

# IBCSO v1.0

## *A new view on Antarctic bathymetry*

**Arndt, Jan Erik<sup>1)</sup>**; Schenke, Hans Werner<sup>1)</sup>; Jakobsson, Martin<sup>2)</sup>; Nitsche, Frank O. <sup>3)</sup>; Buys, Gwen<sup>4)</sup>; Goleby, Bruce<sup>5)</sup>; Rebesco, Michele<sup>6)</sup>; Bohoyo, Fernando <sup>7)</sup>; Hong, Jong-Kuk <sup>8)</sup>; Black, Jenny <sup>9)</sup>; Greku, Rudolf <sup>10)</sup>; Udintsev, Gleb <sup>11)</sup>; Barrios, Felipe <sup>12)</sup>; Reynoso-Peralta, Walter <sup>13)</sup>; Taisei, Morishita <sup>14)</sup>; Wigley, Rochelle <sup>15)</sup>;

<sup>1)</sup> Alfred-Wegener-Institute; <sup>2)</sup> Stockholm University; <sup>3)</sup> Lamont-Doherty Earth Observatory; <sup>4)</sup> British Antarctic Survey; <sup>5)</sup> Geoscience Australia; <sup>6)</sup> Istituto Nazionale di Oceanografia e di Geofisica Sperimentale; <sup>7)</sup> Instituto Geológico y Minero de España; <sup>8)</sup> Korean Polar Research Institute; <sup>9)</sup> Institute of Geological and Nuclear Sciences; <sup>10)</sup> Institute of Geological Sciences; <sup>11)</sup> Vernadsky Institute of Geochemistry and Analytical Chemistry; <sup>12)</sup> Department of Hydrography, Chile; <sup>13)</sup> Navy Hydrographic Service, Argentina; <sup>14)</sup> Japan Coast Guard; <sup>15)</sup> University of New Hampshire

# The Southern Ocean



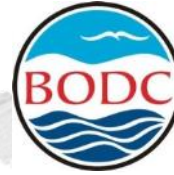
[www.gebco.net](http://www.gebco.net)

# Organization of the IBCSO



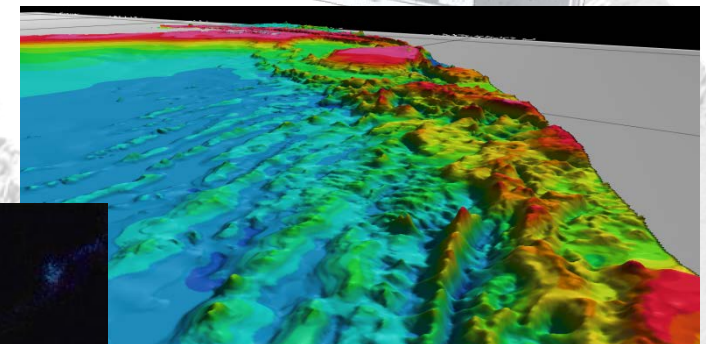
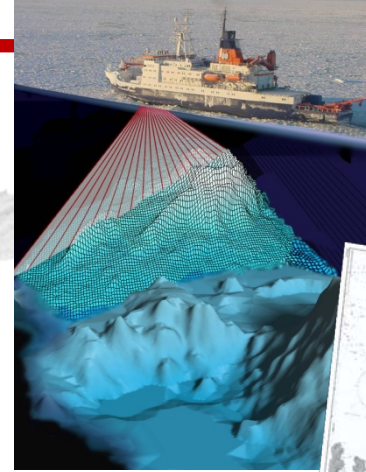
- Expert Group of SCAR since 2004
- Regional Mapping project of General Bathymetric Chart of the Oceans (GEBCO)
- Operates under the joint auspices of the Intergovernmental Oceanographic Commission (IOC) (of UNESCO) and the International Hydrographic Organization (IHO)
- Cooperation with the IHO Hydrographic Commission on Antarctica (HCA)
- Located at the Alfred Wegener Institute (AWI)

