International Workshop on Air Quality Forecasting Research
NOAA David Skaggs Research Center, Boulder, Colorado
Agenda (updated 30 November 2009)

Oral sessions and breaks: DSRC Multipurpose Room (GC402)
Lunches: DSRC Outreach Classroom (GB124)
Wednesday evening's poster session: DSRC Cafeteria (GC425) & Outreach Classroom (GB124)

Wednesday, 2 December 2009

8:00 – 8:30   **Registration**

8:30 – 8:45   **Welcome and Goals for the Workshop**
Speaker: Jim Meagher (NOAA)

8:45 – 10:20   **Plenary Session: *Research Needs from the Practitioner's Perspective***
Chair: Jim Meagher (NOAA)
8:45 - 9:15   Keith Puckett (EC) - *Research Needs from the EC Perspective*
9:15 - 9:45   Paula Davidson (NOAA) - *Research Needs from the NOAA Perspective*
9:45 - 10:15   Adrian Simmons (ECMWF) - *Research Needs from the European Perspective*
10:15 - 10:20   Discussion

10:20 – 10:40   **Break**

10:40 – 12:00   **Theme 1: *Challenges in PM Forecasting***
Chair: Jerome Fast (PNNL)
10:40 - 11:00   Alma Hodzic (NCAR) - *Can 3D Models Explain Observed Primary and Secondary, Fossil and non-Fossil Organic Aerosols?*
11:00 - 11:20   Ho-Chun Huang (SAIC, NOAA) - *The Impact of Transcontinental Transport on US Particulate Matter Prediction*
11:20 - 11:40   Mike Moran (EC) - *The PM Module in the New Canadian Operational AQ Forecast Model GEM MACH15: Current Status and Future Plans*
11:40 - 12:00   Paul Makar (EC) - *High Resolution Simulations of Particle Sulfate Formation in Lake Breeze Fronts: Process Tracking and Implications for Forecasting*

12:00 – 13:00   **Lunch**

13:00 – 14:00   **Theme 1: *Challenges in PM Forecasting – Continued***
13:00 - 13:20   Wanmin Gong (EC) - *Evaluating Cloud Processes in Particulate Matter Forecasting*
13:20 - 13:40   Jerome Fast (PNNL) - *How Do We Know that Aerosol Forecasts are Improving for the Right Reasons?*
13:40 - 14:00   Discussion

14:00 – 14:20   **Break**

14:20 – 16:00   **Theme 2: *Treating Intermittent Sources in Forecast Models***
Chair: Stuart McKeen (NOAA)
14:20 - 14:40   Daewon Byun (NOAA) - *Improving Air Quality Forecasting through Incremental Reduction of Input Uncertainties*
14:40 - 15:00   Youngsin Chun (NIMR/Korea) - *Asian Dust Early Warning System in Korea*
15:00 - 15:20   Hermann Jakobs (U Cologne) - *Dust Storm Simulation with the Regional Air Quality Forecast Model EURAD*
15:20 - 15:40   David Lavoué (EC) - *Capacity for Forest Fire Forecasting in the Canadian Air Quality Model GEM-MACH*
15:40 - 16:00   Discussion

16:00 – 18:30   **Poster Session for all Themes**

Thursday, 3 December 2009

8:30 – 10:10   **Theme 3:** *Air Quality and Weather Forecasts: Two-way Interactions*
Chair: Véronique Bouchet (EC)

8:30 - 8:50   Georg Grell (NOAA) - *Impact of smoke from the ALASKA 2004 wildfires on radiation and cloud microphysics using WRF-Chem*

8:50 - 9:10   Rohit Mathur (EPA) - *The WRF-CMAQ Two-way Coupled Modeling System: Development, Testing, and Initial Applications*

9:10 - 9:30   Sarah Lu (NOAA) - *The NEMS/GFS-GOCART System: Overview, Status, and Preliminary Result*s

