



“Gheorghe Asachi” Technical University of Iasi, Romania



COMPARATIVE STUDY OF URBAN AND RURAL ATMOSPHERIC AEROSOLS IN AND NEAR BUCHAREST, ROMANIA

Gabriela Manolache, Sanda Voinea*, Dimitrios Skliros, Sabina Stefan

University of Bucharest, Faculty of Physics, Atomistilor 405, P.O. BOX MG-11, Bucharest-Magurele, 077125, Romania

Abstract

The temporal variation of the pollutant (PM₁₀) levels over urban and rural sites in and near Bucharest was investigated from March 2014 until September 2015. The comparison between the PM₁₀ mass concentration values at urban site and those from referential urban station of Environmental Protection Agency of Bucharest allowed us to detect certain pollution events. Considering this purpose the optical parameters characterizing the loading of the atmosphere (Aerosol Optical Depth-AOD) and the type of the aerosol (Single Scattering Albedo-SSA), were used. At the urban site 60% of PM₁₀ mass concentration values exceed the 24 h limit value, of 50 µg/m³. The levels of pollutant concentration are related to human activities, especially traffic and re-suspension of road dust. The meteorological conditions influenced the dispersion of pollutants. Consequently these results can be used by the responsible people to take some measures in order to reduce pollution in the affected urban sites. At the rural site the PM₁₀ values were situated below 50 µg/m³ during the monitored period; this means a relatively clean air and therefore, the site can be used as a reference site for the air quality near Bucharest.

Keywords: aerosol, pollution, PM₁₀, rural and urban stations, software

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* Author to whom all correspondence should be addressed: e-mail: sandavoinea@yahoo.co.uk