

**International Workshop on Air Quality Forecasting Research
Bolger Conference Center, Osgood Building (maps included)**

Potomac, MD

November 28 — December 1, 2011

DRAFT Agenda (as of November 10)

Monday, November 28

7:00 – 9:00 pm Registration (Osgood Building, entrance of stained glass conference hall)

Tuesday, November 29

7:00 am - Registration

8:15 - 8:25

Welcome Remarks

Steven Fine (Acting Deputy Assistant Administrator, Office of Oceanic and Atmospheric Research, NOAA)

8:25 - 11:15

Plenary Session: International Forecasting Perspectives

Chairs: Veronique Bouchet (Environment Canada) and James Meagher (National Oceanic and Atmospheric Administration)

8:25 – 8:45

Perspective from Europe: Liisa Jalkanen, World Meteorological Organization

8:45 – 9:05

Perspective from Mexico: Augustin Garcia-Reynoso, Universidad Nacional Autónoma de México

9:05 – 9:25

Perspective from the People's Republic of China: Xiao-Ye Zhang, Chinese Academy of Meteorological Sciences

9:25 – 9:35

Perspective from India: Gufran Beig, Indian Institute of Tropical Meteorology

9:35 – 10:05

Keynote: AQ perspectives from Japan and response/impact of the recent Earthquake/Tsunami (Seiji Sugata, National Institute for Environment Studies, Japan)

10:05 – 10:15

BREAK

10:15 – 10:35

Perspective from Australia: Martin Cope, Centre for Australian Weather and Climate Research

10:35 – 10:55

Perspective from Canada: Veronique Bouchet, Environment Canada

- 10:55 – 11:15 Perspective from United States: Ivanka Stajner, National Oceanic and Atmospheric Administration
- 11:15 – 11:20 **Theme 1: Particulate Matter Forecasting Challenges and Progress**
Chairs: Rohit Mathur (U.S. Environmental Protection Agency) and Rahul Zaveri (Pacific Northwest National Laboratory)
- 11:20 – 11:40 Paul Makar (Environment Canada) - *From Off-line to On-Line Particulate Models: Model Intercomparisons and Transition to Forecasting*
- 11:40 – 12:00 Ravan Ahmadov and Stu McKeen* (National Oceanic and Atmospheric Administration) - *Application of a volatility basis set model to secondary organic aerosol simulations across the U.S.*
- 12:00 – 12:20 Wanmin Gong (Environment Canada) - *Review of cloud processing of gases and aerosols in current AQ models*
- 12:20 – 1:20 LUNCH (Osgood's Dining Hall)
- 1:20 – 1:40 Saulo Freitas (Brazilian Institute for Space Research) - *Real time forecast of tropospheric ozone and smoke aerosol produced from vegetation fires emissions over South America*
- 1:40 – 2:00 Rahul Zaveri (Pacific Northwest National Laboratory) - *Modeling dynamic partitioning of semi-volatile organic gases to size-distributed aerosols*
- 2:00 – 2:05** **Theme 2: Meteorological Modeling Needs For Air Quality Forecasting**
Chairs: Paula Davidson (National Oceanic and Atmospheric Administration) and Craig Stroud (Environment Canada)
- 2:05 – 2:25 Arastoo Pour Biazar (University of Alabama-Huntsville) - *Assimilation of Satellite Observed Clouds in WRF*
- 2:25 – 2:45 Jeff McQueen (National Oceanic and Atmospheric Administration) - *Lessons Learned from developing a National Air Quality Forecast Modeling Capability*
- 2:45 – 3:05 David Grawe (University of Hamburg) - *High resolution modeling for London, UK using an urban surface exchange parameterization for METRAS*
- 3:05 – 3:25 David Waugh and Doug Steeves* (Meteorological Service of Canada) - *The role of meteorological factors in pollution transport and characterization at Halifax, Nova Scotia, during the BORTAS-B field campaign*
- 3:25 – 3:35 BREAK

