

**Programme for the  
World Meteorological Organization's  
"Training Course on Seamless Prediction of Air Pollution in Africa"  
Second Workshop**

Kenya Meteorological Department, Nairobi, Kenya, 9 – 12 October 2019

**Chairs: Alexander Baklanov, Ranjeet S. Sokhi, and Yang Zhang**

**DAY 1: WEDNESDAY, 9 OCTOBER 2019**

***TRAINING WORKSHOP OPENING SESSION***

**09:00-09:30**

**Welcome Remarks**

Ms Stella Aura, Director, Kenya Meteorological Department  
Prof Gregory Carmichael, GAW SSC Chair  
Mr Mustafa Adiguzel, Scientific Officer, WMO ETR Office

**09:30-9:50**

**Group Photo Session followed by Coffee/Tea Break**

***LECTURES & TUTORIALS SESSION***

**9:50-10:35**

**Seamless AQF for Africa initiative and outcomes from the Pretoria workshop**

Profs. G. Carmichael and A. Baklanov

**10:35-11:20**

**PREFIA workshop outcomes: modelling exercise and AQF for Africa**

Prof. R.S. Sokhi

**11:20-12:05**

**Best Practices and Training Materials for Chemical Weather/Air Quality Forecasting (CW-AQF)**

Prof. Yang Zhang

**12:05-12:50**

**Fundamentals of 3-D air quality modelling and forecasting and chemical data assimilation**

Prof. G. Carmichael

**12:50-13:15**

**Preview of core model parallel training sessions**

- (1) Yang Zhang, Beeker Abdelrehim, Melaku Yigiletu
- (2) Ranjeet S. Sokhi and Rajasree VPM
- (3) Mikhail Sofiev and Rostislav Kouznetsov

**13:15-14:15**

**Lunch Break**

- 14:15-15:00 Atmospheric Composition and Numerical Weather Prediction**  
Dr. J. Flemming
- 15:00-15:45 Global AQF and reanalysis products by CAMS/ECMWF: opportunities for African users**  
Dr. J. Flemming
- 15:45-16:00 Coffee/Tea Break**
- 16:00-16:45 First joint tutorial session: Practical exercises for using and applications of the CAMS products for Africa**  
Dr. J. Flemming
- 16:45-17:30 Second joint tutorial session: Practical exercises for Egypt experience of operational AQF**  
Dr. Ashraf Zakey
- 17:30-18:15 Third joint tutorial session: Practical exercises for S. Africa experience of operational AQF**  
Dr. Melaku Yigletu

## DAY 2: THURSDAY, 10 OCTOBER 2019

### **LECTURES & TUTORIALS SESSION**

- 09:00-09:45**      **Model Types and Existing Modeling systems for AQF (with example of selected models)**  
Prof. Yang Zhang
- 09:45-10:30**      **Fourth joint tutorial session: Practical exercises for using SDS-WAS NAMEE Regional Center products**  
Dr. Sara Basart  
(Remote Presentation)
- 10:30-11:00**      **Coffee/Tea Break**
- 11:00-11:45**      **Emission inventories and data for AQF models**  
Dr. Cathy Leal-Liousse, GEIA lector  
(Remote Presentation)
- 11:45-12:30**      **Atmospheric Chemistry and Aerosol**  
Prof. Yang Zhang
- 12:30-14:00**      **Lunch Break**
- 14:00-15:30**      **Parallel tutorial session 1 (WRF-Chem intro)**  
Prof. Y. Zhang and Dr. Aboubakr Abdallah
- 14:00-15:30**      **Parallel tutorial session 2 (WRF-CMAQ intro)**  
Prof. R.S. Sokhi and Dr. Rajasree VPM
- 14:00-15:30**      **Parallel tutorial session 3 (SILAM intro)**  
Prof. M. Sofiev and Dr. R. Kuznetsov
- 15:30-16:00**      **Coffee/Tea Break**
- 16:00-17:30**      **Parallel tutorial session 1 (WRF-Chem)**  
Prof. Y. Zhang and Dr. Aboubakr Abdallah
- 16:00-17:30**      **Parallel tutorial session 2 (WRF-CMAQ)**  
Prof. R.S. Sokhi and Dr. Rajasree VPM
- 16:00-17:30**      **Parallel tutorial session 3 (SILAM)**  
Prof. M. Sofiev and Dr. R. Kuznetsov

