

Acceptibility of Black Carbon Instead of Particular Mass Concentration as an Indicator for Traffic Related Partricles in Dhaka City

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Nowadays increasing difficulties measuring the EU daily limit values for PM₁₀,PM_{2.5} is observed in Dhaka City , mainly due to insufficient judged measures to reduce road traffic emissions. However, a detailed analysis of the data should indicate that neither the particle mass concentration (PM₁₀ and PM_{2.5}) nor the particle number concentration are specific metrics for evaluating the particle pollution originated by traffic. In fact, increased formation of secondary aerosol,together with adverse meteorological conditions and the suspension of the coarser fraction are by far the three main explanations for the numerous PM₁₀ exceeding values. Amongst the particles measured , only the results for Black Carbon (BC), mainly in lower submicron range would show the influence of local traffic. The PM mass and number concentration , along with the data for BC will be compared to show the correlation with nitrogen monoxide, a parameter strongly related with the proximity of the local metroplitan traffic. The correlation between Black Carbon data and NO or NO_x should be much higher than between Black Carbon and the PM mass or number concentration. Therefore, an assessment should be done to evaluate the acceptibility of Black Carbon in lieu of PM as an indicator for traffic particles.

Key words: Black Carbon, Particle Mass concentration, Particle Number Concentration, PM₁₀, PM_{2.5}

Reference:

Peter Vanderstraeten, Michael Forton, Olivier Brasseur, , Zvi Y. Offer, "Black Carbon Instead of Particle Mass Concentration as an Indicator for the Traffic Related Particles in the Brussels Capital" Journal of Environmental Protection,2011, 2, 525-532