Atmospheric Deposition of Organic and Inorganic Compounds Associated with Fine Particulate

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Dry deposition is the process by which gases and aerosols are deposited directly from the atmosphere to vegetation, soil or materials in the absence of precipitation. It is governed by the concentration in air, turbulent transport processes in the boundary layer, chemical and physical nature of the depositing species and the capability of the surface to capture or absorb gases and particles (1). In the present investigation, particulate samples (<2.5 μ m and 10 μ m) were collected at a tropical site and annual average atmospheric concentrations obtained were used to estimate the annual dry deposition flux. 0.5 and 1.0 cm s⁻¹ were taken as lower and upper values for dry deposition velocities. The fluxes obtained here would provide loading of particle (<2.5 μ m and 10 μ m) associated organic (total carbon (TC), water soluble organic carbon (WSOC) and total poly aromatic hydrocarbons (TPAHS)) and inorganic compounds (metal, nitrate and sulphates) in the atmosphere. Depositional fluxes of particles associated compounds showed distinct seasonal variations. Comparison of deposition fluxes of PM_{2.5} and PM_{10-2.5} fractions suggests high atmospheric loading of these pollutants is due to fine fraction of aerosols.

Kew words: PM_{2.5}, PM₁₀, Dry deposition, TC, WSOC and TPAHS

References

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