# Data Contributors

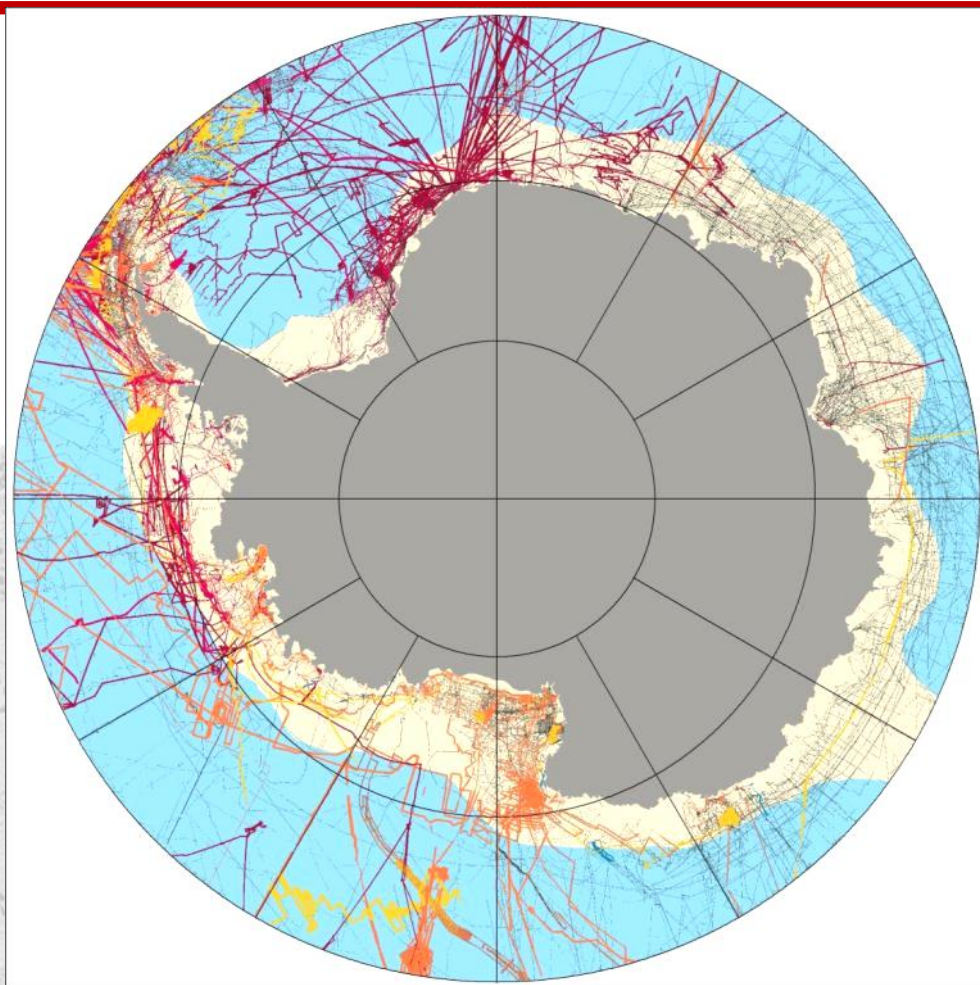


# IBCSO Database

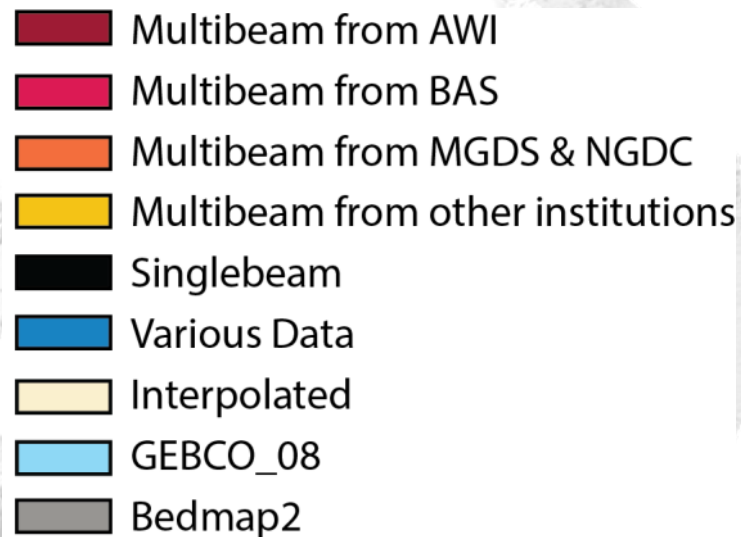
- Soundings
  - Multibeam
  - Singlebeam
- Nautical Charts
- Bathymetric Compilations
- Predicted bathymetry from satellite altimetry
- Continental Data

