

EP53C-1744 New seabed morphology data during expedition transfers in Southern Ocean in the frame of the ISOBatA project.

 Friday, 15 December 2023

 23:10 - 03:30

 *Poster Hall A-C - South (Exhibition Level, South, MC)*

Abstract

The experience of the PNRA ISOBatA (Italian Southern Ocean Bathymetry from consistent exploitation of opportunistic seafloor datasets in Antarctic region and surrounding areas) project, over the past two years, has shown the importance of collecting underway bathymetric data by exploiting the transit time between the Italian Mario Zucchelli Station in the Ross Sea and New Zealand, during Antarctic expeditions. Mapping the Antarctic seafloor is a challenging goal in terms of critically advancing our knowledge of seabed morphology, especially when strategically coupled with field observations. High-resolution mapping of the Southern Ocean seafloor may offer valuable insights into tectonic and volcanic processes of plate boundaries in this remote environment. The ISOBatA project collected in particular underway bathymetric data on board the Italian R/V Laura Bassi at the Macquarie Triple Junction and crossing the Emerald Fracture Zone, where also magnetic data were obtained. From a methodological point of view, the ISOBatA project developed dedicated procedures to ensure robust multibeam data quality during the acquisition, processing and archiving phases, to also provide a data sharing policy according to FAIR principles. The expeditions in the Southern Ocean revealed critical problems mainly related to environmental conditions associated to the working area (i.e.: ice-populated waters and/or adverse weather conditions) but at the same time promoted the implementation of appropriate best practices and workflows, also defined according to the geomorphological context of the working sectors. Our main objective is to promote common and shared procedures for the management of multibeam bathymetric data acquisition during transit times, and to support the current scientific

effort that all interested countries are undertaking to achieve a systematic exploration of the seafloor, especially for remote areas such as the Arctic, the Southern or the equatorial Atlantic Oceans.

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