EMS Annual Meeting Abstracts
Vol. 15, EMS2018-262, 2018

The first attempt of WRF/Chem application in Vojvodina region

Zorica Podrascanin
University of Novi Sad, Faculty of Sciences, Department of Physics (zorica.podrascanin@df.uns.ac.rs)

The Real-Time Air Quality Forecast is the main source of information needed by government institutions to reduce the anthropogenic emissions and prevent the high level of the air pollution in certain area. The first step in establishing such a system is to choose and set up of a three-dimensional air quality forecast model. For that purpose the Weather Research and Forecasting model coupled with Chemistry (WRF/Chem) model was chosen and the first model set up is presented in this work. The second generation Regional Acid Deposition Model (RADM2) gas-phase mechanism and the Modal Aerosol Dynamics Model for Europe with the secondary organic aerosol model (MADE/SORGAM) was selected for this run. The center of model domain was at 45.25 N and 9.85 E. The model was run with horizontal grid size of 5x5 km and with 151x151 grid points. The chosen domain covers Vojvodina region and surrounding areas. The gridded anthropogenic emission from the European Monitoring and Evaluation Programme (EMEP) with 0.1°x0.1° horizontal resolution was used for this run. The WRF/CHEM was spin-up 15 days before starting the first 24 forecast cycle of 30 days that was analyzed. The modeled concentrations were compared to measured hourly data at the Serbian Environmental Protection Agency (SEPA) stations in this region in August, 2016. The present analyze describes the first preliminary results of the model validation and verification. The further analyses will take into account the different model resolution, gas-phase mechanism and anthropocentric emission before the start of operational air quality forecast in Vojvodina region.