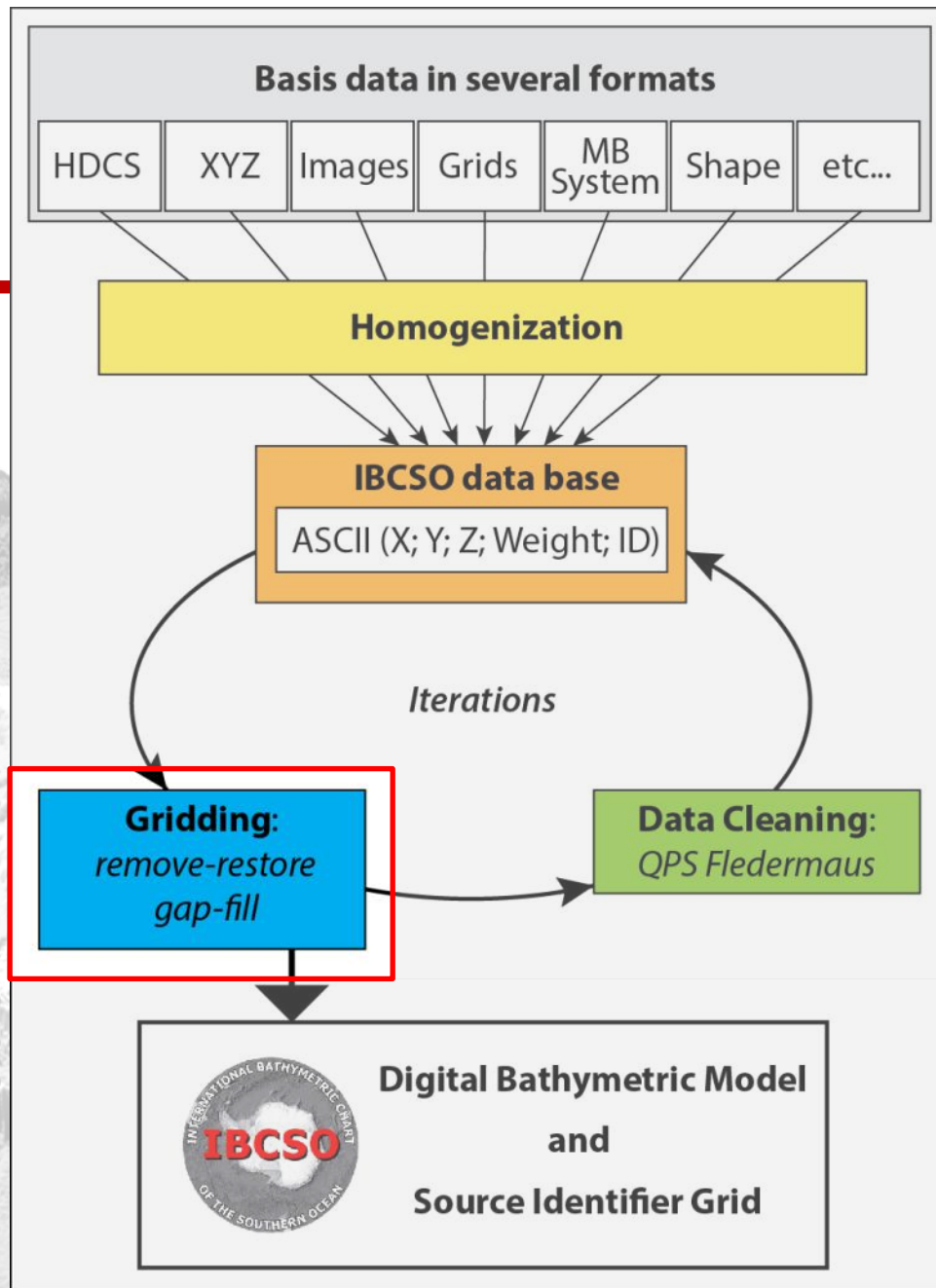


# Data Distribution



- More than 4200 million soundings
- 15.4 % Multibeam
- 1.4 % Singlebeam





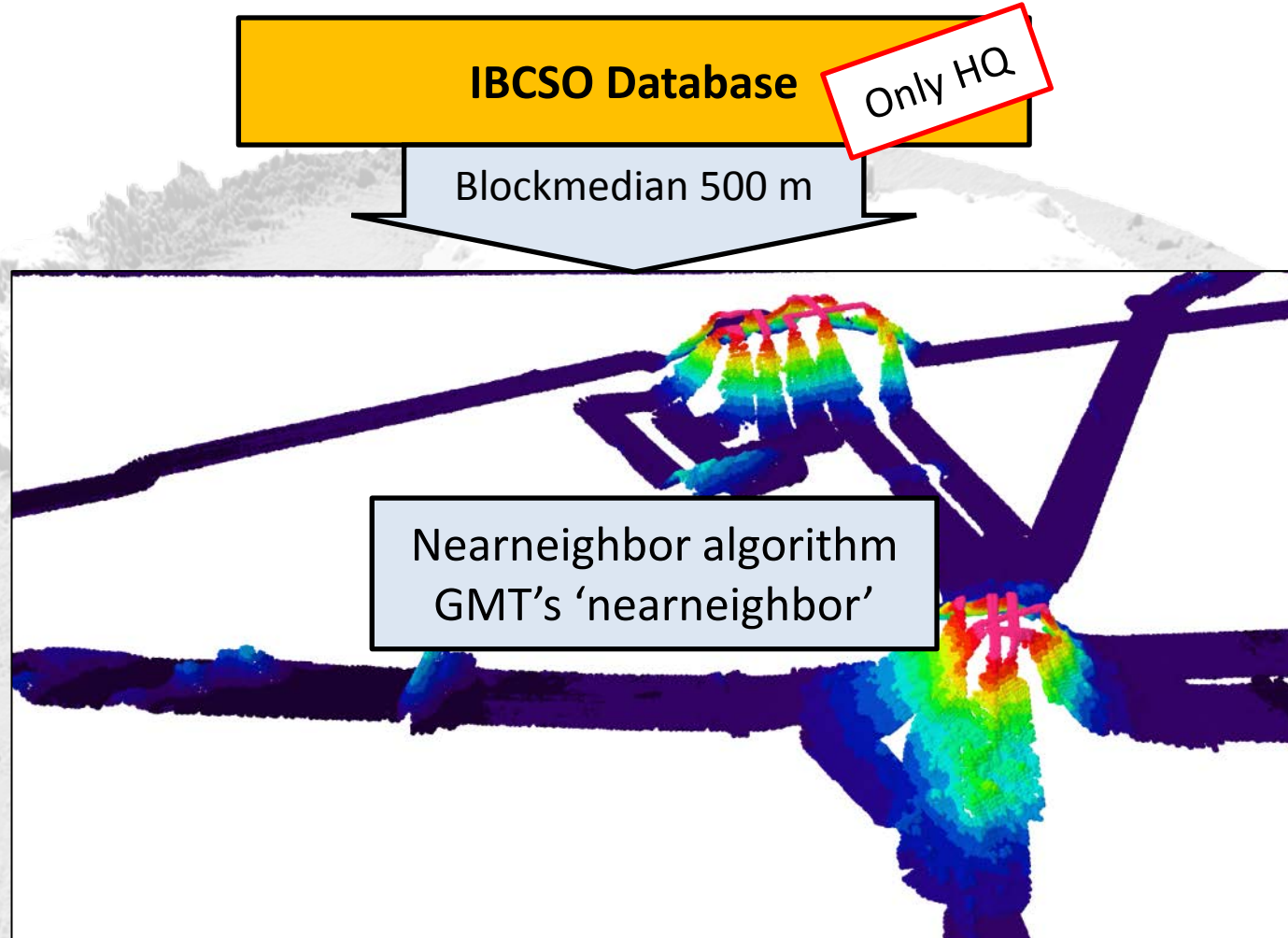
# Gridding (remove-restore)

**IBCSO Database**

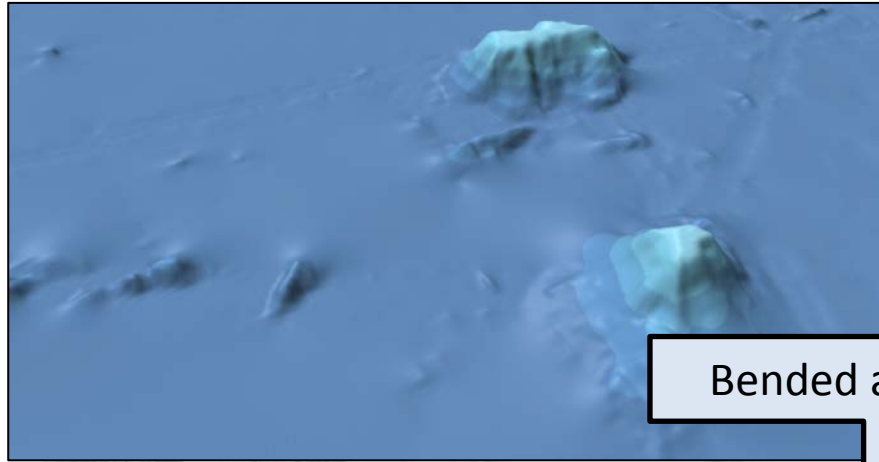
Blockmedian 2000 m

Splines under tension  
GMT's 'surface'

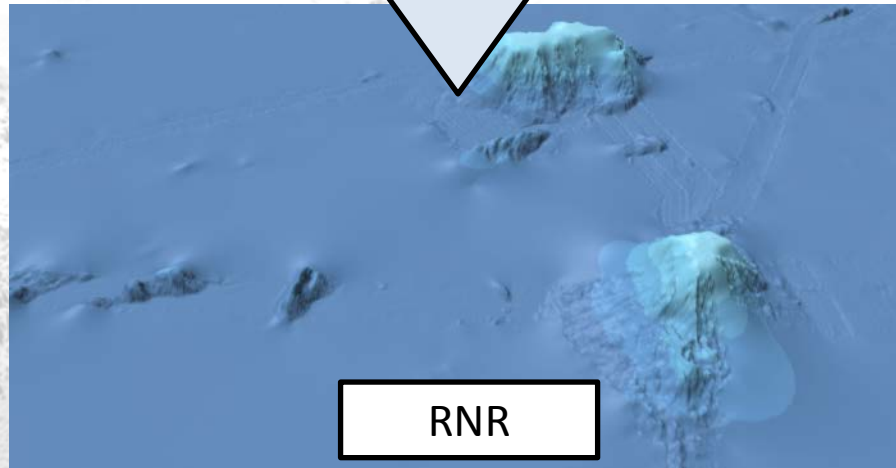
# Gridding (remove-restore)



