

東グリーンランド中央部、スコアズビーサンド周辺の隆起海浜地形の再検討：
最終氷期最盛期のグリーンランド氷床復元に与える意義

三浦英樹¹, 前杵英明², 奥野淳一¹, 黒住耐二³, 高田将志⁴

¹ 国立極地研究所・総合研究大学院大学

² 法政大学

³ 千葉県立中央博物館

⁴ 奈良女子大学

**Reexamination of raised beach landforms around Scoresby Sund, central part of Greenland:
Significance of reconstruction of the Greenland Ice sheet at the Last Glacial Maximum**

Hideki Miura¹, Hideaki Maemoku², Jun'ichi Okuno¹, Taiji Kurozumi³, Masashi Takada⁴

¹*NIPR & The Graduate University for Advanced Studies (SOKENDAI)*

²*Hosei University,*

³*Natural History Museum and Institute, Chiba*

⁴*Nara Women's University*

The Greenland ice sheet's response to present and future temperature change is a major issue for elucidating the future sea level rising. The accurate reconstruction of the Greenland ice sheet (GrIS) at the Last Glacial Maximum (LGM) gives an important key for dissolution of these problems.

However, representative GIA-based GrIS models at LGM (eg. ANU model by Fleming and Lambeck (2004) and ICE-5G model by Peltier (2004)) generally has a larger volume estimate than the glaciological models (eg. IcIES (Ice Sheet for Integrated Earth system Studies) models constructed by 3D ice sheet modelling coupled with AOGCM (MIROC) by Greve et al. (2011), Abe-Ouchi et al. (2013)). Notably, both GIA models show remarkable ice melting of more than 1000 m since LGM in three areas (northern part of West Greenland, southern part of West Greenland, and central part of East Greenland).

In this study, we report the preliminary results of geomorphological research around the Scoresby Sund region, central part of East Greenland, and we reconsider the previous study (Funder, 1978; Funder and Hjort, 1978; Funder et al., 2011) about recognition of Holocene marine limits and radiocarbon dating ages of fossil shells, which is the basis of the GIA-based GrIS models.

References

- Abe-Ouchi, A., F. Saito, K. Kawamura, M.E. Raymo, J. Okuno, K. Takahashi and H. Blatter, Insolation-driven 100,000-year glacial cycles and hysteresis of ice-sheet volume, *Nature*, 500, 190-194, 2013.
- Fleming, K. and Lambeck, K., Constraints on the Greenland Ice Sheet since the Last Glacial Maximum from sea-level observations and glacial-rebound models. *Quat.Sci.Rev.*, 23, 1053–1077, 2004.
- Funder, S., Holocene stratigraphy and vegetation history in the Scoresby Sund area, East Greenland. *Grønlands Geologiske Undersøgelse Bulletin*, No. 129, 1978.
- Funder, S. and Hjort, C., Aspects of the Weichselian chronology in central East Greenland. *Boreas*, 2, 69-84, 1973.
- Funder, S., Kjeldsen, K.K., Kjaer, K. H. and Cofaigh, C. O., The Greenland Ice Sheet during the past 300,000 years: A review. In *Quaternary Glaciations-extent and chronology A Closer Look*. eds. Ehlers, J. et al., 699-713. Elsevier, 2011.
- Greve, R., Saito, F., Abe-Ouchi, A., Initial results of the SeaRISE numerical experiments with the models SICOPOLIS and IcIES for the Greenland ice sheet. *Annals of Glaciology*, 52, 23-30, 2011
- Peltier, W.R., Global Glacial Isostasy and the Surface of the Ice-Age Earth: The ICE-5G (VM2) Model and GRACE, *Ann. Rev. Earth and Planet. Sci.*, 32, 111-149, 2004.