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The glacial landforms and erosional features on the Antarctic continental shelf

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Previous geological and geomorphological works about glacial history on land around the Lutzow-Holm Bay and Mt. Riiser-Larsen regions have indicated that the maximum expansion age of the East Antarctic Ice Sheet is not corresponding to the Last Glacial Maximum (LGM: ~23 to 19 ka) in the CLIMAP model. The various types of glacial landforms and erosional features on the continental shelf in the East Antarctic region have been confirmed from the submarine topographic surveys using a multibeam echo-sounder with new vessel Shirase during the JARE-51 and 52 seasons. These submarine topographic data such as glacial grooves, drumlins, mega-scale glacial lineations and iceberg furrows tell us some suggestions as follows: (1) Iceberg furrows indicate that the continental shelf is covered by thick sediments, (2) Very flat surface of continental shelf with mega-scale glacial lineations has been made by the sedimentation processes of ice sheet, (3) Such topographic features and their distributions imply that the East Antarctic Ice sheet had at least once advanced to the limit of main continental shelf, though their age is unknown.

Keywords: Antarctica, Continental shelf, Glacial landform, Quaternary, East Antarctic Ice sheet, Glacial history