



Evaluating aerosol impacts on Numerical Weather Prediction in two extreme dust and biomass-burning events

Samuel Remy, Angela Benedetti, Luke Jones, Miha Razinger, and Thomas Haiden
ECMWF, Chemical Aspects, Reading, United Kingdom (remy.samuel@gmail.com)

The WMO-sponsored Working Group on Numerical Experimentation (WGNE) set up a project aimed at understanding the importance of aerosols for numerical weather prediction (NWP). Three cases are being investigated by several NWP centres with aerosol capabilities:

a severe dust case that affected Southern Europe in April 2012, a biomass burning case in South America in September 2012, and an extreme pollution event in Beijing (China) which took place in January 2013. At ECMWF these cases are being studied using the MACC-II system with radiatively interactive aerosols. Some preliminary results related to the dust and the fire event will be presented here. A preliminary verification of the impact of the aerosol-radiation direct interaction on surface meteorological parameters such as 2m Temperature and surface winds over the region of interest will be presented. Aerosol optical depth (AOD) verification using AERONET data will also be discussed. For the biomass burning case, the impact of using injection heights estimated by a Plume Rise Model (PRM) for the biomass burning emissions will be presented.