

Guideline on Air Quality Models 2024

A New Chapter

Raleigh, North Carolina, USA
13 - 15 November 2024

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Technical Program – Wednesday, November 13

7:30 am – 5:00 pm
Conference Registration
Esplanade

7:30 am – 8:30 am
Continental Breakfast
Esplanade/Oak Forest B

Opening Keynote Plenary Session

ALL SESSIONS WILL BE HELD IN OAK FOREST A

8:30 am – 8:50 am

Introduction and Welcome

Leah Blinn, Civil & Environmental Consultants, A&WMA
President-Elect; Michael Hammer, Lakes Environmental
Software, General Conference Chair

8:50 am – 11:10 am

Keynote Plenary

Between presentations, there will be a **Networking Break**
from 10:15 am – 10:30 am in Esplanade.

Opening Remarks

Tyler Fox, Group Leader, Air Quality Modeling Group (AQMG), U.S.
EPA Office of Air Quality Planning and Standards (OAQPS)

Regulatory Model Development Priorities 1

- George Bridgers, Model Clearinghouse Director, AQMG, EPA OAQPS
- Clint Tillerson, Model Development Team Lead, AQMG, EPA OAQPS
- James Thurman, Physical Scientist, AQMG, EPA OAQPS
- Alyssa Piliero, Physical Scientist, AQMG, EPA OAQPS
- Matt Porter, Physical Scientist, AQMG, EPA OAQPS
- Chris Misenis, Physical Scientist/Meteorologist, AQMG, EPA OAQPS

U.S. EPA Office of Research & Development (ORD) Research Activities 13

Chris Owen, Research Scientist, Emissions Systems Analysis
Branch, EPA ORD

11:10 am – 11:30 am

Keynote Discussion

11:30 am – 12:00 pm

Featured Presentation: Dispersion Modeling: Remembering Our Past 36

George Schewe, Principal Consultant, Trinity Consultants
(Retired)

12:00 pm – 1:00 pm

Lunch (Oak Forest B)

Session 1: PM2.5 & Ozone Modeling

Co-Chairs: Ralph Morris, Ramboll, and Christopher Warren,
AECOM

1:00 pm – 1:20 pm

MO-10

Challenges in Showing Compliance with the NAAQS Under Climate Change and Increased Wildfire Impacts 53

Ralph Morris, Lynsey Parker, Marco Rodriguez, Jeremiah
Johnson, Liji David, Ramboll

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Development of PM2.5 Background Concentrations for PSD Applications in Georgia 63

Ryan Gallagher, Xiangyu Jiang, Sarah Ray, James Boylan,
Byeong-Uk Kim, Georgia Environmental Protection Division; Ziqi
Gao, University of Virginia

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Measuring Enhanced Ozone Production Due to Wildfires Using Novel VOC Instrumentation 72

Yousaf Hameed, Crystal McClure, Clark County Department of
Environment and Sustainability

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Challenges in Demonstrating Ozone Attainment in Denver with Photochemical Modeling 81

Trang Tran, Marco Rodriguez, Jeremiah Johnson, Ralph Morris,
Ramboll

2:20 pm – 2:40 pm

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Recent Developments in CAMx Photochemical Grid Model Treatment of Wildfires and Other Improvements 90

Ralph Morris, Chris Emery, Gary Wilson, Jeremiah Johnson,
Ramboll

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Session 1 Discussion

3:00 pm – 3:20 pm

Networking Break and Display Viewing

Esplanade

Technical Program

Wednesday, November 13, con't.

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Co-Chairs: Qi Zhang, GHD, and Miriam Hacker, Colorado Department of Public Health and Environment

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Chowdhury Moniruzzaman, Sofia Bisogno, Christos Efstathiou, Lee Ann L. Hill, Nick Heath, Jasmine Lee, Quintin Munoz, Yanelli Nunez, Sebastian T. Rowland, Kelsey R. Bilsback, PSE Healthy Energy; Jeremy K. Domen, PSE Healthy Energy and University of California, Berkeley; Seth B.C. Shonkoff, PSE Healthy Energy, University of California, Berkeley and Lawrence Berkeley National Lab

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Advanced Dispersion Modeling of Hazardous Emissions in the Chemical Corridor of Louisiana 111

Jithin Kanayankottupoyil, Athira Ayyappankutty Nair, Kuruvilla John, University of North Texas, Denton; Helen Malmgren, Xavier University of Louisiana

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Air Quality and Health Co-Benefits Driven from Carbon Neutrality in Southern California 125

Kai Wu, Michael MacKinnon, Scott Samuels, Advanced Power and Energy Program (APEP), UC Irvine

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Navigating Environmental Justice in Air Permitting: Air Dispersion Modeling Case Study in Illinois 133

Ashley Kung, Amal Agharkar, Daniel Guido, ERM

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5:00 pm

APM Atmospheric Modeling and Meteorology Committee Meeting

Technical Program

Thursday, November 14

7:00 am – 5:00 pm

Conference Registration
Esplanade

7:00 am – 8:00 am

Continental Breakfast
Esplanade/Oak Forest B

Session 3: Recent AERMOD Developments

Co-Chairs: Mary Kaplan, AECOM, and Abhishek Bhat, Ramboll

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Rebecca Miller, Michelle G. Snyder, WSP USA Environment and Infrastructure Solutions; Clint Tillerson, US EPA Office of Air Quality Planning and Standards

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Michelle Snyder, Surbhi Thakur, Michael Miller, WSP USA Environment and Infrastructure Solutions; Clint Tillerson, US EPA Office of Air Quality Planning and Standards

