

**MODELLING STOMATAL OZONE FLUX AND DEPOSITION TO  
CONIFEROUS AND DECIDUOUS FOREST IN THE CZECH REPUBLIC**

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**Abstract**

Estimates of ozone concentration and deposition flux to coniferous and deciduous forest in the Czech Republic on a 1 x 1 km grid during growing season (April-September) of the year 2006 are presented. Ozone deposition flux was derived from ozone concentrations in the atmosphere and from its deposition velocities. To quantify the spatial pattern in surface concentrations at 1 km resolution incorporating topography, empirical methods are used. The procedure maps ozone concentrations from the period of the day when measurements are representative for the forest areas of countryside. The effects of boundary layer stability are quantified using the observed relationship between the diurnal variability of surface ozone concentration and altitude. Ozone deposition velocities were calculated according to a multiple resistance model incorporating aerodynamic resistance ( $R_a$ ), laminar layer resistance ( $R_b$ ) and surface resistance ( $R_c$ ). Surface resistance ( $R_c$ ) comprises stomatal resistance ( $R_{sto}$ ).  $R_{sto}$  was calculated with respect to global radiation, surface air temperature and land cover.

**Key words:** ozone concentration, ozone deposition, resistance model, stomatal fluxes, topographic effects, ozone