

CHEMISTRY OF ANTARCTIC ATMOSPHERIC AEROSOLS
(ABSTRACT)

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Inland atmospheric aerosols were sampled by members of JARE-29 (1988–1989) using a modified Andersen type cascade impactor, which consists of 12 impactor stages and a back-up filter and can fractionate aerosol particles down to 0.04 micron. MSA (methane sulfonic acid) and nssSO₄ showed their maximum in size distribution at 0.2–0.3 micron. Their distribution curves run parallel with similar trend and strongly suggest their same or closely related origin.

Na has its maximum at 0.6–0.7 micron; its marine origin is indicated by the similar trend of Mg and also by the Mg/Na ratio close to that in seawater. Therefore, MSA and nssSO₄ are strongly suggested to be formed through atmospheric condensation.

The MSA/nssSO₄ ratio at the peak of size distribution was at nearly 0.1, which is higher than 0.2 over the Antarctic sea and at Syowa Station, and suggests their supply from a warmer low-latitude sea area.

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