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THE SOURCE OF ATMOSPHERIC AEROSOLS IN INLAND ANTARCTICA (ABSTRACT)

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Extensive sampling of drifting snow and pit snow were carried out on Mizuho Plateau by JARE-29 along the route from near the sea shore (point S20) up to about 600 km inland (point A). The typical sea salt components, Na and Cl, in summer drifting snow are high near the coast and decrease exponentially inland. In contrast, n.s.s.SO_4 and NO_3 show abrupt rises at most inland, suggesting that they are supplied from high altitude.

The compositions of atmospheric aerosols and drifting or surface snow show a considerable positive correlation and, therefore, the chemical composition of atmospheric aerosols in the past can be traced back from that in deposited snow with time mark from $\delta^{18}O$ distribution.

The atmospheric aerosols at Syowa Station show typical maritime seasonal variation: Na and Cl are high in winter and n.s.s. SO_4 and MSA (methanesulfonic acid) high in summer. Such annual variation can also be found in deposited snow at near shore stations, for example at point S25. However, such regular correspondence between distribution pattern of chemical components and season (as determined from $\delta^{18}O$ distribution) is no longer apparent in inland snow. This also strongly suggests supply of aerosol materials from high altitude, possibly from high troposphere or lower stratosphere.

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