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Morphological Characteristics of Individual Particles in the Coarse Fraction

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Abstract: This study examines the size and shape distributions of individual particles in coarse fraction (the particles with projected area equivalent diameter above 1-2μm). The size and shape of individual particles in coarse mode were analyzed using Scanning Electron Microscope (SEM). Particle size distribution was lognormal with particles of 5μm equivalent diameter corresponding to the peak. Average value of equivalent diameter of coarse particles analyzed was 6.4 μm with standard deviation of 0.75 μm. Major part of analyzed particles (about 65% of total particles) was found to be with angular shapes. Spherical and rounded particles represent 11.4 % of analyzed particles. The average value of the shape factor was about 0.77. Angular particles with well defined edges were dominant in the coarse fraction. These particles are assumed that come mainly from fugitive road dust induced by traffic.

***Keywords**: Shape factor, distribution, coarse particles, image analysis, SEM*

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