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Christopher Warren, Josh Molvar, Robert J. Paine, Jeffrey Connors, AECOM

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PRIME Documented Formulation Problems and Solutions 174

Ron Petersen, Petersen Research and Consulting; Sergio Guerra, Colorado Department of Public Health and Environment; James Paumier, Consultant

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Laura Warren, Mary Kaplan, AECOM

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10:00 am – 10:20 am

Networking Break and Display Viewing
Esplanade

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Co-Chairs: Christopher Warren, AECOM, and Sergio Guerra, Colorado Department of Public Health and Environment

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RLINE: A Discussion of Refinement and Future Plans 197

Michelle Snyder, WSP USA Environment and Infrastructure Solutions; R. Chris Owen, David Heist, US EPA Office of Research and Development

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Sonja Sax, Sharmin Akter, Epsilon Associates

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Matthew Simon, Andrew Eilbert, Abby Raymond, Anjuliee Mittelman, U.S. DOT Volpe National Transportation Systems Center

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Matthew Simon, Lyle Tripp, Andrew Malwitz, Jordan Cumper, Steve Goetzinger, Bradley Nicholas, Alessandra Vennema, Abby Raymond, Amanda Rapoza, Jason Ross, U.S. DOT Volpe National Transportation Systems Center

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Session 4 Discussion

12:00 pm – 1:00 pm

Lunch

Oak Forest B

Session 5: NO2 Modeling Techniques with AERMOD

Co-Chairs: Anthony Schroeder, Trinity Consultants, and Qi Zhang, GHD

1:00 pm – 1:20 pm

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Qi Zhang, Elizabeth Klovenski, GHD

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Anthony Schroeder, Katrina Becker, Trinity Consultants

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Jason Reed, Lexie Brothers, Ramboll

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Joseph Sabato, ALL4

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Jason Reed, Jens Chr. Bennetsen, Ralph Morris, Jelena Popovic, Michael Keinath, Ramboll

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3:00 pm – 3:20 pm

Networking Break and Display Viewing

Esplanade

Technical Program – Thursday, November 14, con't.

Town Hall Meeting

3:20 pm – 4:50 pm

A favorite of past Air Quality Modeling Specialty Conferences, the Town Hall provides a forum for attendees to interact with regulators and modeling community stakeholders. The U.S. EPA is expected to release a revised version of the Guideline on Air Quality Models in fall 2024, and panelists will be given the opportunity to provide their thoughts on the finalized revisions and continued developments in the field of regulatory atmospheric dispersion modeling. Opening remarks will be followed by a question-and-answer session where attendees can submit questions to the panel.

Panelists include:

- **Tyler Fox**, Group Leader, Air Quality Modeling Group, U.S. EPA Office of Air Quality Planning and Standards
- **Sergio Guerra**, Deputy Director for Stationary Sources, Air Pollution Control Division, Colorado Department of Public Health & Environment
- **Yousaf Hameed**, MPA, Principal Air Quality Specialist/Research and Modeling Supervisor, Clark County Department of Environment and Sustainability

Additional speakers from U.S. EPA are invited at time of print. All confirmed speakers are posted in the online version of the program.

Moderator: Tony Schroeder, Principal Consultant, Trinity Consultants

About the Air & Waste Management Association



The Air & Waste Management Association is a not-for-profit, nonpartisan professional organization that enhances knowledge and expertise by providing a neutral forum for technology exchange, professional development, networking opportunities, public education, and outreach to more than 5,000 environmental professionals in 65 countries. A&WMA also promotes global environmental responsibility and increases the effectiveness of organizations to make critical decisions that benefit society. For more information, please visit www.awma.org.

Technical Program – Friday, November 15

7:00 am – 12:00 pm
Conference Registration
Esplanade

7:00 am – 8:00 am
Continental Breakfast
Esplanade/Oak Forest B

Session 6: Innovative Modeling – Emissions Techniques

Co-Chairs: Mary Kaplan, AECOM, and Sergio Guerra, Colorado Department of Public Health and Environment

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Jeffrey Leadford, Pat Sullivan, SCS Engineers

8:20 am – 8:40 am

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AERMOD & Machine Learning to Attribute Air Pollutants to Oil & Gas Activities in Marcellus Shale 300

Sourav Das, Jeremy M. Gernand, Manzhou Yu, John Wang, Md Mostafijul Karim, Jood T. A. Mohsena, Brian Patrick Burns, Pennsylvania State University

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Phyllis Diosey, Richard J. Pope, Hazen and Sawyer

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Umair Ismail, David Ball, Ali Lashgari, Nathan Eichenlaub, Shadan Naseridoust, Dave Risk, Project Canary PBC

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Eduardo Olaguer, Jim Haywood, Michigan Department of Environment, Great Lakes, and Energy

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Networking Break and Display Viewing

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Session 7: Innovative Modeling – Permitting Case Studies

Co-Chairs: Abhishek Bhat, Ramboll, and Miriam Hacker, Colorado Department of Public Health and Environment

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Jeffrey Connors, CareyAnne Howlett, AECOM

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Impact of Gas Shortage on Upper Air Soundings and Availability of Meteorological Data for Modeling 354

Mary Kaplan, Christopher J. Warren, AECOM

11:00 am – 11:20 am

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Pao Baylon, Jason Reed, Emily Tupper, Ramboll

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Simulating Variability of Emissions in Regulatory Air Quality Modeling Analyses 381

Ryan Gesser, Katie Cooper, Georgia-Pacific LLC

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Michael Hammer, Lakes Environmental Software

12:00 pm – 12:20 pm

Session 7 Discussion

12:20 pm

Conference Adjourns