Proc. NIPR Symp. Polar Meteorol. Glaciol., **6**, 158, 1992

MINOR CHEMICAL CONSTITUENTS IN SNOW COVER ON MIZUHO PLATEAU, ANTARCTICA (ABSTRACT)

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A good correlation between chemical compositions of falling snow and atmospheric aerosols is needed to obtain information on the ancient global and atmospheric environment from chemical study of polar ice. For this purpose, atmospheric aerosols and snow were sampled by members of JARE-29 (1988–1989). The samples were analyzed for MSA (methane sulfonic acid), Cl, NO_3, SO_4, Na, K, Ca, Mg, and heavy metals (Al, Fe, Zn, Cu). The results showed a positive correlation between atmospheric aerosols and surface snow.

The results of pit snow samples from Pt. A (altitude: 3000 m, distance from sea coast: nearly 350 km) showed that Na and Cl are high in winter and low in summer, while Zn is high in early winter and Al and Fe in late summer. Although Al and Fe are usually considered indicators of crustal materials, significant amounts of them and also Zn are contained as organic compounds and explain their high enrichment factors reported previously.

(*Received January 16, 1992*)