

東南極エンダービーランドに分布する 第四系の OSL 年代

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OSL dates of Quaternary sediments in Enderby Land, East Antarctica

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Dating of raised beach and emerged marine deposits is an important clue to reconstruct sea level, ice advance and environmental changes in Antarctica. In the Lützow-Holm Bay region, East Antarctica, there have been obtained many conventional radiocarbon dates of fossil organic materials from raised beaches. They are classified into two groups; the postglacial ages between 1,000 and 10,000 yr BP and those between 22,000 and 34,000 yr BP or more (e.g. Hayashi and Yoshida, 1994). Igarashi et al. (1995a, b) showed that AMS (Accelerator Mass Spectrometry) ¹⁴C dates of in situ fossil molluscs (*Laternula elliptica*) around Lützow-Holm Bay can be classified into two groups; late Pleistocene (33-42 ka) and Holocene (3-8 ka) without the $\delta^{13}\text{C}$ and reservoir corrections. Maemoku et al. (1997) and Miura et al. (1999) reveal that the former ages are from lower beds of transgression onlap facies and the latter ones are from upper beds of deltaic regression offlap facies, discussing on the ice melting history. Though radiocarbon dates are useful for interpreting the regional geohistory, those for marine fossils around Antarctica are problematic because of the reservoir effect (Adamson and Pickard, 1983; Stuiver and Braziunas, 1985). Furthermore the late Pleistocene (33-42 ka) ages around the area may be regarded as minimum ages because they are close to the limit of conventional ¹⁴C analysis and sensitive to the effect of contamination. Takada et al. (2003) investigated Electron Spin Resonance (ESR) dates of in situ fossil molluscs around Lützow-Holm Bay, suggesting that the true ages of some samples in the late Pleistocene group may be much older than the AMS ¹⁴C ages. It shows that Quaternary dates from other dating techniques as well as AMS ¹⁴C dating are quite important and helpful for reconstruction of Quaternary environment in East Antarctica. Therefore in this study we tried to measure optically stimulated luminescence (OSL) dates from several Quaternary sediments in Enderby Land, East Antarctica, to discuss on the apparent OSL dates, discrepancy between AMS ¹⁴C and OSL ones and interpretation of sedimentary environment.

References

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