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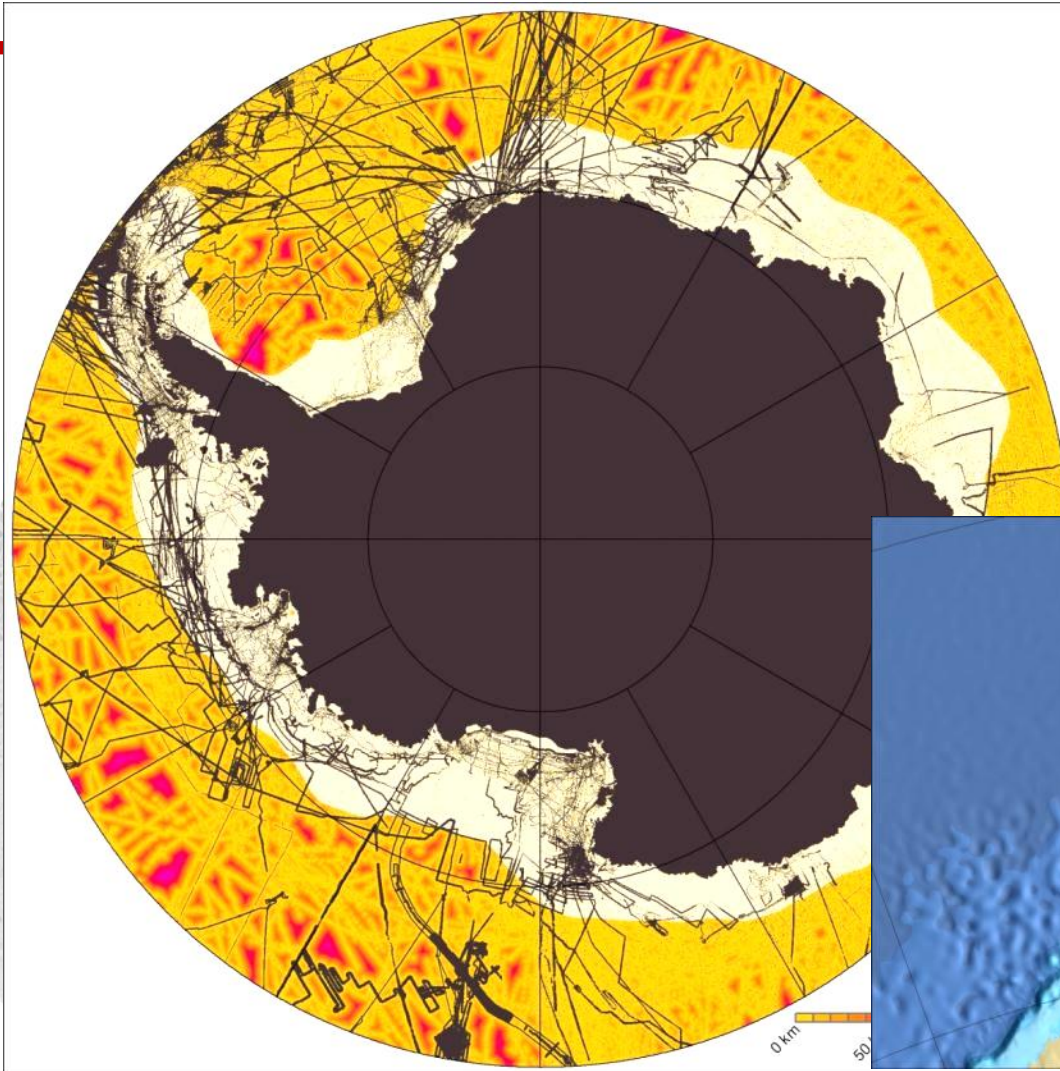