3:35 – 3:40

Theme 3: Emissions Forecasting Developments and Intermittent Sources

Chairs: Claire Granier (National Oceanic and Atmospheric Administration and LATMOS/IPSL, France) and Daniel Tong (NOAA)

3:40 – 4:00

Menghua Wang (National Oceanic and Atmospheric Administration) - *Satellite Ocean Color Remote Sensing and Its Applications for Marine Air Quality Modeling*

4:00 – 4:20

Marje Prank (Finnish Meteorological Institute) - *On contribution of wild-land fires to atmospheric composition*

4:20 – 4:40

Jack Chen (Environment Canada) - *Wildfire Emissions in the Canadian GEM-MACH Air Quality Forecast System*

4:40- 5:00

Pius Lee (NOAA) - *Wild fires in North and Central America as extra-CONUS-domain intermittent sources*

5:00 – 7:30

Poster Session and Reception (Overland Room)

Wednesday, November 30

Continuation of Theme 3: Emissions Forecasting Developments and Intermittent Sources

8:00 – 8:20

Dale Allen (University of Maryland) - *Is the time right to add lightning-NO to operational air quality forecast models?*

8:20 – 8:40

Daniel Tong (National Oceanic and Atmospheric Administration) - *Towards Emission Forecasting*

8:40 – 9:00

Claire Granier (National Oceanic and Atmospheric Administration and LATMOS/IPSL, France) - *Consistency between surface emissions at different scales for use in regional and global forecasting models*

9:00 – 9:30

Keynote: Pollen Forecasting (Mikhail Sofiev, Finnish Meteorological Institute)

9:30 – 9:35

Theme 4: Evaluation and Post-Processing

Chairs: Bill Appleby (Environment Canada) and Stuart McKeen (National Oceanic and Atmospheric Administration)

9:35 – 9:55

Philippe Moinat (Météo France) - *MACC regional air quality multi-model forecasts: rationale and alternatives to the median ensemble*

9:55 – 10:15	Andrew Teakles (Environment Canada) - <i>The XM Tool project: The lessons learned in non-linear statistical modeling for air quality forecasting in Canada</i>
10:15 – 10:30	BREAK
10:30 – 10:50	Youhua Tang (National Oceanic and Atmospheric Administration) - <i>Evaluation of Real-time Air Quality Forecasts from NAM/CMAQ and NMMB/CMAQ Compared to Discover-AQ P-3B Airborne Measurements</i>
10:50 – 11:10	Qian Wang* (Shanghai Environmental Monitoring Center) and Alan Chan (Sonoma Technology, Inc.) – <i>Evaluation of operational air quality forecast models in Shanghai, China</i>
11:10 – 11:30	Gufran Beig (Indian Institute of Tropical Meteorology) - <i>Results from System of Air Quality Forecasting and Research for Commonwealth Games-2010 Delhi India</i>
11:30 – 11:50	Melanie Follette-Cook (Goddard Earth Sciences and Technology Center) - <i>Preliminary Comparisons of CMAQ and in-situ O₃, NO₂, and HCHO observations during DISCOVER-AQ</i>
11:50 – 12:10	Jose Baldasano (Barcelona Supercomputing Center-Centro Nacional de Supercomputación) - <i>To what extent bias-correction techniques improve the air quality forecast over Spain within the CALIOPE</i>
12:10 – 12:30	Bill Ryan (Penn State University) - <i>Use of Numerical O₃ Forecast Models for Warning Guidance in an Operational Environment: Critical Forecast Cases</i>
12:30 – 1:30	LUNCH (Osgood's Dining Hall)
1:50	FREE AFTERNOON/ORGANIZED EXCURSION

