

東南極の大陸棚上に認められる氷河地形の特徴・分布と 最終氷期の東南極氷床の底面環境

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The glacial landforms and erosional features on the East Antarctic continental shelf and the related past subglacial environments during the last glaciation

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Previous works about glacial history on land around the Lützow-Holm Bay (Miura *et al.*, 1998) and Mt. Riiser-Larsen regions (Takada *et al.*, 1998) indicate that the maximum expansion age of the East Antarctic Ice Sheet is not corresponding to the Last Glacial Maximum (LGM: ~23 to 19 ka) of the CLIMAP model (Anderson *et al.*, 2002; Stuiver *et al.*, 1981). The various types of glacial landforms and erosional features on the continental shelf have been confirmed from the submarine topographic surveys using a multibeam echo-sounder with vessel “Shirase “ in JARE-51 and 52. These submarine topography and features of distribution of submarine glacial sediments suggest that (1) the East Antarctic Ice sheet had advanced on the limit of continental shelf, (2) the maximum ice expansion had probably occurred during the MIS 4 inferred from the raised beach stratigraphy, and (3) the warm-based grounded ice had covered near the seashore along the Bay region during the maximum expansion..

References

- Anderson, J.B., Shipp, S.S, Lowe, A.L., Wellner, J.S., Mosola, A.B., The Antarctic Ice Sheet during the Last Glacial Maximum and its subsequent retreat history: a review. *Quaternary Science reviews*, 21, 49-70, 2002.
- Evans, J., Dowdeswell, J.A., Cofaigh, C.O., Benham, T.J., Anderson, J.B., Extent and dynamics of the West Antarctic Ice Sheet on the outer continental shelf of Pine Island Bay during the last glaciation. *Marine Geology*, 230, 43-72, 2006.
- Miura, H., Maemoku, H., Igarashi, A. and Moriwaki, K., Distribution of the raised beach deposits and marine fossils with radiocarbon dates around the Lützow-Holm Bay region, east Antarctica. *Special Map Series of National Institute of Polar Research*, No. 6 (with explanatory text, 46p), 1998.
- Stuiver, M., Denton, G.H., Hughes, T.J. and Fasook, J.L., History of the marine ice sheet in West Antarctica during the last glaciation: a working hypothesis. Denton, G.H. and Hughes, T.J. (eds.) *The Last Great Ice Sheets*: 319-436, John Wiley & Sons, 1981.
- Takada, M., Miura, H. and Zwart, D.P., Radiocarbon and thermo-luminescence ages in the Mt. Riiser-Larsen area, Enderby Land, East Antarctica. *Polar Geoscience*, 11, 249-259, 1998.