9:30 - 9:50   Alexander Baklanov (Danish Met Institute) - *Overview Of European Research In Online Coupled NWP & ACT Modeling With Two-Way Interaction*

9:50 - 10:10   Discussion

10:10 – 10:30   **Break**

10:30 – 11:50   **Theme 4:** *Post Processing of Air Quality Forecasts*
Chair: Mike Moran (EC)

10:30 - 10:50   Stavros Antonopoulos (EC) - *Forecasting O3, PM25 and NO2 three-hourly spot concentrations using an updatable MOS methodology*

10:50 - 11:10   Edouard Debry (INERIS/France) - *Using ensemble modeling to improve particulate matter forecasting in France*

11:10 - 11:30   Irina Djalalova (U Colorado, NOAA) - *Ensemble and bias-correction techniques for forecasting surface O3 and PM2.5 during the TEXAQS-II experiment of 2006*

11:30 - 11:50   Scott Jackson (EPA) - *Post Processing of Air Quality Forecasts for the AIRNow Forecaster Community*

11:50 – 12:50   **Lunch, Photo**

12:50 – 13:50   **Theme 4:** *Post Processing of Air Quality Forecasts – Continued*

12:50 - 13:10   Frederik Meleux (INERIS/France) - *Post-processing of the PREVAIR operational air quality system over Europe combining model outputs and observations*

13:10 - 13:30   William Ryan (Penn State U) - *Operational Use of Air Quality Numerical Forecast Model Guidance*

13:30 - 13:50   Discussion

13:50 – 14:10   **Break**

14:10 – 16:30   **Theme 5:** *Chemical Data Assimilation in AQ Forecasts*
Chair: Greg Carmichael (U. Iowa)

14:10 - 14:30   Vincent-Henri Peuch (CNRM-GAME, Météo-France, CNRS) - *Chemical data assimilation for AQ prognoses over Europe in GEMS/MACC*

14:30 - 14:50   Adrian Sandu (Virginia Tech) - *Hybrid Methods for Chemical Data Assimilation*

14:50 - 15:10   Tianfeng Chai (STC, NOAA) - *Data assimilation and air quality forecasting using CMAQ*

15:10 - 15:30   Richard Ménard (EC) - *Coupled stratospheric chemistry-dynamics modeling and assimilation*

15:30 - 15:50   Mariusz Pagowski (Colorado State U, NOAA) - *Three-dimensional variational data assimilation of ozone and fine particulate matter observations: Some results using the Weather Research and Forecasting – Chemistry model and Gridpoint Statistical Interpolation*

15:50 - 16:10   R. Bradley Pierce (NOAA) - *Real-time Air Quality Modeling System aerosol and ozone assimilation and forecasting experiments during the NOAA ARCPAC field mission*

16:10 - 16:30   Discussion

16:30 – 17:00   **Workshop Wrap-up**
Speakers: Jim Meagher (NOAA), Mike Howe (EC)

Posters

Theme 1 - Challenges in PM Forecasting
Ravan Ahmadov, (U Colorado, NOAA) - *The sensitivity of PM2.5 aerosol modeling in WRF-CHEM to chemical and meteorological parameterizations*
Youngsin Chun (NIMR/Korea) - *Asian Dust Aerosol Model Operated in Korea*
Colleen Farrell (EC) - *Sea Salt Flux Parameterization Sensitivity in the Chemical Transport Model AURAMS: The contribution of naturally occurring sea salt aerosol to fine particulate mass in Atlantic Canada*
Jeong Eun Kim (NIMR/Korea) - *Intensive Network of PM10 for Asian Dust Early Warning System in Korea*
Paul Makar (EC) - *High Resolution Simulations of Particle Sulfate Formation in Lake Breeze Fronts: Process Tracking and Implications for Forecasting*
Sylvain Ménard (EC) - *A new Canadian operational air quality forecast model: GEM-MACH15*
Steven Peckham (U Colorado, NOAA) - *Progress made towards including wildfires in real-time cloud resolving forecasts at NOAA/ESRL and examining its impact upon weather and air quality*
Craig Stroud (EC) - *Condensation of Gasoline Exhaust Organic Vapour onto Sulfate Aerosol: Flow Tube Studies and Regional Air Quality Modeling*
James Wilczak (NOAA) - *Meteorological Dependence of Surface PM2.5 During the TEXAQS II Field Program: A Comparison of AIRNow Observations with the NMM-CMAQ & WRF-Chem Models*
Jian Zeng (ERT, NOAA) - *Automatic Smoke Detection and Tracking Applied to GOES Observations*