Thursday, December 1

8:15 – 8:45	Keynote: Closer Linkage of Air Quality/Weather/Climate Predictions (Gregory Carmichael, University of Iowa)
8:45 – 8:50	Theme 5: Data Assimilation Chairs: Greg Carmichael (University of Iowa) and Paul Makar (Environment Canada)
8:50 – 9:10	Henk Eskes (Royal Netherlands Meteorological Institute) - <i>Estimating NO_x emissions by combining OMI NO₂ measurements, the Lotos-Euros air quality model and the Ensemble Kalman filter technique</i>

9:10 – 9:30 Brad Pierce (National Oceanic and Atmospheric Administration) - *Nested Global and Regional aerosol and ozone assimilation and forecasting experiments during the NOAA CalNex field mission*

9:30 – 9:50 Mariusz Pagowski (National Oceanic and Atmospheric Administration) - *Experiments with Assimilation of Surface PM_{2.5} Observations using EnKF and GSI with WRF-Chem during Summer 2010*

9:50 – 10:10 Tianfeng Chai (National Oceanic and Atmospheric Administration) - *Chemical data assimilation of MODIS AOD with CMAQ*

10:10 – 10:30 Amir Hakami (Carleton University, Ottawa, Canada) - *Adaptive air quality management through operational sensitivity forecasting*

10:30 – 10:45 BREAK

10:45 – 11:45 Breakout Sessions (Osgood Building)

Themes 1& 2 meet in the stained glass conference hall

Theme 3 meet in Room 300

Theme 4 meet in Room 400

Theme 5 meet in Room 500

11:45 – 12:45 Reports From Breakout Sessions and Discussion

12:45 – 12:50 IWAQFR in 2012

12:50 ADJOURN AND LUNCH (Osgood's Dining Hall)

List of Posters

Poster Session & Reception in Overland Room

Theme 1: Particulate Matter Forecasting Challenges and Progress

Craig Stroud (Environment Canada) - *Chemical Transport Model Predictions of Primary Organic Aerosol for Three Sites in Southern Ontario, Canada*

Jian Zeng (NOAA/NESDIS/STAR) - *Development of a MODIS Dust Mask Product for National Weather Service (NWS) Dust Forecast Verification*

Daniel Tong (NOAA/ARL) - *CMAQ modeling of natural and anthropogenic dust aerosols in the United States*

Gupta Sapana (Central Institute of Technology, Raipur, India) - *Assessment of particulate matter present in the Atmospheric aerosol and its adverse health effects*

Theme 2: Meteorological Modeling Needs For Air Quality Forecasting

There are no posters in this theme.

Theme 3: Emissions Forecasting Developments and Intermittent Sources

Yunsoo Choi (NOAA) - *The uncertainty analysis of National Emission Inventory (NEI) 2005 NO_x emissions over the lower middle United States by utilizing top-down approach*

Joseph Vaughan (Washington State University) - *AIRPACT is Testing BlueSky Framework & SMARTFIRE for Wildfire Emissions for Air Quality Forecasting in the Pacific Northwest*

Hyun Kim (NOAA) - *Development of IDL-based Geospatial Data Processor (IGDP) and its applications*

Gregory Frost (NOAA/University of Colorado) - *Addressing Science and Policy Needs with Community Emissions Efforts*

Jorba Oriol (Barcelona Supercomputing Center) - *Online air quality developments undertaken within the NMMB multiscale model at the Barcelona Supercomputing Center*

Sarah Lu (NOAA) - *The impact of dynamic lateral boundary conditions on CONUS*

Sarah Lu (NOAA) - *Simulations of 2010 Eyjafjallajokull eruption using NCEP and ECMWF global aerosol models*

Theme 4: Evaluation and Post-Processing

Martin Stuefer (University of Alaska-Fairbanks) - *A discussion of WRF-Chem/ FIM-Chem volcanic ash particulate simulations of the 2010 Eyjafjallajökull eruption*

Yunsoo Choi (NOAA) - *Use of a satellite-based indicator of ozone production sensitivities to diagnose model bias*

