

屋久島におけるPM粒子を含むアジア大陸からの大気汚染 Atmospheric pollutants originated Asian Continent included PM in Yakushima Island.

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Airborne particulate matter (PM) is a complex mixture of particles that are very different in size, chemical composition, physical state and morphology. Moreover, PM has a variety of emission sources which range from natural to anthropogenic and stationary to mobile. It also has a variety of physical and chemical properties. Therefore, not only the size distribution of particles but also information related to their chemical composition will play an important role in elucidation of the behavior and major emission sources of PM and their effect on human health and the ecosystem.

The samples of size-resolved PM were collected using a 3-stage NLAS impactor (Tokyo Dyrec Co., Ltd., particle cut size of stage is 10mm, 2.5 mm and 1.0mm for a flow rate of 3 L/min) with one day or three days sampling interval on the poly-carbonate filter (25mmf) and a polycarbonate filter (back-up filter 47mmf). Sampling of the PM was conducted at Yakushima Island, from 13 to 26 Jan., 2013. Elemental compositions of these samples were determined by ICP/MS, and ionic species were analyzed by IC. In addition, we observed a morphology by SEM. Moreover ATR-FT-IR imaging measurements of individual particles were performed using a Perkin-Elmer Spectrum 100 FT-IR spectrometer interfaced to a Spectrum Spotlight 400 FT-IR microscope.

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