Bended and merged

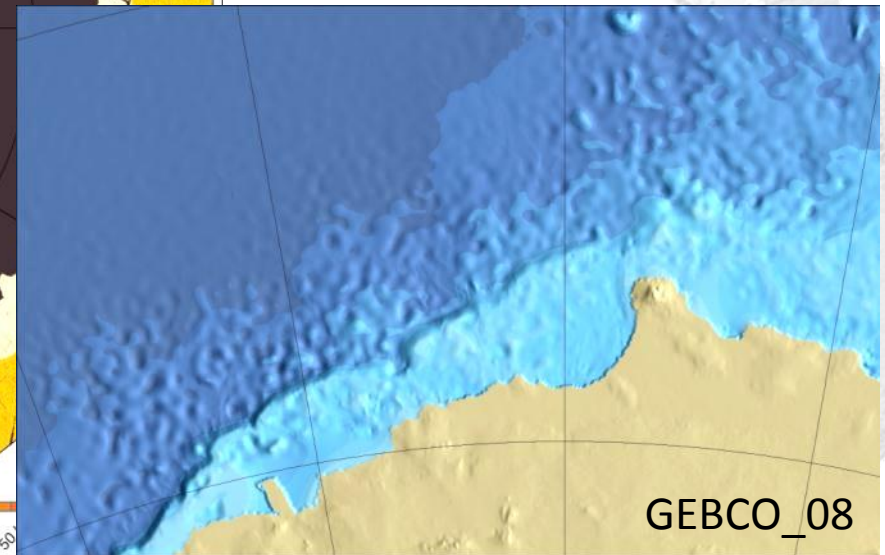


RNR

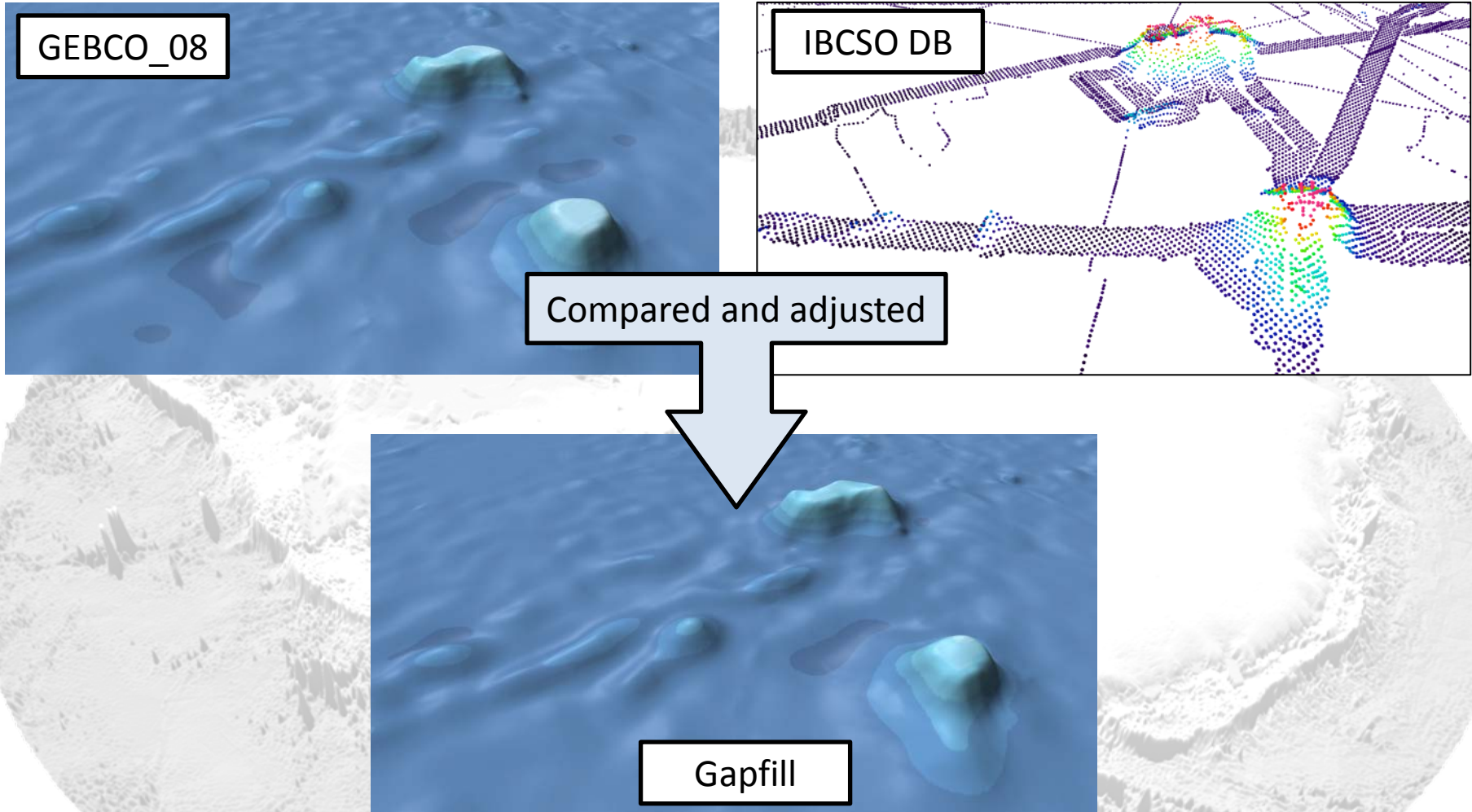
# Gridding (gap-fill)



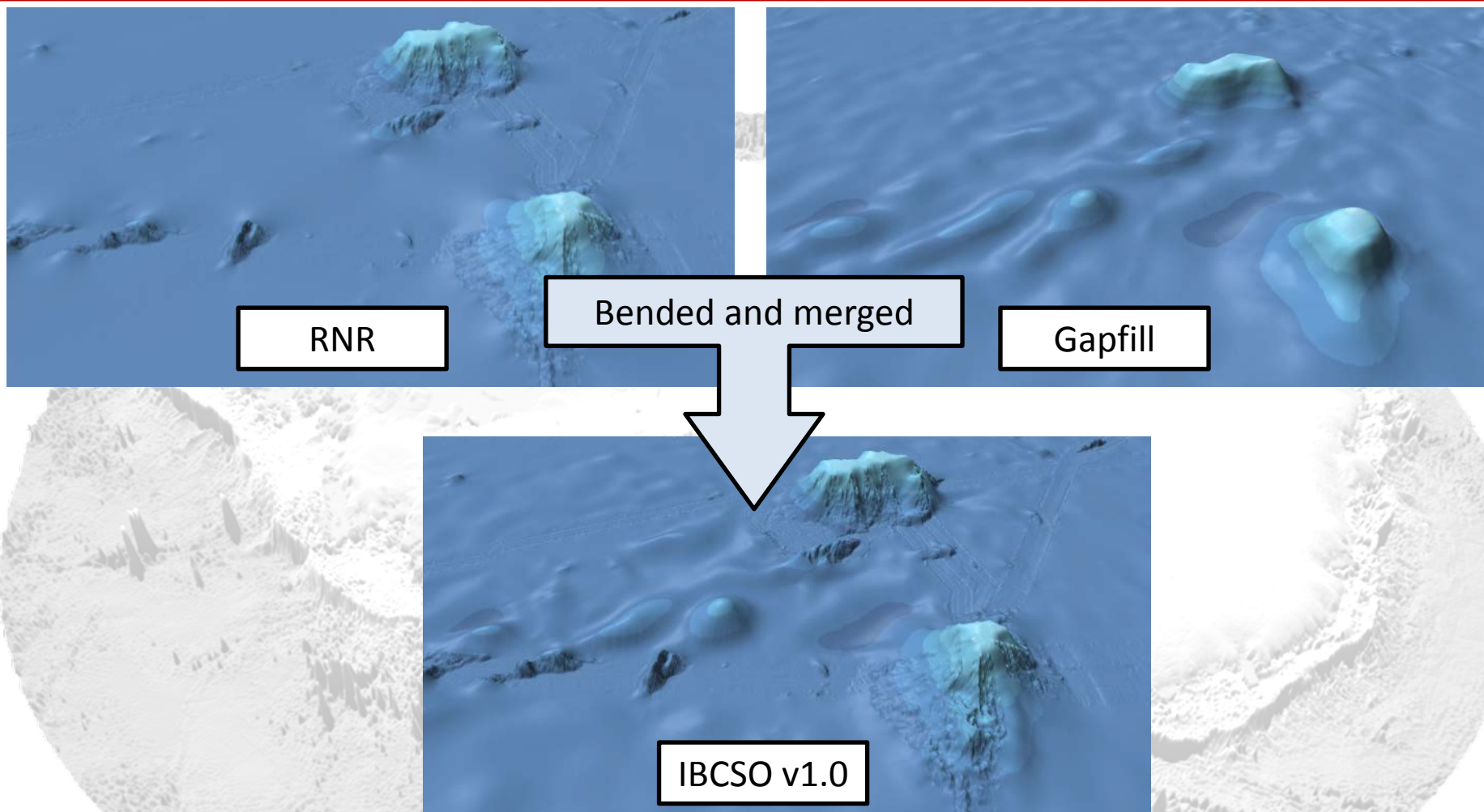
- Fill these gaps with predicted bathymetry from GEBCO\_08
- **But:** not for continental shelves and southernmost parts



