Improved bathymety of the Southern Ocean
IBCSO 2.0: a collaborative effort

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Introduction

The International Bathymetric Chart of the Southern Ocean (IBCSO) project aims to create high-resolution bathymetric compilations for the waters off Antarctica. Detailed knowledge of seafloor morphology is fundamental to almost all marine and maritime scientific activities. The size, remoteness and harsh ice conditions around Antarctica necessitates strong international collaboration to map the Southern Ocean. This is facilitated via connections to international bodies such as the Scientific Committee on Antarctic Research (SCAR) and the General Bathymetric Chart of the Ocean (GEBCO) project, which operates under the joint auspices of the Intergovernmental Oceanographic Commission (IOC) and the International Hydrographic Office (IHO). In 2013, the first version of IBCSO was published. It included contributed data of over 30 institutions from 15 countries. Since 2017, IBCSO is part of the new Nippon Foundation - GEBCO - Seabed2030 project and work on a second version has begun.

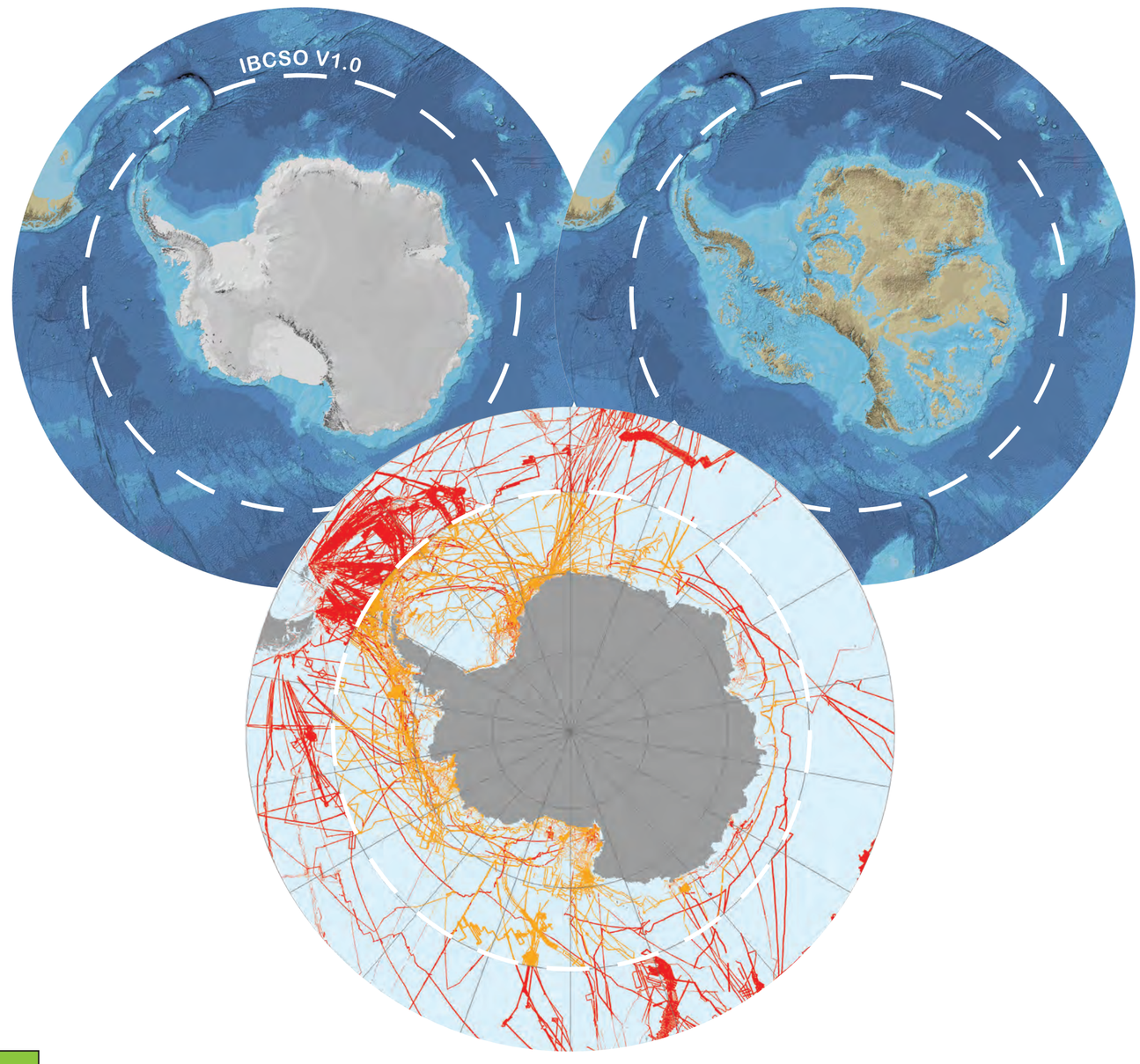

Figure 1. Extent of IBCSO version 2.0 and preliminary planned products**:** *ice surface elevation, bedrock elevation, multibeam data coverage*

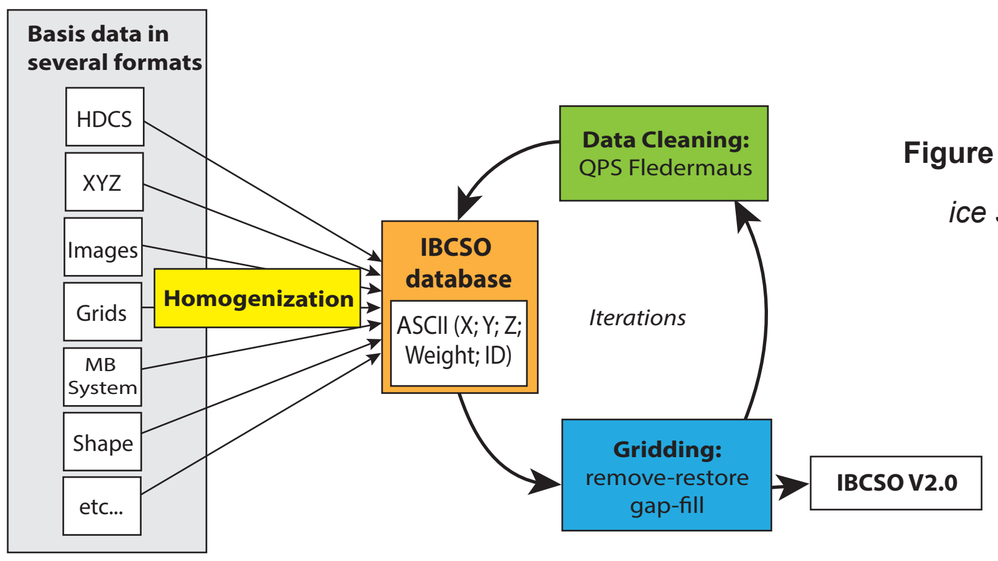

Figure 2. *Schematic workflow to create IBCSO V2.0*

IBCSO Version 2.0

The new version will include numerous new data sets of high-resolution swath bathymetry surveys from various institutions and, with that, builds on the largest database of bathymetric soundings for the Southern Ocean. IBCSO V2.0 will cover a larger area, extending up to 50° S instead of only 60° in the first version (Fig. 1). With this extension, the new bathymetric model will now also include important submarine features like the Drake Passage, the South Sandwich Arc, and the southern parts of the Kerguelen Plateau and Campbell Plateau.

New datasets are homogenized and ingested into the database, which subsequently is cleaned and gridded at 500m resolution in an iterative process (Fig. 2). Release of IBCSO V2.0 is envisioned by the end of 2019. A preliminary version of the current status is showing the improvement of the grid (Fig. 3).

