CMAS ENVIRONMENT

NEWSLETTER OF THE COMMUNITY MODELING AND ANALYSIS SYSTEM

UPCOMING EVENTS

CMAS Conference

14th Annual CMAS Conference
October 5-7, 2015

2015 Trainings

CMAQ:
October 8-9, 2015

SMOKE:
June 15-21, 2015 (*Online*)
September 30-October 2, 2015

Interpretive Analysis:
October 12-14, 2015

Can't come to us for trainings?
Have CMAS training courses taught on-site at your location. See http://www.cmascenter.org/training/classes.cfm or email cmas@unc.edu for more information.

Newsletter Staff

Content: Adel Hanna

Editor: Margaret Ledyard-Marks

CMAS Outreach Program, Training and Conferences

The global outreach program for CMAS is reaching out to community users globally through training and conferences held in ten different countries.

The first online SMOKE training was offered last summer and was attended by fifteen participants. This training is open for registration again this summer (offered June 15, 2015). It provides participants with an opportunity to interact with instructors online on a daily basis to answer their questions and provide guidance for running case studies. The CMAS training team has also completed the final preparations for the first CMAQ online training, which will be offered shortly to community users.

During December 2014, CMAS hosted a group of sixteen scientists and engineers from the Hebei Province Department of the Environment in China who attended an extensive two-week training program on SMOKE, CMAQ and Interpretive Analysis. The training program included the presence of a Chinese interpreter for those scientists who needed translations from English.

During the month of April this year, CMAS has conducted spring training on SMOKE, CMAQ and Interpretive Analysis. It is worth mentioning that the CMAS training program on Interpretive Analysis is gaining a growing interest from community users. Interpretive Analysis provides training on the use of the visualization analysis tool, VERDI, and the Model evaluation tool, AMET 1.2.

On the international stage, CMAS scientists Sarav Arunachalam and BH Baek travelled to Brazil during February at the invitation of the University of São Paulo in Brazil to conduct SMOKE and CMAQ training to eleven scientists from South America.

The 2nd CMAS South America Conference and the fifth version of the Colombian Congress and International Conference on Air Quality and Public Health (CASAP 2015) will be held in the city of Bucaramanga, Colombia August 11-14, 2015. Notice is given to the technical and scientific air quality community, members of corporations and entities responsible for ensuring safe environmental and health conditions, as well as to decision makers and interested citizens, to participate in this event and present their work in the form of oral presentations and posters.

Plenary lectures will be offered by national and international experts in areas of air quality modeling, intramural air quality, sampling and characterization of atmospheric pollutants, air quality and public health management, urban planning, emissions inventories, and chemical and physical characteristics of atmospheric aerosols. Educational opportunities are available in the days leading up to the conference and include hands-on training courses on the SMOKE and CMAQ models.

More information about the conference, including registration information, is available here:

http://casap.com.co/es/home.asp (Spanish)
http://casap.com.co/en/home.asp (English)

Finally, CMAS has been invited by the Hong Kong University for Science and Technology to offer CMAQ training in Hong Kong during July 2015. This is the second time the Hong Kong University has invited CMAS to offer such training. The first was during November 2013.

Delegates from Hebei Province, China attend SMOKE, CMAQ and IA training at UNC Chapel Hill's Institute for the Environment.

CALL FOR PAPERS

The call for papers for the upcoming 14th annual CMAS conference (October 5-7, 2015) has been issued. This year's CMAS Conference will feature the following sessions:

- Air Quality Measurements and Observational Studies
- Air Quality, Climate and Energy
- Climate-Wildfire-Air Quality
- Emissions Inventories, Models and Processes
- Fine Scale Modeling and Applications
- Global/Regional Modeling Applications
- Model Development
- Model Evaluation and Analysis
- Sensitivity of Air Quality Models to Meteorological Inputs

We are planning to run parallel sessions during the three days of the conference for the first time to accommodate the increasing number of oral and poster submissions.

