World Academy of Science, Engineering and Technology
International Journal of Environmental and Ecological Engineering
Vol:17, No:03, 2023

Assessment of Pollution of the Rustavi City's Atmosphere with Microaerosols

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Abstract : According to observational data, experimental measurements, and numerical modeling, is assessed pollution of one of the industrial centers of Georgia, Rustavi city's atmosphere with microaerosols. Monthly, daily and hourly changes of the concentrations of PM2.5 and PM10 in the city atmosphere are analyzed. It is accepted that PM2.5 concentrations are always lower than PM10 concentrations, but their change curve is the same. In addition, it has been noted that the maximum concentrations of particles in the atmosphere of Rustavi city will be reached at any part of the day, which is determined by the total impact of the traffic flow and industrial facilities. By numerical modeling has calculated the influence of background western light air and gentle and fresh breeze on the distribution of PM particles in the atmosphere. Calculations showed that background light air and gentle breeze lead to an increase the concentrations of microaerosols in the city's atmosphere, while fresh breeze contribute to the dispersion of dusty clouds. As a result, the level of dust in the city is decreasing, but the distribution area is expanding.

Keywords : pollution, modelling, PM2.5, PM10, experimental measurement
Conference Title : ICMMMAP 2023 : International Conference on Modelling, Monitoring and Management of Air Pollution
Conference Location : Barcelona, Spain
Conference Dates : March 06-07, 2023