

**IHO HYDROGRAPHIC COMMITTEE ON ANTARCTICA (HCA)
9th Meeting, Simon's Town, Cape Town, 12-14 October 2009**

**Report on the
International Bathymetric Chart of the Southern Ocean (IBCSO)**

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General

Transition from analogue IBCs of the 1980s to digital methods started in 1997 with the northern equivalent of IBCSO – the International Bathymetric Chart of the Arctic Ocean (IBCAO). Following the success of the IBCAO, the IBCSO was initiated in 2006. The IBCSO program is aiming for the implementation of an enhanced digital database that contains bathymetric data available south of 50°S latitude. Based on this data container a first consistent bathymetric chart of the Southern Ocean called IBCSO is designed. The provision of digital data enables calculation of optimized Digital Elevation Models (DEM's) or GIS based queries and prediction on DEM derivatives. The IBCSO is realized by a strong international collaboration of individual scientists, international data centers, and scientific programs. The IBCSO program is endorsed the Intergovernmental Oceanographic Commission (IOC) of UNESCO, the Hydrographic Committee on Antarctica (HCA) of IHO, and the Scientific Committee on Antarctic Research (SCAR).

Objectives of the IBCSO

The objective of the IOC regional ocean mapping program and SCAR Geosciences Expert Group on IBCSO is to gain better knowledge of the sea floor topography in the Southern Ocean. For the production of the first International Bathymetric Chart of the Southern Ocean the IBCSO group collects and compiles bathymetric data, grids, and charts from hydrographic offices, scientific institutions and international data centers. Digital ship track inventories for future transit planning and optimized echo sounding data acquisition are prepared from the compiled bathymetric database.

Activities

Activities in 2008/2009 comprise improvement of the Group infrastructure and interaction. The IBCSO mailing list includes now 59 experts from various scientific fields. The Editorial Board comprises of 13 members, which represent major IBCSO stakeholder. Data management and data processing include following steps:

- conceptual design and implementation of the IBCSO database with AWI's IT Center
- assembling of bathymetric, topographic, and other geoscientific data resulting in 500 single-beam cruises, 140 multibeam cruises and 10 regional bathymetric grids
- echo sounding data preprocessing including quality control, analyses, and description

- GIS based data merge for optimized gridding
- IBCSO products: ship track inventories, bathymetric database , softcopy and web maps (in cooperation with AWI, JUB, MARUM), printed maps

Past Meetings

One major aspect for the success of the IBCSO Group is a continuous exchange of information and bathymetric data. For that reason, the Group decided to meet on an annual basis in conjunction with international conferences. Past meetings are listed below:

- 2nd IBCSO Group Meeting during the XXX SCAR Science Week in St Petersburg, Russia, July 2008
- 1st IBCSO Group Meeting during the International Symposium of Antarctic Earth Sciences (ISAES) in Santa Barbara, USA, 1 September 2007
- The Inauguration Meeting was conducted during the CGOM-X Meeting, Bremerhaven, Germany, 17 June 2006
- Kick-Off Meeting of IBCSO took place on during the SCAR XXVIII, Bremen, Germany, 30 July 2004

Publications and Outreach

- Draft of the IBCSO Technical Report 2009/2010
- GeoReach - Newsletter from the SCAR Geosciences SSG, February 2009
- Interview by Realnature TV at the AWI booth, Intergeo 2008 in Bremen, October 2008
- Invited talk by Norbert Ott entitled 'Significance of bathymetric data in polar and marine research ... and beyond', Intergeo 2008, Bremen, October 2008
- Oral presentation by Ott and Schenke entitled 'Polar Ocean Mapping: Significance of Bathymetry for Observing Systems', SCAR/IASC IPY Open Science Conference, St Petersburg, Russia, July 2008
- IBCSO poster presentation, SCAR/IASC Open Science Conference, St Petersburg, Russia, July 2008
- Joint IBCAO and IBCSO poster presentation, SCAR/IASC Open Science Conference, St Petersburg, Russia, July 2008
- GeoReach - Newsletter from the SCAR Geosciences SSG, May 2008

Upcoming

- Scheduled 3rd IBCSO Meeting to be held in Bremerhaven, 30 November 2009
- Consistent bathymetric database to be prepared in the 4th quarter 2009
- Digital elevation model to be prepared in the 2nd and 3rd quarter 2010
- Printed maps to be prepared in the 3rd quarter 2010
- Publication of the compiled IBCSO dataset in Pangaea
- Submission of IBCSO publications to relevant geoscientific journals