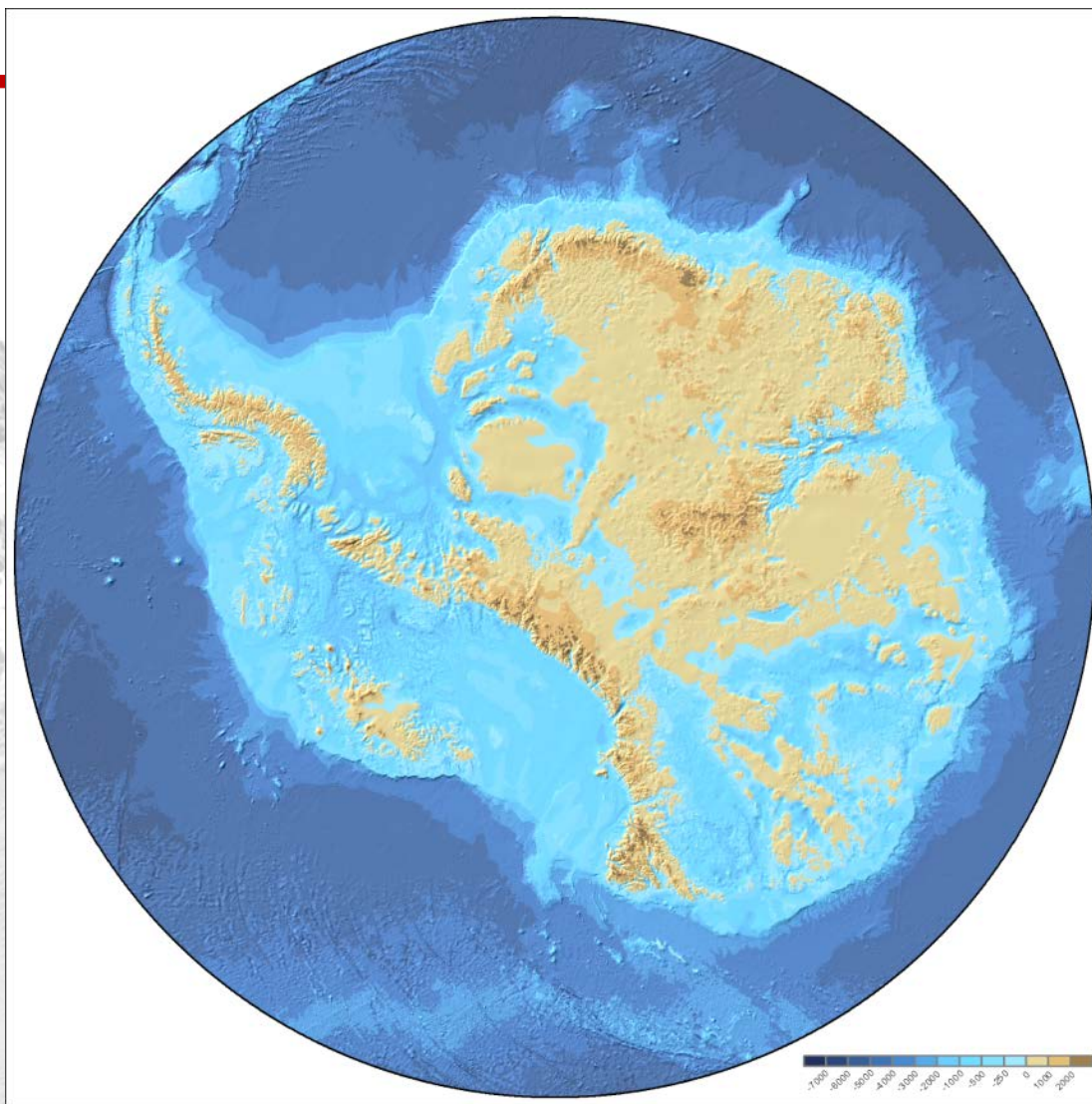
# Gridding (gap-fill)



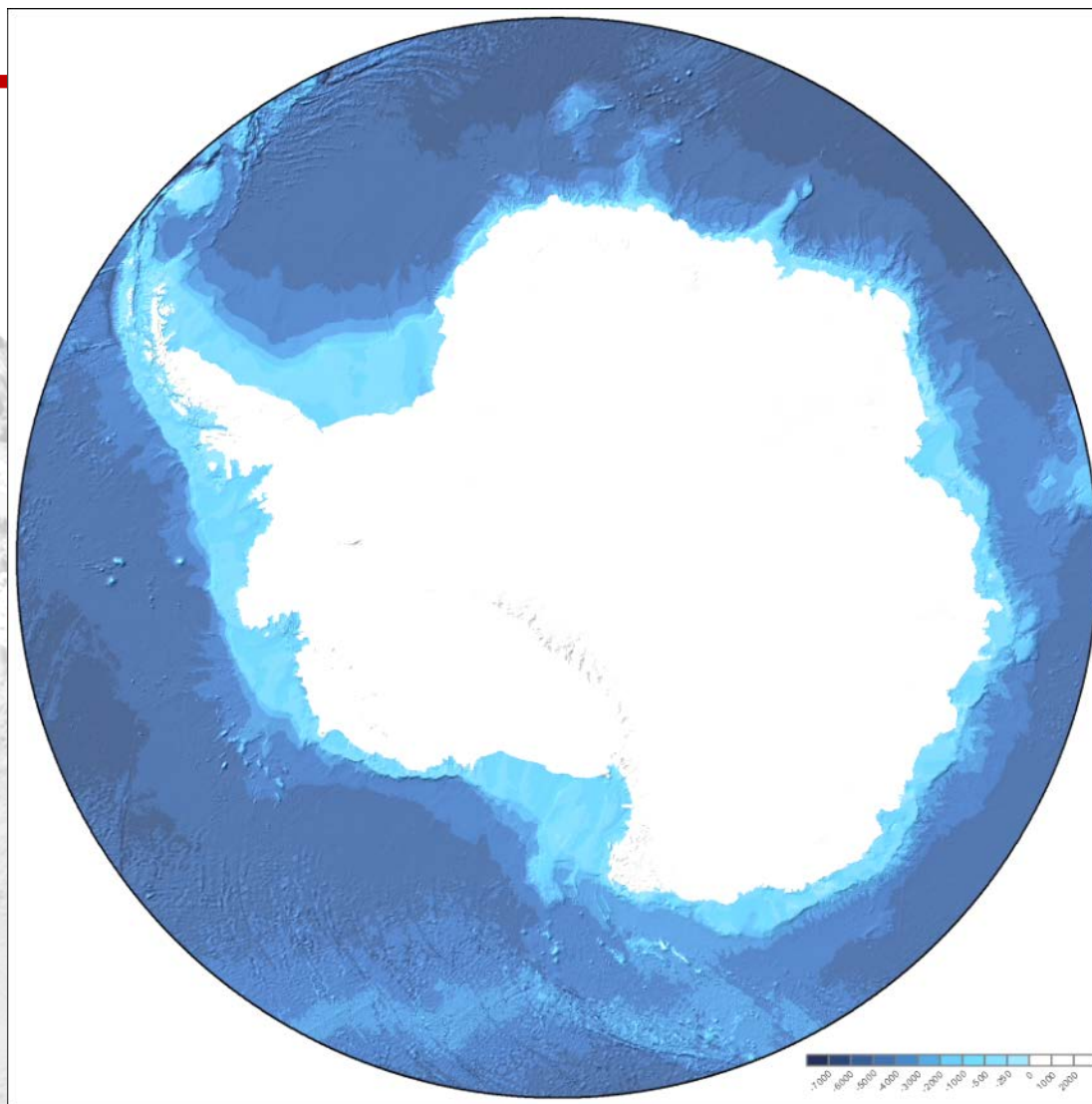
# Gridding (gap-fill)



