

Multi - Site Aerosol Monitoring Using Mini Step Sampler

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Abstract

We developed mini step samplers with low manufacturing and running costs for application in multi-site air-pollution monitoring. The miniaturization of the sampler was achieved by reducing the suction nozzle size. We carried out simultaneous multi-site aerosol sampling during two periods in correlation with meteorological data (wind direction and velocity). It was observed that elemental concentrations of some soil origin elements changed periodically. On the other hand, the concentration of Cu and Zn showed irregular concentration spikes whose pattern showed a variation with the sites. Analysis using the data of wind directions showed that Cu had been transported to the sites from northeasterly direction and that the concentration of Zn was influenced by two big factories nearby. In conclusion, it has been demonstrated that the multi-site sampling system combined with meteorological data is well suited to identify sources of pollution.