Theme 2 - Treating Intermittent Sources in Forecast Models
Mary Barth (NCAR) - *Implementing Lightning-NOx for studies of Thunderstorms and Chemistry*
Serena Chung (Washington State U) - *Incorporating the Wind Erosion Prediction System (WEPS) for Windblown Dust into a Regional Air Quality Modeling System*
Masayuki Takigawa (AMEST/Japan) - *Comparison of the distribution of mineral dust calculated by WRF/Chem with the Mie scattering Lidar observations in East Asia*
Christine Wiedinmyer (NCAR) - *Estimating emissions and air quality impacts from fires*

Theme 3 - Air Quality and Weather Forecasts: Two-way Interactions
Wayne Angevine (U Colorado, NOAA) - *Improving boundary layer representation for air quality modeling: Stable, cloudy, and coastal boundary layers*
Evelyn Grell (U Colorado, NOAA) - *Comparisons of Off-line and On-line Air Quality Simulations in California's Central Valley*
Sara Michelson (U Colorado, NOAA) - *Evaluation of the Summertime Low-Level Winds Simulated by MM5 in the Central Valley of California*
Youhua Tang (SAIC, NOAA) - *Progress on NEMS/NMMB-AQ Development*

Theme 4 - Post Processing of Air Quality Forecasts
Hermann Jakobs (U Cologne) - *Chemical Weather Forecast for Europe and selected regions - Evaluation and Model Output Statistics*
Shobha Kondragunta (NOAA) - *Observed and Modeled Diurnal Variation in Tropospheric Nitrogen Dioxide*
Stuart McKeen (U Colorado, NOAA) - *Seven air quality forecasts and their ensemble: upper-air comparisons with ozone and aerosol lidar data during the TexAQS-2006 field study*
Vincent-Henri Peuch (CNRM-GAME, Météo-France, CNRS) - *Towards European-scale Air Quality operational services for GMES Atmosphere*
Jacques Rousseau (EC) - *Canadian new Air Quality Health Index, 2008 Evaluation*
Andrew Teakles (EC) - *Development of XM statistical tool for air quality forecasting*
Sarah Wong (EC) - *Air Quality Model Evaluation for Summer 2009 with Specific Focus on Aug 15-17th*

Theme 5 - Chemical Data Assimilation in AQ Forecasts
Greg Carmichael (U Iowa) - *Rapid Update of Emissions Using Chemical Data Assimilation*
Greg Carmichael (U Iowa) - *GURME – The WMO GAW Urban Research Meteorology And Environment Project*

Claire Granier (LATMOS/France, U Colorado, NOAA) - *An integrated forecasting system for global reactive gases in the troposphere and stratosphere – The GRG sub-project of MACC*

Richard Ménard (EC) - *Estimated error variances derived from assimilation residuals in observation space*

Gregory Osterman (JPL, Cal Tech) - *Impact of long range transport on surface air quality in the US: Recent insights from satellite assimilation*

Arastoo Pour-Biazar (U Alabama) - *Examining the utilization of satellite observations in improving air-quality predictions*

Qiang Zhao (NOAA) - *Assimilation of Satellite Derived Aerosol Products to Improve PM2.5 Predictions*