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STUDY OF AIR POLLUTION IN BUCHAREST, ROMANIA DURING 2005 - 2007

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Abstract

The main purpose of this paper is to assess the concentration levels of pollutants at six urban sites in Bucharest, Romania in order to draw conclusions on their temporal variability in different sources and under different meteorological conditions. The analysis of measured pollutant concentrations (NO_x, NO_2, CO, PM_{10}) runs over three years: 2005, 2006 and 2007, and uses data from the network of monitoring stations of Environmental Protection Agency of Bucharest, which was established in 2004. The study has shown that the highest NO_x and SO_2 concentrations occur in winter, with NO_x (195.20±70.38) $\mu g \cdot m^{-3}$ at a traffic station (Cercul Militar) and SO_2 (70.60±22.35) $\mu g \cdot m^{-3}$ at another traffic station (Mihai Bravu), with the latter being close to a power plant. The levels of pollutant concentration are related to human activities, such as traffic and the distribution of thermal power plants. The unfavorable meteorological dispersion conditions have clearly influenced the concentrations in winter. The highest PM_{10} concentration values (~ 80 $\mu g \cdot m^{-3}$) measured in summer at all monitoring stations are explained by traffic (Diesel engines), buildings and re-suspension of road dust. The results make possible the evaluation of the input requirements of air quality models and can also be used in air quality management in Bucharest.

Key words: air pollution, concentration, meteorology, urban

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