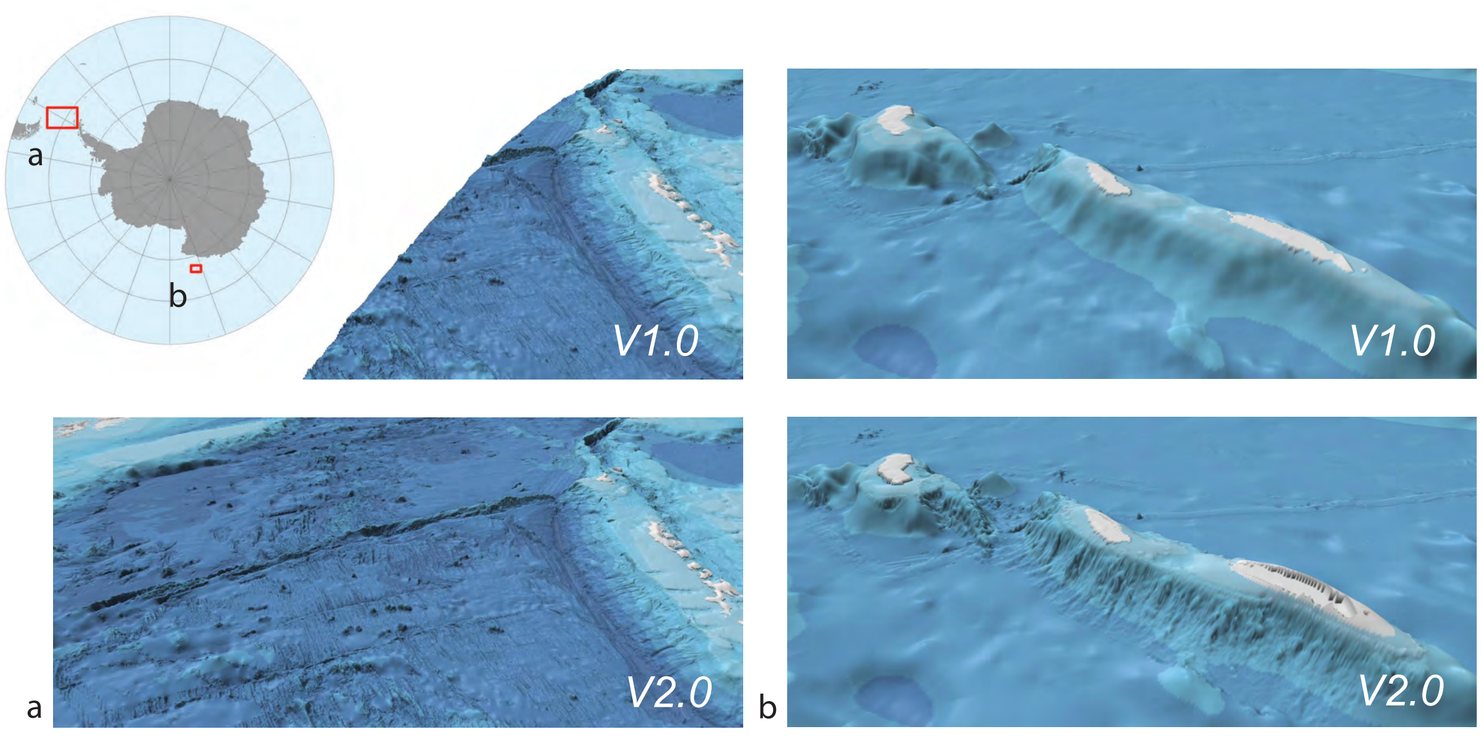

Figure 3. *IBCSO version 1.0 comparison to the preliminary version 2.0 showing (a) the extended area into Drake Passage and (b) new multibeam coverage near Balleney Islands*

Data Contributions

The bathymetric compilation is highly dependent on data contributions. All contributions will be acknowledged in IBCSO products.

Please contact us to submit bathymetric data south of 50°S: Jan.Erik.Arndt@awi.de, Laura.Hehemann@awi.de, Boris.Dorschel@awi.de.

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