

## **Analysis of Particulate Matter Concentrations in Mazovia Region, Central Poland, Based on 2007-2010 Data**

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### **A b s t r a c t**

Measurement results of PM<sub>10</sub> (particulate matter with diameters below 10  $\mu\text{m}$ ) concentrations performed at four stations in central Poland (2007-2010) were analyzed in terms of levels and distributions of concentrations, the number of exceedances of the limit values and the causes of these exceedances. PM<sub>10</sub> levels were similar at suburban and rural stations, except of one station located in the vicinity of a busy street. The median of PM<sub>10</sub> concentration ranged from 26  $\mu\text{g}/\text{m}^3$  at suburban station to 44  $\mu\text{g}/\text{m}^3$  at Warsaw Kerb station. Seasonal variability analysis of PM<sub>10</sub> concentration revealed an additional maximum beyond the usual autumn-winter one. This maximum occurred in April at all stations, and corresponded to seasonal wildfires activity and dust activation in Eastern Europe. Cluster analysis of back-trajectories revealed that PM<sub>10</sub> concentrations depend on the direction of advection of the incoming air; the highest values are registered for air of regional and southern origins, while the lowest are for the airmasses coming from the north and north-west direction.

**Key words:** PM<sub>10</sub>, particulate matter, backward trajectories, cluster analysis, long-range transport.