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Ozone-Forecasts for Austria with ALADIN/CAMx -Part II: Improvements of the Model System

B. C. Krüger (1), K. Baumann-Stanzer (2), M. Langer (2), and M. Hirtl (2)

(1) Institute of Meteorology, Department Water, Atmosphere, and Environment, University of Natural Resources and Applied Life Sciences Vienna (BOKU), Austria, (2) Central Institute for Meteorology and Geodynamics (ZAMG), Vienna, Austria, (bernd.krueger@boku.ac.at, Fax: +43-1-47654-5610)

A model system that has been used for an air quality forecast in Austria in the ozone season 2005 (see poster by Baumann-Stanzer et al., this session) has been modified to improve its performance for the ozone season 2006. The system uses the operational regional weather forecast of the Central Institute for Meteorology and Geodynamics (ZAMG) performed with the model ALADIN. The meteorological fields are combined with an emission model and the photochemical transport model CAMx.

One improvement concerns the estimate of the boundary conditions of the coarse grid, either taken from a global model or calculated by the model itself. The latter method may be useful for climate runs with a photochemical model also. The effect of different estimates for the global ozone column, which affects the photolysis rates, is investigated. Some chemical mechanisms, namely SAPRC99 and different modifications of CBM-IV have been tested, and different sets of emission data were used.

For every modification the effect on the model results has been tested for a three week period from 2005 and the changes were quantified.