JANUARY 2007

CMAS Quarterly

The Quarterly Newsletter of the Community Modeling and Analysis System

CMAS Planning Advanced Training Course

Training has been a central part of the CMAS mission since its inception more than five years ago. The basic training has focused on introducing the community to the CMAQ modeling system, the emissions processor SMOKE, and the Multimedia Integrated Modeling System (MIMS). Training sessions have been held in the CMAS Center's local area (in Research Triangle Park, NC, or on the campus of the University of North Carolina at Chapel Hill) as well as off-site at trainees' locations, both U.S. and international. The latest SMOKE and CMAQ training sessions, held in conjunction with the 5th Annual CMAS Conference in October 2006, were attended by 30 scientists and engineers. Over the past five years, CMAS has trained more than 320 people (see figure) from all over the world on various aspects of air quality and emissions modeling.

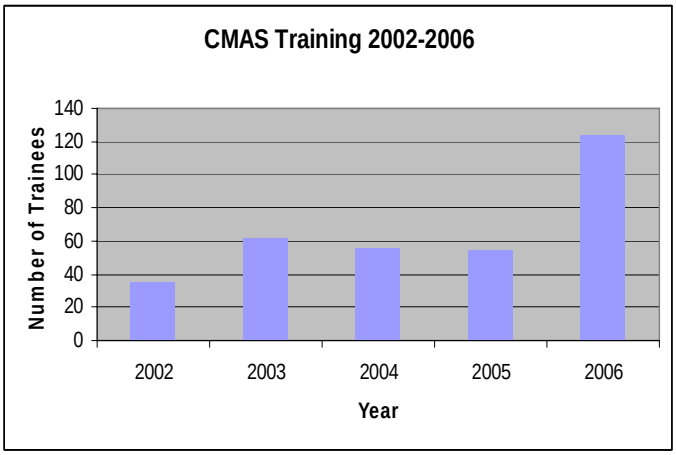
To respond to the needs of the majority of users, CMAS is now enhancing the training program. EPA and CMAS are teaming up to design an advanced training course titled "Air Quality Data Analysis and Model Performance Evaluation." This topic is very important because many users need more information on using model outputs for decision making and environmental management, including compliance with regulatory decisions. The course will have the added benefit of identifying strengths of air quality models and uncovering weaknesses that can be improved.

"Air Quality Data Analysis and Model Performance Evaluation" will be three days long, and will likely be offered twice a year. Examples of topics to be covered include:

- Statistical methods for model evaluation
- Characteristics of the main observational networks, such as IMPROVE, STN, and AQS
- Biases and errors in modeled and observed parameters
- Graphical and visualization tools for data analysis
- Process analysis for analyzing and evaluating air quality models
- Model intercomparison and validation techniques

The training will include a full day of hands-on experience where participants will use real case studies to examine analysis and model performance methodologies. Attendees will also be introduced to EPA's newly developed Atmospheric Model Evaluation Tool (AMET), which has been beneficial in several formal evaluations of the CMAQ modeling system.

We welcome your input or suggestions regarding the new advanced training program. Please send mail to cmas@unc.edu.



Mark Your Calendars!

The 6th Annual CMAS Conference will be held October 1-3, 2007, at UNC. Watch the CMAS web site for details.

Upcoming Training Events

(All are at UNC unless otherwise indicated)

SMOKE Training:

- January 22-24, 2007
- May 9-11, 2007
- July 23-25, 2007
- September 26-28, 2007

CMAQ Training:

- January 25-26, 2007
- May 7-8, 2007
- July 26-27, 2007
- October 4-5, 2007

Can't come to us for training? Have the same courses taught on-site at your location by the same experienced trainers. Visit http://www.cmascenter.org/training/classes.cfm or e-mail cmas@unc.edu.

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Credits

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www.cmascenter.org

Third CMAQ Peer Review in Progress; Results Expected in Spring

Continuing the tradition of frequent review of the CMAQ modeling system, CMAS and the EPA Office of Research and Development arranged the third CMAQ peer review. The 2006 review is focusing on meteorological/physical/chemical process aspects of the CMAQ modeling program, as well as applications and evaluation. Seven leading scientists were selected to form the review panel; members represent academia and Federal and state governments. On December 18 the panel convened for a three-day meeting at EPA in Research Triangle Park, NC, to discuss recent developments in the CMAQ modeling system. Besides listening to presentations by lead scientists at EPA, panel members also met with some of the developers for further discussion. The review panel was charged with a number of questions:

1. What is the overall quality of the applied scientific research in the CMAQ Modeling Program?

2. What are the strengths and weaknesses of the science being used within the components of the CMAQ Modeling Program?

3. What are the quality and relevance of the model applications and evaluations being conducted within the CMAQ Modeling Program?

4. What are your perceptions of the integration across different elements of the CMAQ Modeling Program (links between model development, applications, evaluation)? What is your perception of the CMAQ Modeling Program's usefulness to EPA, the states, other customer needs, and the research community?

5. Are there modeling research areas relevant to EPA's regulatory program needs that are not being addressed or are being given insufficient attention within the CMAQ Modeling Program? Are there current areas of research emphasis that might be given lower priority or eliminated? Regarding the resources available to the CMAQ Modeling Program, are they being used effectively in terms of the choice and quality of the applied research being conducted at EPA?

Panel members are currently preparing a report on their findings. The full CMAQ review should be posted on the CMAS web site this spring.

Highlights of 5th CMAS Conference

The fifth annual three-day CMAS conference was held at the UNC Friday Center beginning on Monday, October 16. Dr. Larry Reiter, Director of EPA/NERL, presented the keynote speech. The UNC welcome address was given by Dr. Tony Waldrop, UNC Vice Chancellor for Research and Economic Development. Mr. Tim Keeney, NOAA's Deputy Assistant Secretary for Oceans and Atmosphere, also addressed the conference participants. Mr. Pasky Pascual of EPA's Council on Regulatory Environmental Modeling/Models Clearinghouse gave a special presentation on the third day of the conference. The 2006 CMAS awards acknowledging significant contributions were presented to Dr. Alan Hansen of EPRI and Dr. Michael Bane of the University of Manchester (UK).

The 197 conference participants, representing the U.S. and nine other countries, had the opportunity to attend 97 high-quality presentations: 62 talks and 35 posters.

Did You Know?

CMAQ Has a New Home

All the information you need to know about CMAQ, from documentation and data to CMAQ utilities and updates, can now be found online at http://www.cmaq-model.org/. An analogous web site for SMOKE was announced in the last *CMAS Quarterly* (http://www.smoke-model.org/).

16th Annual International Emissions Inventory Conference: "Emission Inventories: Integration, Analysis, Communication" *(sponsored by EPA)*

May 14-17, 2007, in Raleigh, NC

See http://www.epa.gov/ttn/chief/conferences.html for more information. Note that the spring CMAQ and SMOKE trainings are scheduled the week before the conference so that conference attendees can more easily attend training as well.

Share Your Research and Development Work

Please share your CMAS-related research or model development work with the CMAS community by visiting the CMAS Research and Development web page at http://www.cmascenter.org/rnd.cfm. Your submissions will be posted under "Ongoing Research and Development."