

# Seafloor topography surveys around the East Antarctic continental margin

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Seafloor topography is fundamental information for marine research. However, the detailed topography in the Southern Ocean has not generally been understood yet. Especially, seafloor topography around the Antarctica margin covered by sea ices has been unknown. The Antarctic continental margin is the boundary area between ice sheet and ocean and the bathymetry around this region is essential element to understand the interaction between ice sheet and ocean as well as the tectonic evolutions. Single beam echo soundings have been conducted by old icebreaker Shirase, and multi beam echo-sounder has been installed on new icebreaker Shirase and the swath bathymetry data have been obtained since the 51<sup>st</sup> Japanese Antarctic Research Expedition (2009-2010). Moreover, sub-bottom profiler has also been equipped on the new icebreaker. Unknown seafloor topography and sub-bottom profiles under sea ices around the Antarctic margin such as continental shelf and slope are becoming clear, and those data are used as basic data for the Antarctic bottom water channels as well as paleoenvironment studies. Those data combined with magnetic and gravity anomalies have also contributed to the study related to the continental breakup. But there is a limit to observations by the icebreaker. The surveys under sea ices using ROV and/or AUV should be considered. We introduce the present status of multi beam echo-sounder and sub-bottom profiler obtained around the East Antarctic continental margin by icebreaker Shirase and future development of research using ROV and/or AUV are discussed.

Keywords: seafloor topography, East Antarctica, continental margin