COMPARISON OF FACTORS THAT AFFECT VERTICAL DISTRIBUTION OF AEROSOLS AT SEASIDE AREAS

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Abstract

This paper treats the factors that affects the vertical distribution of aerosols particles at seaside areas. Variation of particles, belong to sub-micron and micron range of atmosphere aerosols in dependence of altitude, risuspension and wind speed. The correlation coefficients takes higher values for larger aerosols than for smaller ones. We found that wind speed has greater influence on aerosol concentration than the altitude from the ground. These factors reduce aerosol concentrations exponentially. By the other side risuspension of the particles increase the concentration of the aerosols.The measurements are done in the altitudes 0-15m, 280m away of the seaside and 330m away of the main street at the city of Shkodra. During this study are used Environmental Dust Monitor model EDM107 which is divited in 31 canals and measurs particles 0.25-32 μm, and Handheld Particle Counter, model HandiLaz 301 that measures just in three canals. Measuring the concentration of aerosols in different altitudes we can obtain the altitude profile of the aerosols. Vertical distribution of aerosols is exponential decay. The parameters of the altitude profile measured experimentally are related to aerosol concentration. Aerosol concentration, by the other side is strongly related with all the factors that increases and decreases their concentration in the air. If we know how this factors affect the distribution of the aerosols, we can predict their concentration in the the same place but under other parameters. Aerosol production rate is strongly related with these factors, except the resources of the aerosol particles. Observations showed that there are good accordance between theoretical calculations and experimental values.

Keywords: *Aerosols, vertical distribution, risuspension, wind speed .*