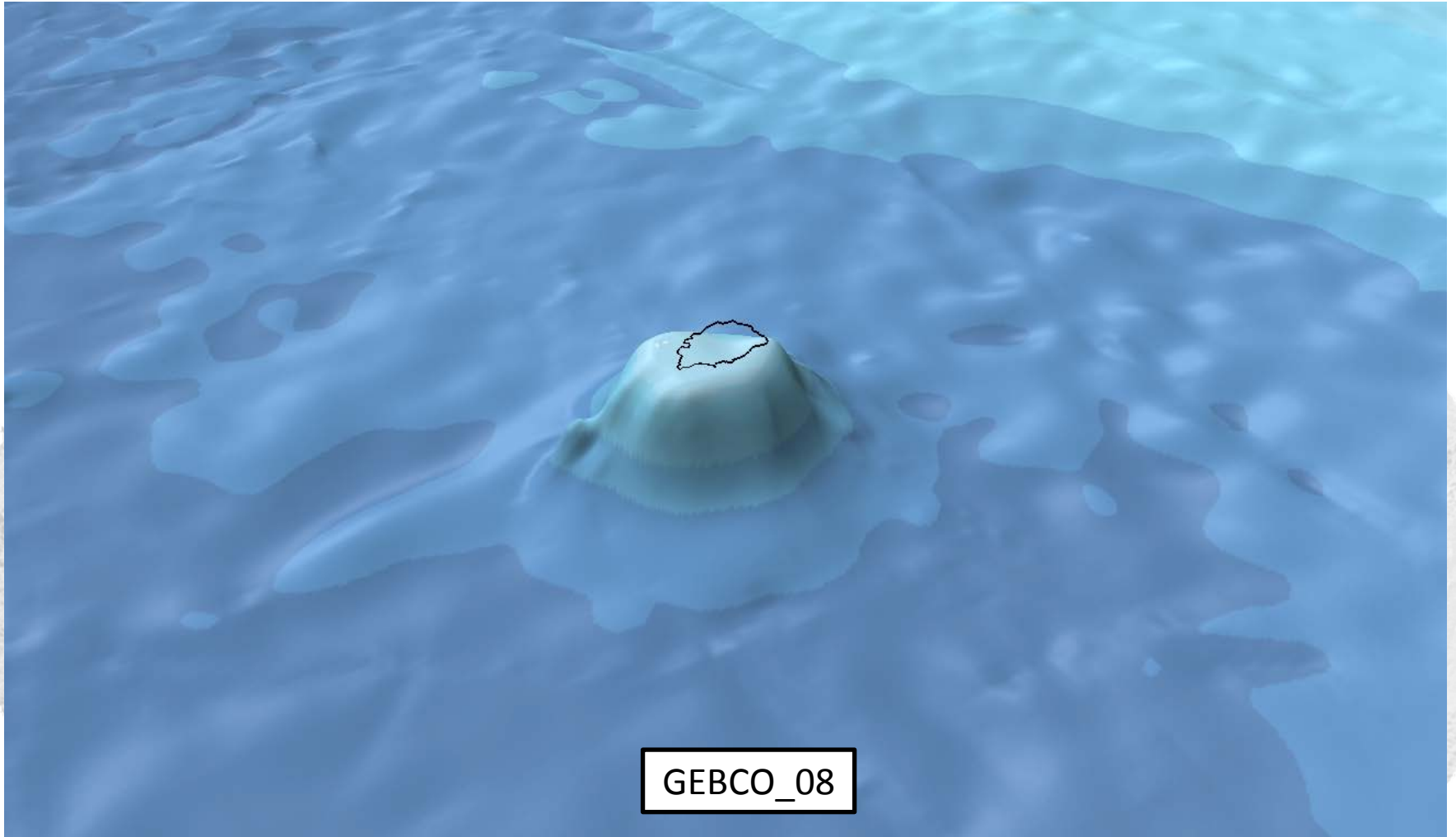
# IBCSO Version 1.0



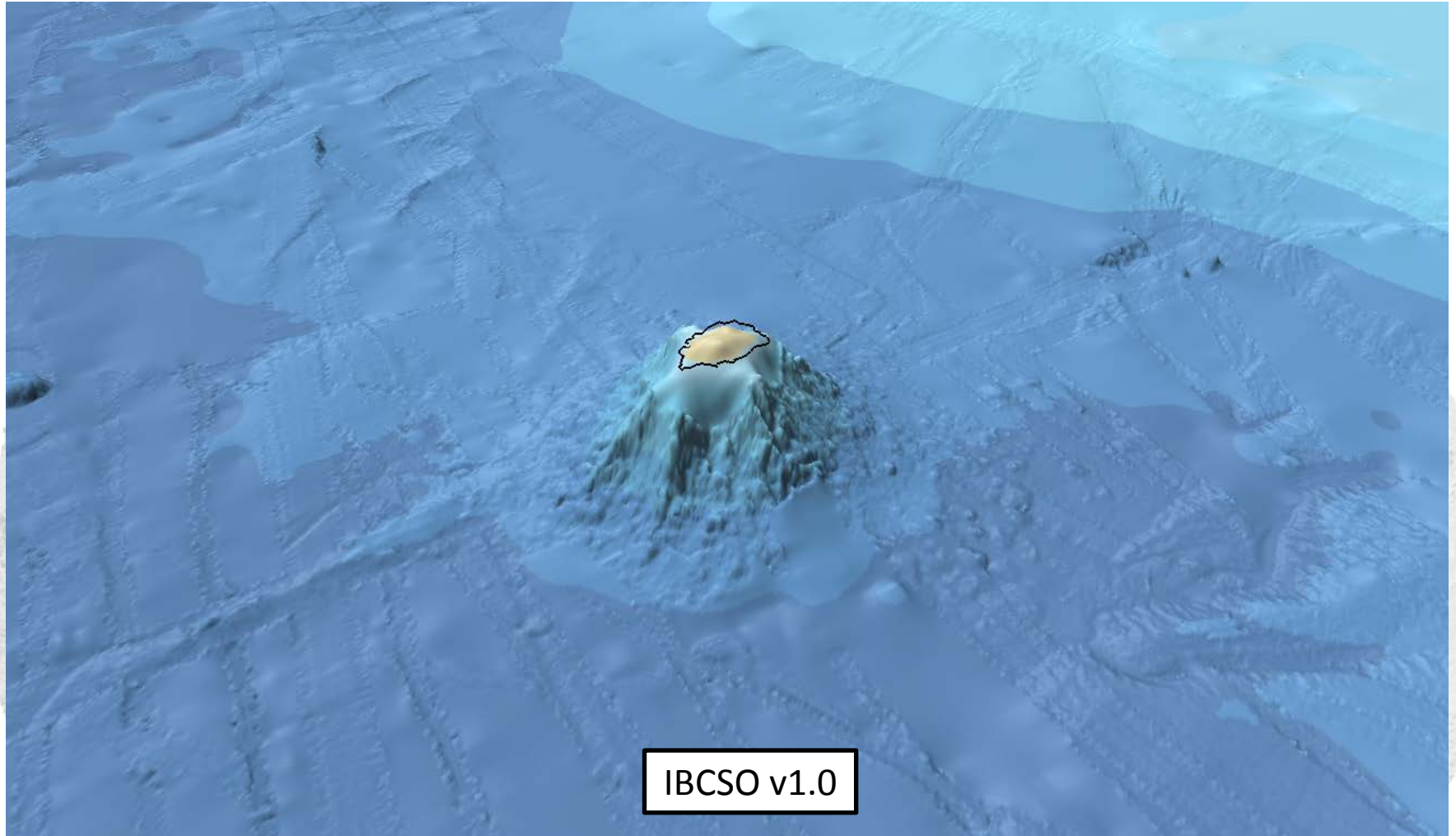
