

**Séminaire ven 23 Avr 2010 11h / Seminar Fri Apr 23rd 2010 11h**

**Conférencier/Lecturer:** Stavros Antonopoulos

**Sujet/Subject:** UMOS-AQ: Forecasting  $O_3$ ,  $PM_{25}$   
and  $NO_2$  hourly spot concentrations  
using an updatable MOS methodology

**Présentation/Presentation:** Anglais / English

**Lieu/Room:** Salle des vents (Dorval)

**iweb:** <http://web-mrb.cmc.ec.gc.ca/mrb/rpn/SEM/>

**web:** <http://collaboration.cmc.ec.gc.ca/science/rpn/SEM/index.php>

**Résumé/Abstract**

The updatable MOS (UMOS) methodology has shown great ability to improve direct model output with weather elements such as temperature, wind and probability of precipitation. During the seminar, the steps taken to expand it to air-quality forecasting (UMOS-AQ) will be presented.

Air-quality and meteorological data are used to produce hourly spot concentration forecasts of ozone ( $O_3$ ), particulate matter  $2.5\mu m$  ( $PM_{25}$ ) and nitrogen dioxide ( $NO_2$ ), up to 48 hours.

The UMOS-AQ system produces one equation per station, per predictand, per model run and per forecast hour. An overall description of the UMOS-AQ system will be highlighted. Verification results will be presented along with recent developments and improvements. Verifications on an independent sample show encouraging results with significant improvement over the model's direct forecast. The UMOS-AQ system greatly reduces the model's bias and error while improving its skill.