

Chemical analysis of three snow pits of inland Antarctic Expedition 2007/2008 (JASE)

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To understand the spatial-temporal variability of glaciological environment in Dronning Maud Land, a 2800 km traverse was carried out by Japanese Swedish Antarctic Expedition (JASE traverse) in austral summer 2007/2008 (Fujita et al., 2011). The route of this traverse is crossing Syowa-Dome Fuji-EPICA DML (Kohnen)-Wasa. In this expedition, 4 or 2 m deep snow pits were dug at Dome Fuji (DF) and Meeting Pint (MP) and Middle Point (Mid.P). We analyzed for water stable isotopes, major soluble ions and tritium content with 2 cm intervals. We counted summer layers of snow pits using nssSO_4^{2-} , tritium content, sodium ion, chloride ion and crust layers. Snow accumulation rates are $29.3 \text{ kg m}^{-2} \text{ a}^{-1}$ of DF, $34.8 \text{ kg m}^{-2} \text{ a}^{-1}$ of Mid.P and $0.7 \text{ kg m}^{-2} \text{ a}^{-1}$, MP by dating of snow pits.

Comparing ion compositions between three snow pits, there is not significant difference of them. In other hands, we show negative correlation between water stable isotope and ion concentrations. These correlations are well at inland site (DF).