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Toward the systematic exploration of the seabed morphology during transits after the ISOBatA project experience in the Southern Ocean

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Transits during oceanographic expeditions constitute a potential huge amount of acquired bathymetric data that could be systematically integrated to increase the knowledge on submarine morphology, especially for planned surveys in the equatorial Atlantic, the Arctic, the Indian and the Southern Oceans. The recent PNRA ISOBatA project aims to efficiently exploit seafloor datasets collected during transfer times within the Antarctic region and the Ross Sea. Along the route from New Zealand to the Italian *Mario Zucchelli Station* in the Ross Sea, the Emerald Fracture Zone and the Macquarie Triple Junction, located in the SW Pacific Ocean, represent two selected areas to test the strength of transit acquisition in remote areas, normally affected by adverse weather conditions.

The ISOBatA project has the main purpose to contribute to the mapping of Antarctic waters developing best practices and dedicated workflows to implement QA in multibeam data acquisition procedures during transit times, as well as in the processing, analysis and archiving of data and metadata.

The ISOBatA experience in the Southern Ocean suggests there are several critical issues associated with collection of multibeam data in remote and ice-infested waters. Operating procedures need more standardization, to avoid the acquisition of redundant data along common routes and unreliable data.

Our work aims to open a discussion to address the need for standardization in data acquisition during transit times, which should include priority in accordance with the geomorphological/geographical nature of the working areas. The integration of bathymetric data acquired during research vessel transfers to remote regions could imply a common international effort for a systematic exploration of the seafloor, sharing coverage in real time to avoid redundancy.

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