



Current state of the TREX deposition model and the main line of the further development

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An Eulerian photochemical reaction-transport model and a detailed dry deposition model have been coupled to develop the TREX (TRansport-EXchange) model at Eötvös Loránd University, Budapest. The model was inspired for the purpose of appreciating of air pollution, and simulating of accidental release. In this study the current state and results of the deposition part of TREX model is presented. Based on EMEP data, Central European region is a very hard tropospheric ozone-loaded area. The elevated ozone concentrations can be harmful to agricultural, natural vegetation and to the human health too. Since ozone enters to the plant through the stomata, the plant reaction is more closely related to the ozone flux than to atmospheric concentrations. The dry deposition velocity and both total and stomatal fluxes of ozone has been calculated based on the aerodynamic, quasi-laminar boundary layer and canopy resistance for 11 different vegetation types over Hungary. In detail both concentration and stomatal flux of the ozone have been estimated over deciduous, coniferous and mixed forests for July, 1998 over Hungary. Differences between concentration- and flux-based indices have also been analysed. Besides that, in the frame of a detailed sensitivity analyses, the effects of various meteorological data and vegetation parameters on the ozone flux has been also investigated. Further possibilities of the research and technical development of the TREX model are also presented.