



Evaluation of the GEM-AQ simulations for the Air Quality Model Evaluation International Initiative (AQMEII)

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A multiscale, on-line meteorological and air quality model GEM-AQ was used to simulate ozone and particulate matter over the European continent in 2006, as a part of the Air Quality Model Evaluation International Initiative (AQMEII). In contrast to the majority of models participating in the Phase I of AQMEII, the GEM-AQ configuration employed here utilized neither external meteorological fields nor lateral boundary conditions, owing to the global-extent and variable grid resolution of the model setup. We will present evaluation results for global model performance statistics calculated for the entire year and more detailed performance analysis of pollution episodes.

Evaluation of meteorological parameters includes comparisons of model-predicted wind, temperature and cloudiness with hourly observations at surface weather stations, daily maxima, and comparison with upper-air soundings at selected sites.

Frequency distribution of principal boundary layer parameters and its spatial structure will be presented. Air quality predictions are assessed in terms of ground-level daily mean ozone concentrations and its daily peak values, vertical structure as inferred from ozone soundings, and particulate matter daily mean concentrations at the surface.