

# **On the analysis of impact of biogenic emission on tropospheric ozone production in model SMOG**

**T. Halenka** (1), J. Brechler (1), M. Belda (1), R. Cesari (2)

(1) Charles University, Fac. of Mathem. and Physics, Dept. of Meteorology and Environment Protection (tomas.halenka@mff.cuni.cz), (2) Institute of Atmospheric Science and Climate

A common problem of almost all urban areas in Europe is summer photochemical smog, the episodes of which occur in summer months as consequences of high production of air-pollution in urban areas. Tropospheric ozone, the main part of the summer photochemical smog, is a result of a cycle of the chemical reactions, where biogenic emissions play important role as well, mainly in remote areas. To accept some appropriate measures that can prevent the high O<sub>3</sub> concentration episodes it is necessary to know appropriate contribution of different sources, with respect to their type, height, distance etc. The main goal of the presented model study is to show, how the different types and individual emission sources in particular can affect the O<sub>3</sub> ground concentration.

The upgraded Lagrangian photochemical puff model SMOG driven by meteorological conditions from ETA model is used for selected months and validated against the measurement in whole area of Czech Republic. The importance of biogenic emissions is clearly seen in remote areas mainly, the effect can be seen for selected observational points in time series across some ozone episodes. The effect of transport from sources abroad is discussed as well, the contributions of the puffs along the trajectories of different types of sources are evaluated providing the information not only about individual sources but giving some insight on the influence of progress of chemistry between and/or in puffs along the trajectories.