Proc. NIPR Symp. Polar Meteorol. Glaciol., **11**, 250, 1997

A COMPARISION OF THE ECM SIGNAL AND CHEMICAL CONSTITUENTS IN THE G15 CORE, EAST ANTARCTICA (ABSTRACT)

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Dating of polar ice cores is important and fundamental analyses are needed to compare the core data at different places and also to reconstruct the last climate and environmental condition from ice core analysis data. The G15 core was dated roughly by use of volcanic events which were obtained by the DEP method (MOORE *et al.*: J Geophys. Res., **96**, 1991). Also, some authors reported the possibility that fluctuation of the ECM-signal is reflected in the seasonal variation. If this result is correct, variation of annual accumulation will be obtained from the determination of annual layer thickness. For detailed examination, the ECM-signal and concentration of chemical constituents were compared.

Measured chemical constituents were SO_4^{2-}, NO_3^-, Cl^-, Mg^{2+} and Na^+ which were measured by ion-chromatography. The difference between the measured total amounts of anion and cations is nearly equivalent to the amount of H^+-concentration at present in Antarctic snow and ice. Variation of the amount was same to the fluctuation of ECM-signal of depth from 56 m to 58 m. Compared to changes of other ions and NO_3^--concentration, it is thought that $nssSO_4^{2-}$ brought on the H^+-variation. $NssSO_4^{2-}$ and NO_3^- in drifting snow particles are concentrated in summer with little in winter on Mizuho plateau, East Antarctica. The reason that NO_3^- did not contribute to the H^+-variation is attribute to be diffusion of the volatile HNO_3 in continuation process after snow deposition. This agree with the result which was obtained at Byrd Station, East Antarctica. On the other hand, change of concentration of Na^+ and Cl^- from sea origin in drifting snow particles show a seasonal variation that it is low in period of spring and autumn. Considering to index of summer the $nssSO_4^{2-}$ concentration, its increase seem to be able to show summer season.

(Received January 17, 1997; Revised manuscript accepted April 28, 1997)