# 8th International Workshop on Air Quality Forecasting Research
## and
## 2015 Pan American/ ParaPan American Games Legacy Data Workshop

## Toronto, Ontario
## January 10 – 12, 2017

## Agenda
*as of January 6, 2017*

**Day 1: 8th IWAQFR – Tuesday, January 10, 2017**

| Time / Session | Topic | Chairs / Presenters |
|---|---|---|
| 8:00 – 8:45 a.m. | Registration | |
| 8:45 – 9:05 a.m. | Welcome | Heather Morrison (Environment and Climate Change Canada) |
| 9:05 – 9:30 a.m. | Perspectives on air quality forecasting in Canada | Véronique Bouchet (Environment and Climate Change Canada) |
| 9:30 – 9:55 a.m. | NOAA's perspective and development of capabilities needed for air quality predictions | Ivanka Stajner (National Oceanic and Atmospheric Administration) |
| 9:55 – 10:20 a.m. | Expanding the Role of Atmospheric Composition in Environmental Prediction and Services | Greg Carmichael (Iowa University) |
| 10:20 – 10:40 a.m. | Break | |
| **Session 1:** | **Operational Forecasting and Communicating Impacts** | **Chairs: Bill Appleby, Dave Henderson** |
| 10:40 – 11:00 a.m. | Recent upgrades to the chemical transport model used in the Canadian operational regional air quality deterministic prediction system | Michael Moran (Environment and Climate Change Canada) |
| 11:00 – 11:20 a.m. | Update on operational air quality predictions for the United States: new predictions of fine particulate matter ($PM_{2.5}$) | Ivanka Stajner (National Oceanic and Atmospheric Administration) |
| 11:20 – 11:40 a.m. | COPERNICUS-CAMS50: An air quality ensemble modelling system over Europe. From research to operation. | Marion Pithon (Meteo France) |
| 11:40 – 12:00 p.m. | EcoForecast.eu-8 years of operational air quality forecasting for Central Europe | Jacek Kaminski (Institute of Geophysics, Polish Academy of Sciences (IG PAS)) |
| 12:00 – 1:30 p.m. | Lunch | |
| 1:30 – 1:50 p.m. | The Modeling Analysis and Prediction initiative for Air Quality (MAP-AQ) | Guy Brasseur (Max Planck Institute for Meteorology) |

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|---|---|---|
| 1:50 – 2:10 p.m. | Air quality forecast for 2010 EXPO in Shanghai, 2014 Youth Olympic Games in Nanjing and 2016 G20 in Hanzhou, China | Tijian Wang (Nanjing University) |
| 2:10 – 2:30 p.m. | Multi-Model Ensemble Forecasts of Regional Air Quality in China | Idir Bouarar (Max Planck Institute for Meteorology) |
| 2:30 – 2:50 p.m. | Evolution of the Canadian Operational Air Quality Forecast Systems: Addressing Today's Needs and Preparing for Tomorrow | Didier Davignon (Environment and Climate Change Canada) |
| 2:50 – 3:10 p.m. | Break | |
| Session 2: | Emissions Forecasting | Chairs: Mike Moran, Daniel Tong |
| 3:10 – 3:30 p.m. | Rapid update of anthropogenic NOx emissions with fused satellite and ground observations: Initial application for NOAA ozone forecasting during the summer 2016 | Daniel Tong (National Oceanic and Atmospheric Administration) |
| 3:30 – 3:50 p.m. | Impact of new North American emissions inventories on urban mobile source emissions for high resolution air quality modeling | Junhua Zhang (Environment and Climate Change Canada) |
| 3:50 – 4:10 p.m. | New developments in wildfire emission and dispersion forecasting with FireWork, the operational Canadian AQ forecast system with near-real-time biomass-burning emissions | Jack Chen (Environment and Climate Change Canada) |
| 4:10 – 4:30 p.m. | Long term forecast and modelling of South Athabasca Oil Sands and provincial emissions in Alberta | Xin Qiu (Novus Environmental Inc.) |
| 4:30 – 5:00 p.m. | Break | |
| 5:00 – 7:00 p.m. | Poster Session | |

**Day 2: 8<sup>th</sup> IWAQFR – Wednesday, January 11, 2017**

Day 2: 8th IWAQFR – Wednesday, January 11, 2017

| Time / Session | Topic | Chairs / Presenters |
|---|---|---|
| Session 3: | Data Assimilation and Evaluation | Chairs: Richard Ménard; Greg Carmichael |
| 9:00 – 9:20 a.m. | Use of observations by the Copernicus Atmosphere Monitoring Service for data assimilation and product evaluation over Europe | Matthieu Plu (Meteo-France) |
| 9:20 – 9:40 a.m. | Development of a high resolution planetary boundary layer height analysis system using aircraft, radiosonde, and NYS mesonet profiler data and the analysis impact on atmospheric transport and dispersion | Jeongran Yun (State University of New York) |
| 9:40 – 10:00 a.m. | Development of an operational assimilation system utilizing a Regional Chemistry Transport Model of Japan Meteorological Agency | Masaaki Ikegami (Japan Meteorology Agency) |
| 10:00 – 10:20 a.m. | Experimental post-processing of air quality forecasts for the Toronto 2015 PanAm and ParaPanAm Games | Andrew Teakles (Environment and Climate Change Canada) |
| 10:20 – 10:40 a.m. | Break | |

