



Expected changes of near surface ozone fluxes in Europe due to the effects of global warming

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Tropospheric ozone is one of the most important air pollutants that effects both vegetation and human health. Based on previous studies, both the atmospheric concentration and the dry deposition velocity of ozone could change due to the effects of global warming. Ozone concentration may vary in the future in the function of ozone precursors emissions and the efficiency of photochemical reactions. Diverse changes of the ozone deposition velocity in time and space could also be predicted due to the expected changes of atmospheric variables and plant physiological factors. In this impact study, we focused on the possible changes of ozone fluxes based on these complex effects and the effective ozone load over different climate regions of Europe was estimated. Model simulations were performed with a sophisticated deposition model. Based on the results of PRUDENCE project, monthly average values of atmospheric variables were used for the 1961–1990 (control) and 2071–2100 periods for two different scenarios (A2, B2). Average monthly ozone concentration data were obtained from EMEP stations and the possible changes of concentration fields were simulated based on previous predictions. The expected monthly and seasonal variations of ozone fluxes over some measuring points representing different climate regions are presented in this study.