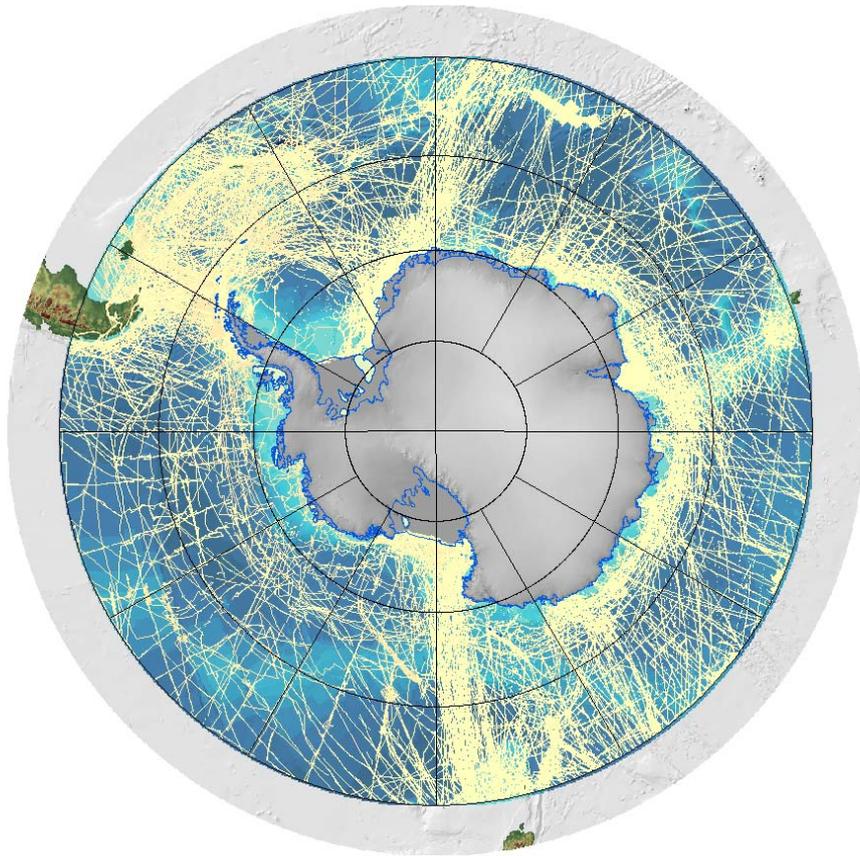


Figure 1: Ship tracks with single- and multibeam data in the Southern Ocean for the IBCSO.
Image courtesy: Norbert Ott, AWI Bremerhaven

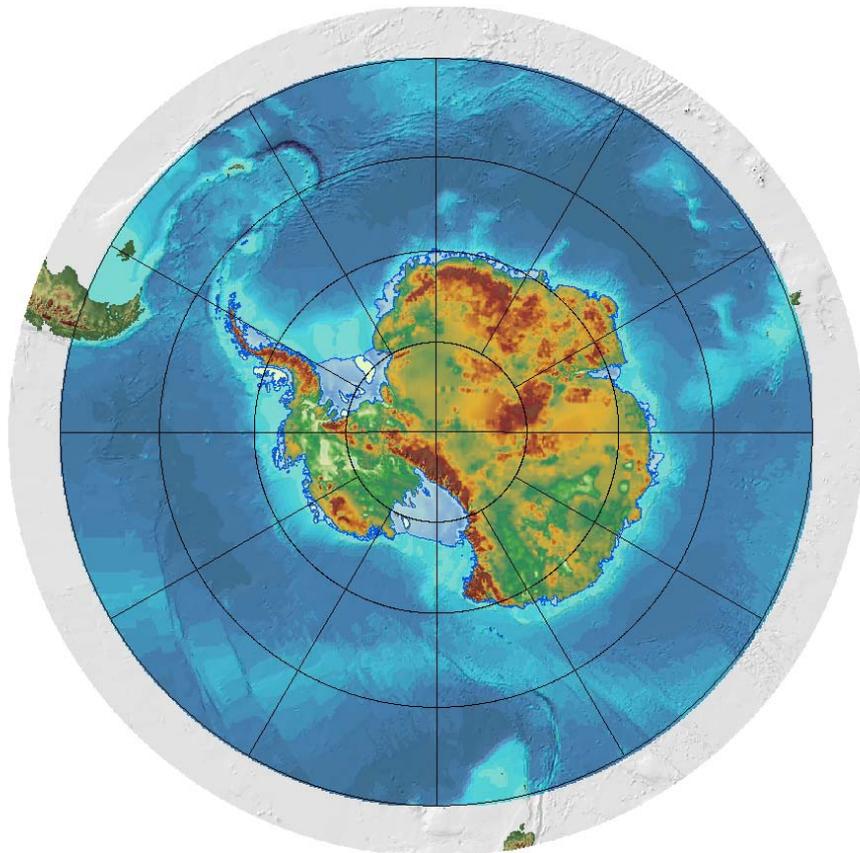


Figure 2: Draft version of the IBCSO with bedrock topography from BEDMAP as part of the Southern Ocean Geographic Information System (SOGIS). Image courtesy: Norbert Ott, AWI Bremerhaven