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| 10:40 – 11:00 a.m. | Improving air quality (and weather) predictions via application of new data assimilation techniques applicable to coupled models | Greg Carmichael (University of Iowa) |
| 11:00 – 11:20 a.m. | UV Index Forecasting | Yves Rochon (Environment and Climate Change Canada) |
| 11:20 – 11:40 a.m. | Development of a new analysis and data assimilation of surface pollutants at Environment and Climate Change Canada | Richard Ménard (Environment and Climate Change Canada) |
| 11:40 – 12:00 p.m. | Assimilating compact phase space retrievals (CPSRs): Comparison with independent observations (MOZAIC in situ and IASI retrievals) and extension to assimilation of truncated retrieval profiles | Arthur Mizzi (National Center for Atmospheric Research) |
| 12:00 –1:30 p.m. | Lunch | |
| 1:30 – 1:50 p.m. | Performance analysis of the Canadian operational statistical air quality post-processing package | Radenko Pavlovic (Environment and Climate Change Canada) |
| Session 4: | Interactions between Meteorology and Air Quality Prediction | Chairs: Paul Makar, Heather Morrison |
| 1:50 – 2:10 p.m. | The impact of more complexity in aerosol and chemistry modules on the aerosol predictions within a global online modeling system | Li Zhang (National Oceanic and Atmospheric Administration ESRL) |
| 2:10 – 2:30 p.m. | Impacts of forest shading/turbulence and aerosol direct/indirect effect feedbacks on urban air quality forecasts | Paul Makar (Environment and Climate Change Canada) |
| 2:30 – 2:50 p.m. | Impacts of urban heat-island circulation on distributions of air pollutants over Tokyo | Makoto Deushi (Japan Meteorological Agency) |
| 2:50 – 3:10 p.m. | Break | |
| Session 5: | Urban and High-Resolution Air Quality Modelling | Chairs: Craig Stroud, Pius Lee |
| 3:10 – 3:30 p.m. | Modelling the sensitivity of population change scenarios at 1.0 km resolution using CMAQ | Wayne Boulton (RWDI) |
| 3:30 – 3:50 p.m. | Fine resolution regional dust forecast | Pius Lee (National Oceanic and Atmospheric Administration) |
| 3:50 – 4:10 p.m. | High resolution simulations of Alberta and Saskatchewan using GEM-MACH: Comparing continuous emissions monitoring versus inventory estimates | Ayodeji Akingunola (Environment and Climate Change Canada) |
| 4:10 – 4:30 p.m. | Potential benefits of urban high-resolution NWP predictions to air quality modelling | Sylvie Leroyer (Environment and Climate Change Canada) |
| 4:30 – 4:50 p.m. | Towards an operational air-quality forecasting system at urban scale at ECCC | Rodrigo Munoz-Alpizar (Environment and Climate Change Canada) |
| 4:50 – 5:00 p.m. | Closing Remarks | |

**Day 3: PanAm/ParaPanAm Legacy Workshop – Thursday, January 12, 2017**

| Time / Session | Topic | Speaker |
|---|---|---|
| **Introduction and Overview** | | |
| 8:30 - 8:40 a.m. | Introduction to Special Session | Craig Stroud/Paul Joe ECCC |
| 8:40 - 9:00 a.m. | Overview of WMO/GURME | Veronique Bouchet ECCC |
| 9:00 - 9:20 a.m. | London 2012 and Air Quality Forecasting Developments at the UK Met Office | Matthew Hort UK Met Office |
| 9:20 - 9:40 a.m. | Overview of the 2015 Pan Am Games Legacy Data Set | Craig Stroud/ David Sills ECCC |
| 9:40 - 10:00 a.m. | Health and Air Quality Portfolio for the 2015 Pan and ParaPan Games: Approach, Legacy and Lessons Learned | Dave Henderson ECCC |
| 10:00 - 10:15 a.m. | Break | |
| **Monitoring** | | |
| 10:15 - 10:35 a.m. | Resolution of Local and Regional Sources Using Near Road and Background Measurement Sites | Cheol Jeong (University of Toronto)/Yushan Su (MOECC) |
| 10:35 - 10:55 a.m. | Dissecting the Multiple Scales of Urban Air Pollutant Variability using a Mobile Lab | Jeff Brook ECCC |
| 10:55 - 11:15 a.m. | Mobile Meteorological Measurements during the 2015 Toronto Games | David Sills (ECCC)/James Voogt (University of Western Ontario) |
| **Modelling** | | |
| 11:15 - 11:35 a.m. | Lessons Learned from the High-Resolution Air Quality Forecasting Demonstration During the 2015 Pan Am Games | Craig Stroud ECCC |
| 11:35 - 11:55 a.m. | Performance of a sub-km and urban version of the Global Environmental Multiscale (GEM) atmospheric model for Toronto's 2015 Pan American Games | Stephane Belair ECCC |
| 11:55-1:00 p.m. | Lunch | |
| **Next Steps** | | |
| 1:00 – 1:20 p.m. | Observations and numerical modeling study of urban meteorology in Tokyo | Makoto Deushi JMA, Japan |
| 1:20 - 1:40 p.m. | WISE program: Observation, Modeling and Application for Urban Meteorology in Seoul | Hwang Seung On HUFS, South Korea |
| 1:40 - 2:45 p.m. | Urban Environmental Modelling Panel Discussion Craig Stroud (moderator) | Greg Carmichael (Iowa University and GAW Chair) Stephane Belair (Meteorological Research Division, ECCC) Matthew Hort (Atmospheric Dispersion and Air Quality, UKMO) Véronique Bouchet (Canadian Meteorological Centre Operations Division & GURME Chair) Guy Brasseur (Max-Plank Institute & WCRP Chair) |