CMAS: Latest Model and Tool Releases

The latest CMAS release, **CMAQ v5.1 beta**, was released in preparation for CMAQ v5.1, which is scheduled for release in September 2015. The beta version was created and made available to external collaborators/developers on April 10, 2015. This beta version will undergo extensive application and evaluation over the next few months, which may lead to additional changes before the final release this fall. The release notes (available on cmascenter.org) describe how to obtain a copy of CMAQv5.1 beta.

CMAQ v5.0.2. A patch for the CMAQ v5.0.2 DDM codes is now available. The aerosol sensitivity code was updated to ensure stability and robustness for fine scale model applications. Propagating sensitivity through some ISORROPIA cases were found to be unstable under certain conditions. These cases were replaced with solutions for a simpler ion system. Other minor changes were made to the way small numbers are handled by the sensitivity code. Sensitivity to activity coefficients was also found to function improperly and was disabled. Finally, updates to sensitivity of minor ions in aqueous chemistry were also disabled to further ensure stable model solutions.

C-Line 1.0 was released in February 2015. The Community LINE Source Model (C-LINE) is a web-based model designed to inform the community user of local air quality impacts due to mobile-sources in their region of interest using a simplified modeling approach. As has been established in near-road and near-source monitoring studies, busy roadways and

large emission sources, respectively, may impact local air quality near the source. Reduced-form air quality modeling is a useful tool for examining what-if scenarios of changes in emissions, such as those due to changes in traffic volume, fleet mix, or vehicle speed. Examining various scenarios of air quality impacts in this way can identify potential at-risk populations located near roadways and the effects that a change in traffic activity may have on them. C-LINE computes dispersion of primary mobile source pollutants using meteorological conditions for the region of interest and computes air-quality concentrations corresponding to these selected conditions. The dispersion routines used are based on the analytical version of R-LINE described in Snyder et al., *Atmos. Environ.*, 2013.

Snyder, M. G., Venkatram, A., Heist, D. K., Perry, S. G., Petersen, W. B., & Isakov, V. (2013). RLINE: a line source dispersion model for near-surface releases. Atmospheric Environment, 77, 748-756.

CMAS to Launch New Webinar Series

CMAS is planning to launch a new series of webinars to present topics of interest to the air quality modeling community. Among the candidate topics are:

- Computational methodologies
- Advancements in air quality science and modeling
- Regulatory aspects and model evaluation
- Remote sensing for air quality application
- Air quality and climate

Watch the CMAS announcements regarding the following webinars during the upcoming weeks:

- Sensitivity and Source Apportionment Modeling with CMAQ (Dr. Sarav Arunachalam)
- I/O Api Tutorial; What is new (Dr. Carlie Coats)
- CMAQ post-processing tools that allow inter comparison with remotely sensed data (Ms. Uma Shankar)
- Utilization of CMAQ outputs for Health Exposure studies (Dr. Adel Hanna)
- Modeling Attainment Demonstration with CMAQ (Dr. Sarav Arunachalam)
- Writing computationally efficient environmental models (Dr. Carlie Coats).

CMAS Support Tool Description/Purpose	URL
Central web portal to the CMAS Center	http://www.cmascenter.org
Air quality modeling	http://www.cmaq-model.org
Emissions processing	http://www.smoke-model.org
Economic and health impact modeling	http://www.benmap-model.org
Visualization and graphics	http://www.verdi-tool.org
E-mail–based technical support	http://bugz.unc.edu
Model output data distribution	http://www.cmascenter.org/irods
Model development wiki	http://cmas.wikidot.com
E-mail forum for technical support	m3user@listserv.unc.edu
E-mail forum for announcements	m3list@listserv.unc.edu
E-mail forum for software development discussion	m3dev@listserv.unc.edu
E-mail forum for emissions-related announcements and discussion	emregional@listserv.unc.edu
E-mail forum for BenMAP-related announcements and discussion	benmap-user@listserv.unc.edu