

OXYGEN ISOTOPE PROFILES OF DEPOSITED SNOW  
IN DIFFERENT DEPOSITIONAL ENVIRONMENTS OF THE  
ANTARCTIC ICE SHEET-II (ABSTRACT)

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In the region between Dome F (77.4°S, 39.6°E) and the Princess Astrid Coast, annual variation of oxygen isotopic contents in vertical profiles of deposited snow cannot be seen in the inland plateau due to low accumulation rates, but it can be seen in the coastal area below the north slope of the Sør Rondane Mountains. Such annual variation is compared with that of surface snow drift collected at Mizuho Station (70.7°S, 44.3°E) through the year, since deposited snow is composed of accumulated snow drift.

The  $\delta^{18}\text{O}$  contents in the snow drift had high values in summer ( $-30\sim-40\text{‰}$ ); in winter, values were generally low (above  $-50\text{‰}$ ) but sometimes there were high values similar to those in summer. The annual range of those was about 20 ‰. It can be seen in relations between air temperature at sampling time and  $\delta^{18}\text{O}$  contents in the snow drift during snowfall, blowing snow and no snowfall, that the temperature during blowing snow tends to be higher and the temperature during no snowfall tends to be lower, compared with that during snowfall at similar  $\delta^{18}\text{O}$  content of the snow drift. Consequently, vertical profiles of oxygen isotopic contents of accumulated snow drift are supposed to show a wide annual range and complicated annual variation. However, those of deposited snow actually seen in the surface layer usually show a narrow range and simplified pattern. This difference suggests the importance of change of isotopic content after snow deposition for understanding oxygen isotope profiles of deposited snow.

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