Geophysical Research Abstracts
Vol. 18, EGU2016-13631, 2016
EGU General Assembly 2016

Ensemble modeling of multi-meteorological schemes to the regional haze episode over eastern China

Ziqiang Jiang, Fei Jiang, and Hengmao Wang
International Institute for Earth System Science, Nanjing University, Nanjing, China

Along with the severe air quality problem in China, air quality forecast is getting more and more concern currently. Besides the uncertainties in emission inventories and initial conditions, the uncertainties in meteorological simulation may also affect the air quality forecast, and generally the accuracy of meteorlogical simulation may be more important than the others. Therefore, it is urgent to reduce the uncertainties in weather prediction. One of the valuable methods to overcome this problem is the ensemble sensitivity modeling of multi-meteorological schemes. This study evaluates the impact of different combinations of meteorological schemes on WRF/Chem model forecasts, which is done during a regional haze episode over eastern China in December 2013 with a 12 km horizontal resolution. The ensembles are also compared to the individual modeling and to each other using data from some satellite aerosol retrieval products and hundreds of surface observation sites, obtained from the Ministry of Environmental Protection (MEP) of China. In addition, the multiple aerosol species at two air quality super-sites are also adopted to evaluate the multiple results. Overall, the ensemble simulations show encouraging agreement with the observed aerosol concentrations, suggesting that it is helpful to use ensemble weather forecasts in air quality prediction.