

Aerosol surface area concentrations measured by a diffusion charger in Fukuoka, Japan

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The surface area of ambient aerosols can be considered as an index of toxicity because an increased surface area may be able to act as a catalyst for specific reactions between particles and cells, as well as a carrier for co-pollutants such as gases and chemicals. Aerosol surface area concentration has been measured as well as BC and other chemical species such as organic compounds, sulfate, and nitrate, and investigated how the chemical composition of aerosols affect their surface area. Aerosol surface area concentration was highly correlated with BC concentration for the entire period (Figure 1). Day-of-week variation and diurnal variation also showed the strong correlation between aerosol surface area and BC. BC should be paid much attention even though BC accounts for relatively small percentage of PM_{2.5} mass when aerosol surface area is considered as an index of adverse health effect caused by exposure of aerosols to human body.

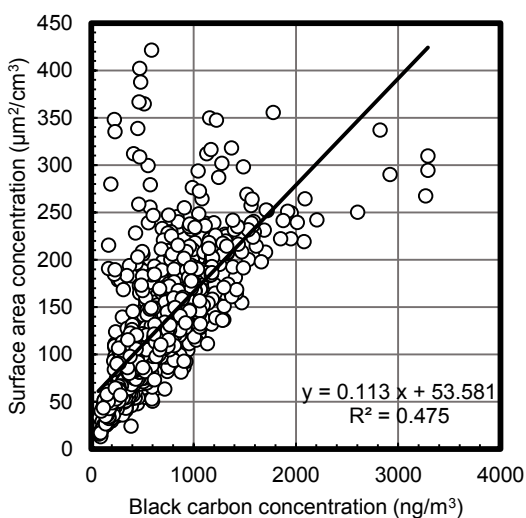


Figure 1: BC against the aerosol surface area concentration measured in Fukuoka, from March to October, 2015.