



The determination of particulate matter concentration from space

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The pollution of urban air by fine anthropogenic particulate matter (PM) with radii of particles smaller than 2.5 and 10 micrometers (PM_{2.5} and PM₁₀) leads to the increased mortality and health problems. Therefore, it is of importance to monitor PM_{2.5} and PM₁₀ values in the cities. This is usually performed using ground-based methods. However, such techniques have a poor spatial resolution. Although the temporal resolution is sufficient. To increase the spatial coverage, recently the use of satellite measurements to determine the particulate matter concentration was proposed. The technique is based on the fact that the aerosol optical thickness and Angstrom exponent routinely measured by satellite optical instruments provide information on the particulate matter concentration and also the average size of particles in the boundary layer. This paper is aimed to the determination of PM₁₀ using SeaWiFS and MERIS satellite observations for several locations. Results of particulate matter derived from ground-based measurements are compared with those obtained at ground. High correlation of ground and satellite-based retrievals of PM₁₀ is found.