Yunsoo Choi (NOAA) – *Weekly cycles of observed and modeled NO_x and O₃ concentrations as a function of land use type and ozone production sensitivity*

Mike Newchurch (University of Alabama-Huntsville) - *Ground-based Ozone Lidar Network for Air-Quality Studies*

George Grell (NOAA) - *Evaluation of aerosol optical depth forecasts using the FIM-Chem (Flow-following finite volume Icosahedral Model)*

Linda Hembeck (University of Maryland-College Park) - *Investigation of the Community Multiscale Air Quality (CMAQ) model using the Climate Penalty Factor (CPF)*

Yulia Zaitseva (Environment Canada) - *The Processing and Evaluation of Air Quality Data at the Canadian Meteorological Center*

Li Pan (NOAA) - *Community Multiscale Air Quality (CMAQ) model supports North American Airborne Mercury Experiment (NAAMEX): Forecast and Post-data analysis*

Weiqing Zhang (Environment Canada) - *Northwestern Ontario Forest Fire: July 17 to 22 2011*

Timothy Canty (University of Maryland-College Park) - *NO_x Emissions and Lifetimes: Using DISCOVER-AQ to Evaluate CMAQ NO₂ Through Use of Field Observations and Satellite Retrievals*

Clare Flynn (University of Maryland-College Park) - *Correlation analysis of column and surface O₃ and NO₂ from CMAQ and DISCOVER-AQ observations*

Kenneth Pickering (NASA Goddard Space Flight Center) - *Evaluation of CMAQ Forecasts of NO₂ Column Amounts Using In-situ and Remote-Sensing Data from DISCOVER-AQ*

Chris Loughner (University of Maryland) - *Evaluation of CMAQ boundary layer processes and air quality over the Chesapeake Bay and Maryland*

Qian Li (Environment Canada) - *Automating the New Air Quality Health Index Forecast Verification in Canada*

Russell Dickerson (University of Maryland) - *Vertical distributions of trace gases and aerosols: Measurement-model comparisons to improve predictive capabilities*

Virginie Marecal (Météo-France CNRM/GAME) - *Retrospective evaluation of MOCAGE forecasts at Météo-France: towards higher resolution*

Joris Van Bever (Royal Meteorological Institute of Belgium) - *Evaluation of GEM-MACH15 in the free troposphere by comparison with global analyses and models*

Andy Delcloo (Royal Meteorological Institute of Belgium) - *Evaluation of an experimental ensemble forecast system with the CTM CHIMERE, using the 50 members of the operational ECMWF EPS forecasts as NWP input*

Jerry Gorline (NOAA) - *Performance of the National Air Quality Forecast Capability, Urban vs. Rural and Other Comparisons*

Xiao-Ye Zhang (Chinese Academy of Meteorological Sciences) - *Near-real Time Global Biomass Burning Emissions from Multiple Geostationary Instruments and Its Application in GEOS-Chem Model*

Antonopoulos Stavros (Environment Canada) - *Improving O₃, PM_{2.5} and NO₂ GEM-MACH15 surface fields by optimally interpolating Updatable MOS forecasts*

Fantine Ngan (NOAA) - *Performance assessment of five years of the East Texas Air Quality Forecasting system (FTAQ)*

Theme 5: Data Assimilation

Kyle Hosley (University of Maryland) - *Temporal Evolution of the Climate Penalty Factor*

Alain Robichaud (Environment Canada) - *Applications of a semi-empirical adaptative scheme for data assimilation*

Qiang Zhao (IMSG/NOAA) - *Assimilating Satellite Derived Aerosol Optical Depth Products to Improve PM_{2.5} Predictions with Community Multiscale Air Quality Model (CMAQ)*

Mariusz Pagowski (NOAA/NCEP/EMC) - *Assimilation of Surface PM_{2.5} Observations using GSI within NAQFC: Initial Results for Summer 2011*