**DAY 3: FRIDAY, 11 OCTOBER 2019**

**LECTURES & TUTORIALS SESSION**

- 09:00-09:45**     **Air quality model downscaling and data assimilation**  
Prof. M. Sofiev
- 09:45-10:30**     **Model Input, Preparation and Generating a forecast**  
Prof. M. Sofiev
- 10:30-11:00**     **Coffee/Tea Break**
- 11:00-11:45**     **Model Output and Data Management, Evaluating a forecast and its applications /end-users**  
Prof. R.S. Sokhi
- 11:45-12:30**     **Integrated Urban Weather and Environment Prediction Systems and Services**  
Profs. R.S. Sokhi and A. Baklanov
- 12:30-14:00**     **Lunch Break**
- 14:00-15:30**     **Parallel tutorial session 1 (WRF-Chem)**  
Prof. Y. Zhang and Dr. Aboubakr Abdallah
- 14:00-15:30**     **Parallel tutorial session 2 (WRF-CMAQ)**  
Prof. R.S. Sokhi and Dr. Rajasree VPM
- 14:00-15:30**     **Parallel tutorial session 3 (SILAM)**  
Prof. M. Sofiev and Dr. R. Kuznetsov
- 15:30-16:00**     **Coffee/Tea Break**
- 16:00-17:30**     **Parallel tutorial session 1 (WRF-Chem)**  
Drs. Aboubakr Abdallah and Melaku Yigiletu, and Prof. Y. Zhang
- 16:00-17:30**     **Parallel tutorial session 2 (WRF-CMAQ)**  
Prof. R.S. Sokhi and Dr. Rajasree VPM
- 16:00-17:30**     **Parallel tutorial session 3 (SILAM)**  
Prof. M. Sofiev and Dr. R. Kuznetsov

**DAY 4: SATURDAY, 12 OCTOBER 2019**

***SYMPOSIUM AND DISCUSSION OF AQF for African countries***

- 09:00-10:30**      **Parallel tutorial session 1 (WRF-Chem)**  
Prof. Y. Zhang and Dr. Aboubakr Abdallah
- 09:00-10:30**      **Parallel tutorial session 2 (WRF-CMAQ)**  
Prof. R.S. Sokhi and Dr. Rajasree VPM
- 09:00-10:30**      **Parallel tutorial session 3 (SILAM)**  
Prof. M. Sofiev and Dr. R. Kuznetsov
- 10:30-11:00**      **Coffee/Tea Break**
- 11:00-12:30**      **Parallel tutorial session 1 (WRF-Chem)**  
Prof. Y. Zhang and Dr. Aboubakr Abdallah
- 11:00-12:30**      **Parallel tutorial session 2 (WRF-CMAQ)**  
Prof. R.S. Sokhi and Dr. Rajasree VPM
- 11:00-12:30**      **Parallel tutorial session 3 (SILAM)**  
Prof. M. Sofiev and Dr. R. Kuznetsov
- 12:30-14:00**      **Lunch Break**
- 14:00-14:30**      **Oral presentation by WRF/Chem group**
- 14:30-15:00**      **Oral presentation by WRF-CMAQ group**
- 15:00-15:30**      **Oral presentation by SILAM group**
- 15:30-16:00**      **Coffee/Tea Break**
- 16:00-17:30**      **Oral presentations by each country (5-min each)**  
**(Algeria, Cameroon, Cote d'Ivoire, DR Congo, Egypt, Ethiopia, Ghana, Kenya, Madagascar, Morocco, Namibia, Nigeria, Rwanda, Senegal, South Africa, Tanzania)**
- 17:30-18:00**      **Panel Discussions, Recommendations and Concluding Remarks** (R.S. Sokhi, M. Sofiev, Y. Zhang, Ashraf Zakey, and Melaku Yigiletu)
- 18:00**              **Closure of the Training Workshop & Symposium**