



NARSTO News

A North American Consortium for Atmospheric Research
in Support of Air-Quality Management

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Be Innovative! Attend the NARSTO/CEC Workshop on Innovative Methods for Emission-Inventory Development and Evaluation --- Austin, October 14 - 17

NARSTO/CEC Workshop on Innovative Methods for Emission-Inventory Development and Evaluation Scheduled for October 14 - 17 in Austin

It's largely self-evident that pollution emissions must be characterized accurately, in order to produce credible and useful air-pollution model results. Furthermore, our current ability to quantify emissions is currently at a less than satisfactory state, thus detracting seriously from model performance in most cases. Improvement of this situation is of paramount importance for developing future, more cost-effective pollution-management strategies.

This importance is reflected in substantial allocation of financial, material, and human resources to routine measurement, projection, and modeling of emissions. Despite this substantial effort and considering the results to date, however, it is arguable that the field has reached a point of diminishing returns, where additional investments into conventional activities will produce only limited payback in terms of additional useful information.

Reconciling the important needs for emission inventories and effective resource allocation suggests that innovative techniques could supplement conventional emission characterizations, and enhance the quantitative assessment of emissions in a superior and more cost-effective manner. This suggestion is the motivation for the NARSTO/CEC Workshop on Innovative Methods for Emission-Inventory Development and Evaluation.

All interested persons are encouraged to attend the workshop, and to register as soon as possible to aid in our logistics and planning. The NARSTO Web site (www.cgenv.com/Narsto) provides a formal invitation, a program schedule, and an electronic registration form to assist you in the registration process.

NARSTO PM Assessment Published

This February NARSTO published its Assessment of *Particulate Matter Science for Policy Makers*, which is an eleven chapter overview of the atmospheric behavior of suspended particulate matter (PM) and its relationships with health effects and the regulatory decision process. This initial publication takes the form of a hard-copy printing of the Assessment's executive summary material, combined with a CD version of the total document. A few copies are still available on request to the Management Coordinator's office (jake@cgenv.com). In addition, electronic copies may be downloaded from the NARSTO Web site (www.cgenv.com/Narsto).

Very recently the National Science Foundation provided funding to publish the total Assessment in hard-copy form -- a move that will result in complete copies for library distribution as well as - possibly - documents available on the retail market. We'll continue to provide updates on this situation as things progress.

IGAC Publishes New Book on Atmospheric Chemistry and Aerosols

The International Global Atmospheric Chemistry (IGAC) program, a NARSTO Affiliate Member, has recently published a new book documenting current scientific knowledge of aerosols and atmospheric chemistry. Entitled *Atmospheric Chemistry in a Changing World*, (Springer, ISBN 3-540-43050-4), this book contains seven chapters, which document atmospheric-chemistry developments from a global perspective. It is definitely recommended reading for anyone associated with the field and an invaluable addition to the scientific bookshelf.



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The NARSTO News is published biannually for the purpose of communicating NARSTO activities and progress to members of the extended NARSTO community. Persons wishing to comment on the newsletter or submit material for publication are invited to do so by contacting either Diane Fleshman or Jake Hales in the NARSTO Management Coordinator's office, at the following address:

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NERAM to Hold Conference on Strategies for Clean Air and Health, Rome November 5 - 7



The Network for Environmental Risk Assessment and Management (NERAM) is hosting a conference during November 5 - 7 in Rome, which focuses on Strategies for Clean Air and Health.

The task of identifying strategies for effective air-quality management to improve human health and the environment involves a number of scientific, technical and economic considerations. While lack of full scientific certainty is a limitation to identifying optimal policy interventions, lessons have been learned from experience and research to guide health effective air quality policy development and implementation.

The conference will address the following questions:

- What does health-effects research tell us about the risks from air pollution, including who should be protected, and from what sources or components of the air pollution mixture?
- What is the role of public risk perception in policy development and requirements for risk communication?
- What sources contribute to risks to public health, and what methods are available to link sources to exposures? How can air quality modeling inform local, regional and continent wide air management strategies?
- What are the expected future benefits of existing policies for pollution reduction for cars, power plants, etc.?
- What are the advantages and disadvantages of alternative policy approaches (e.g. NAAQS, limit values, best available technologies?).
- What are currently the most prominent research priorities to improve air-quality management and is the science community targeting these priorities?

The Conference will promote exchange of knowledge between North America and Europe on technical, scientific and management issues to identify policy opportunities for air-quality improvement. Through the presentation of synthesis papers, poster sessions, and break-out group discussions, the meeting will provide a platform for identifying innovative management approaches and future research needs to further support policy decisions. Additional information on the conference is available on www.irr-neram.ca.

EUROTRAC-2 Moves to Conclusion

In June NARSTO Affiliate Member EUROTRAC-2, the 1996 - 2002 second-phase EUREKA project on the transport and transformation of pollutants in the atmosphere over Europe, officially announced its conclusion. Noted for its active multinational coordination, its fostering and inclusion of student scientists, and its prolific scientific publications, EUROTRAC-2's terminal acts were to publish a final report and to hold a "Final Event" in Berlin during March 2003.

