



Characteristic of tropospheric ozone and meteorological conditions in Warsaw agglomeration

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The pollutant tropospheric ozone causes human health problems and environmental degradation and acts a potent greenhouse gas.

The data were based on automatic, hourly measurements of registered in immission two stations of Voivodeship Inspectorates of Environmental Protection. One of the station is located in southern district of Warsaw and represents peripheral parts of agglomeration. The other station in Granica is located in the Kampinos National Park, the largest complex of forest in the vicinity of Warsaw, about 30 km to the west.

Surface ozone and some meteorological parameters were continuously measured from 2008 to 2012. The levels and variations of ozone were studied and the influences of meteorological parameters on ozone were analyzed. The study examined weekday-weekend differences in ozone concentrations. The results provide evidence for the occurrence of atmospheric phenomena that produces higher ozone concentrations during weekends despite lower concentrations of ozone precursors. This phenomenon is known as the weekend effect (WE). It was found that during the study period the highest average concentrations of ozone was stated in the spring season, the lowest ones in winter.

Daily averaged ozone level is negative correlated with relative humidity and solar radiation and positive correlated with air temperature, wind speed during the study period.

Keywords: tropospheric ozone variations, urban area, weekend effect