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Reexamination for the Greenland Ice sheet reconstruction at LGM from the raised beach deposits

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The past melting history of the Greenland ice sheet is the great key for elucidating the future sea-level rising. The GIA (Glacial isostatic adjustment) model using the spatial and temporal variations of relative sea-level changes is one of useful techniques for the reconstruction of ice melting history. Although many radiocarbon dating ages for the reconstruction of the sea-level history have been obtained from the coastal area of Greenland (ex. Kelly, 1973; Ten Brink, 1974, 1975; Weidick, 1968, 1972 in West Greenland), the detailed geomorphological and Quaternary stratigraphical investigations have not been enough. For example, though Reeh (1989) and Henriksen (2008) compiled the map showing the amount of uplift during the Holocene along the coastal area of Greenland, some isolated high coastal existences of the place of the amount of upheaval suggest that the field confirmation of Holocene marine limits is questionable. Actually, Fleming and Lambeck (2004) have tried to make the GIA models of Greenland since the Last Glacial Maximum (LGM) to reproduce the sea level history with extraordinary upheaval point and obtained the result that changes in ice thickness since the LGM were $>$ 500 m along the present-day outer coast and $>$ 1500 m along some parts of the present-day ice margin. In this presentation, we introduce the report of the reappraisal for the melting history of the Greenland Ice sheet from detailed geological analysis on the raised beach deposits and GIA modelling.

Keywords: Greenland Ice Sheet, Last Glacial Maximum, raised beach deposits, glacial isostatic adjustment