drivers?
    - Timescales?
    - Sectoral coverage?
    - Update frequency?
    - Is this a repository, an analysis effort, and/or a data production effort?
    - Target resolution?
    - Species: multi-pollutant approaches, air quality, greenhouse gases, toxics?
- What evaluation approaches show the most promise? How can we make better use of observational resources? What observations are most needed?
- What is the next step?
    - White paper?
    - Proposal?
        - Are funding agencies willing to support this activity?
        - What can we do within our own agencies to promote this activity?
    - Follow-up meeting focusing on specific issues?

Workshop Discussion at AGU Meeting: A short discussion of this workshop's main conclusions will be organized by Greg Frost during the Fall AGU Meeting in San Francisco sometime during the week of 14-18 December.