



Variability of Local Aerosols Concentration due to the Long-range Transport and Meteorology

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Meteorology is a key factor controlling local variability and long-range transport of the aerosols. The aim of this paper is to analyze the variability of Particulate Matter (PM10) concentrations for rural sites situated in Central and Eastern part of Europe, including a few sites from Romania. The site EEA (Environmental European Agency) was used for PM10 datasets; for analysis of air circulation and meteorology, the daily geopotential at 500hPa level reanalysis data from NCEP-NCAR were used. The study was carried out for a year period, 2005-2006 because the previous studies have shown the domination of the blocking cases, in winter. Our study results have shown many local pollution episodes in the absence of the blocking air circulation; this emphasized the importance of long-range transport of pollutants. In addition, due to the topography which modifies the meteorological condition, spatial variability of PM10 concentrations was different for the same type of circulation. Anyway, the results emphasized the strong connection between high pollution episodes, meteorological conditions and air circulation types.