

## **Abstract**

This study deals with the personal exposure to atmospheric aerosol  $PM_{2.5}$  on public transport buses in Prague. The project consists of experimental rides on a given regular transport line involving, apart from a city bus, some other microenvironment, such as a city street and domestic environment. Measuring was carried out in the morning and evening rush hours and in all seasons of the year. Seventy-seven out of all measurements were usable for further statistical processing. Data were collected using nephelometer DustTrak. No statistically significant differences were detected either between the morning and evening rush hours, or in different seasons of the year. However, statistically significant differences were present among the various environments with the exception of the bus and one of the busy crossroads. The highest average level was shown on the bus ( $67 \mu\text{g}/\text{m}^3$ ) and the lowest level was shown in domestic environment ( $20 \mu\text{g}/\text{m}^3$ ). Between them were two busy crossroads with levels  $57 \mu\text{g}/\text{m}^3$  and  $43 \mu\text{g}/\text{m}^3$  and a quiet street with  $31 \mu\text{g}/\text{m}^3$ . The correlation with meteorological conditions was minimal. Out of three factors taken into account (temperature, wind speed and humidity), wind speed only was proven to have any effect (8% of variability) on the final results. Spearman correlation coefficient was -0,3. The correlations with AIM stations were rather high with  $PM_{2.5}$  0,49 and  $PM_{10}$  0,68. Concerning the microenvironments, the highest correlation existed between domestic environment and a quiet street (0,81), the lowest correlation existed between domestic environment and the bus (0,45). Based on the reference measuring using Harvard impactor, the DustTrak overvalued 1,8 times and this ratio was not affected by meteorological conditions.