Entitled *Towards Cleaner Air for Europe - Science, Tools, and Applications*, the final report takes the form of a two-part book. Part 1 describes results of EUROTRAC's Synthesis and Integration Project, and covers pertinent material in much the same way as do the NARSTO Assessment Documents. Part 2 presents overviews from the Final Reports of EUROTRAC Subprojects. Detailed reports from the scientific subprojects are currently emerging from the subproject offices.

Pauline Midgely, EUROTRAC-2's Executive Secretary, has taken a new position at the Institut für Energie Wirtschaft und Rationelle Energie Anwendung (IER) at Stuttgart University. Marcus Reuther, EUROTRAC Scientific Coordinator, has moved to GSF-Forschungszentrum für Umwelt und Gesundheit offices in Neuherberg.

NARSTO has deeply appreciated its EUROTRAC-2 association during the past years. We wish its scientists well in their future endeavors.



DOE Atmospheric Chemistry Program Plans New Emphasis on Climate Forcing by Aerosols

Recently DOE's Office of Biological and Environmental Research (OBER) announced its intent to restructure its Atmospheric Chemistry Program to focus entirely on aerosol radiative forcing. The new programmatic objective will be to understand chemical, microphysical, and meteorological processes on urban to regional scales affecting the composition and distribution of aerosols influencing direct and indirect radiative forcing of climate. The new program focus is motivated entirely by climate considerations, although the research will also be useful to some air-quality and human-health considerations.

During its July conference call, NARSTO's Executive Steering Committee Co-Chairs discussed implications of DOE's programmatic shift, concluded that aerosol forcing fits squarely under the NARSTO umbrella as defined in its published *Science Plan for Particulate Matter*, and encouraged DOE to continue its association with NARSTO as in the past.

The full reorientation of DOE's program will engage during Fiscal Year 2005, and further announcements are expected as the DOE planning process continues.

Plans for a NARSTO Review of Emission-Inventory Techniques and Technology Currently in Progress

Both the NARSTO PM and Ozone Assessments devoted substantial effort to summarizing relevant knowledge regarding emission inventories, and both made the strong point that emissions – and uncertainties in their current inventories – are key elements limiting a more quantitative and effective approach to pollution management.

Subsequent discussions within the Science Teams and Executive Steering Committee (ESC) led to the suggestion that NARSTO should produce an assessment-like review of current emission-inventory techniques and technology. NARSTO's Executive Assembly reviewed this suggestion at its March 2003 meeting and advised the ESC to proceed with planning. The ESC in turn instructed Emissions-Team Co-Chairs David Mobley and Steve Cadle to convene a small pilot team, develop a more detailed plan, and report back periodically in the process.

This process has moved forward to produce an overall plan for the document, which will be somewhat similar to a standard NARSTO assessment, but will restrict its coverage to selected areas rather than providing a more general coverage. The following formal objectives for the document reflect this focus:

1. To Promote Efficient and Effective Use of Current Inventories

by:

- providing a comprehensive resource for locating and acquiring all current North American inventories;
- providing a comprehensive location resource for emission-inventory application tools, including emission models and emission processors;
- providing guidelines for efficient and appropriate application of existing inventories; and
- assessing the strengths and weaknesses associated with emission inventories in general as well as with specific inventories.

2. To Set the Stage for Improving Future Emission Inventories

by:

- itemizing advanced and potential future techniques for emission-inventory development, including their potential applications, their prospects for enhancing inventory development, and their implementation requirements and timelines;
- discussing possible future archival methodologies for emission-inventory data, which will ensure more accountable, reliable, and robust data-management systems;
- encouraging thoughtful consideration, development, and application of these methods as a consequence of this itemization;
- encouraging the further development of instrumentation, interpretive methodologies, and archival/retrieval systems as a consequence of this itemization; and
- encouraging harmonization of emission inventories prepared for different and adjoining areas, especially among the three NARSTO nations.

3. To Establish a Roadmap for the Future

by:

- charting a recommended plan for development and deployment of the advanced methodologies discussed in this document; and
- recommending actions to enhance the timeliness, quality, and cost effectiveness of current emission-inventory approaches.

(Continued on page 4)



Emission-Inventory Review ... Continued

A report outline, drafted to reflect the above objectives, is currently under review by the ESC. The intended audience for this document includes a wide variety of potential users: chemical-transport modelers, emission-inventory technology developers and practitioners, policy analysts, policy implementors, field-campaign designers and practitioners, and planners

and regulators implementing international agreements, such as NAFTA. We intend that this document will serve as an indispensable desk reference for persons working in these fields.

Quite obviously the October Workshop on Advanced Emission-Inventory Methodologies will be a key resource for launching the document and shaping its information content. Current plans call for completing the project by December 2004.

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