# IBCSO Version 1.0



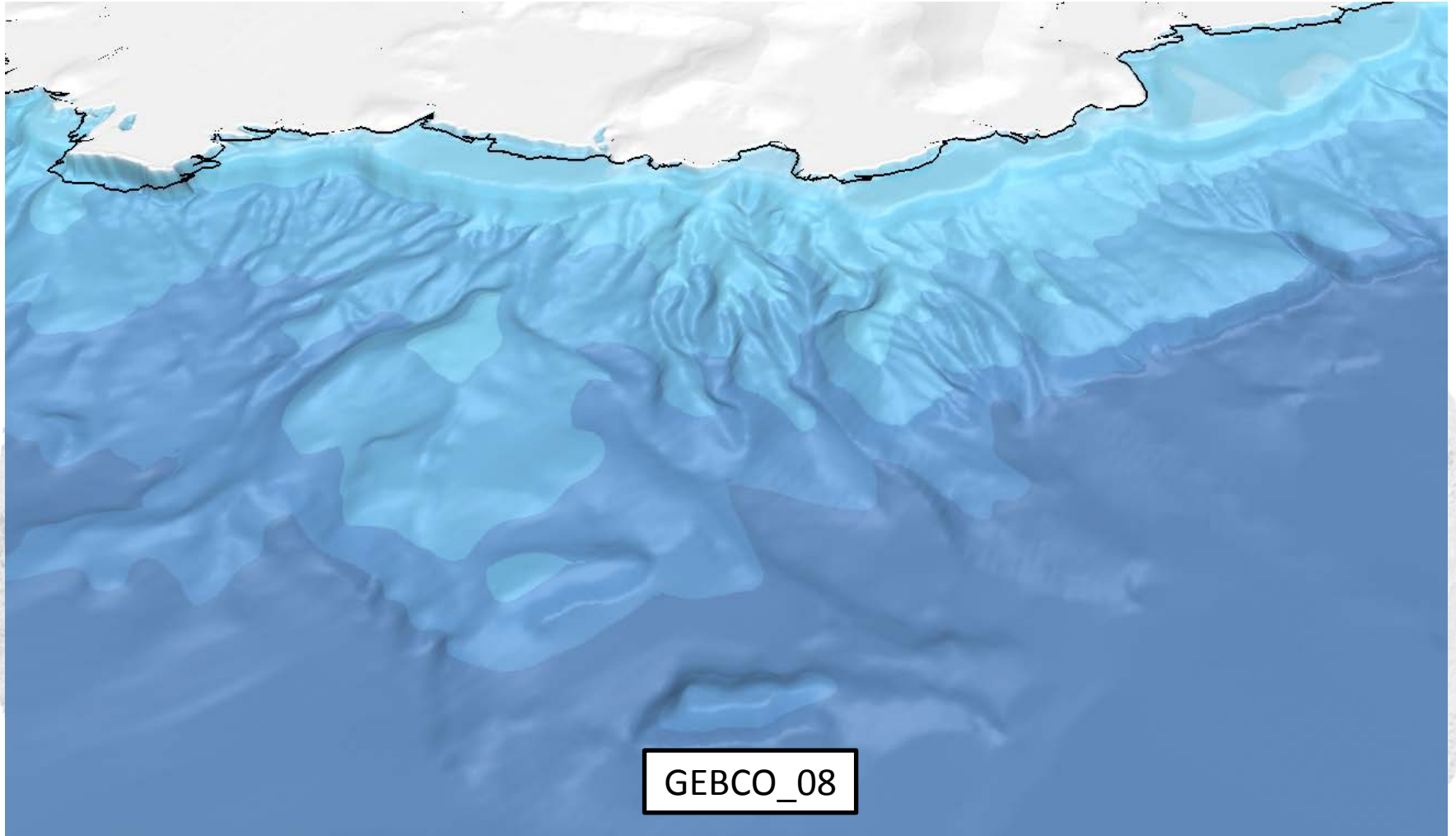
# Comparison to GEBCO\_08



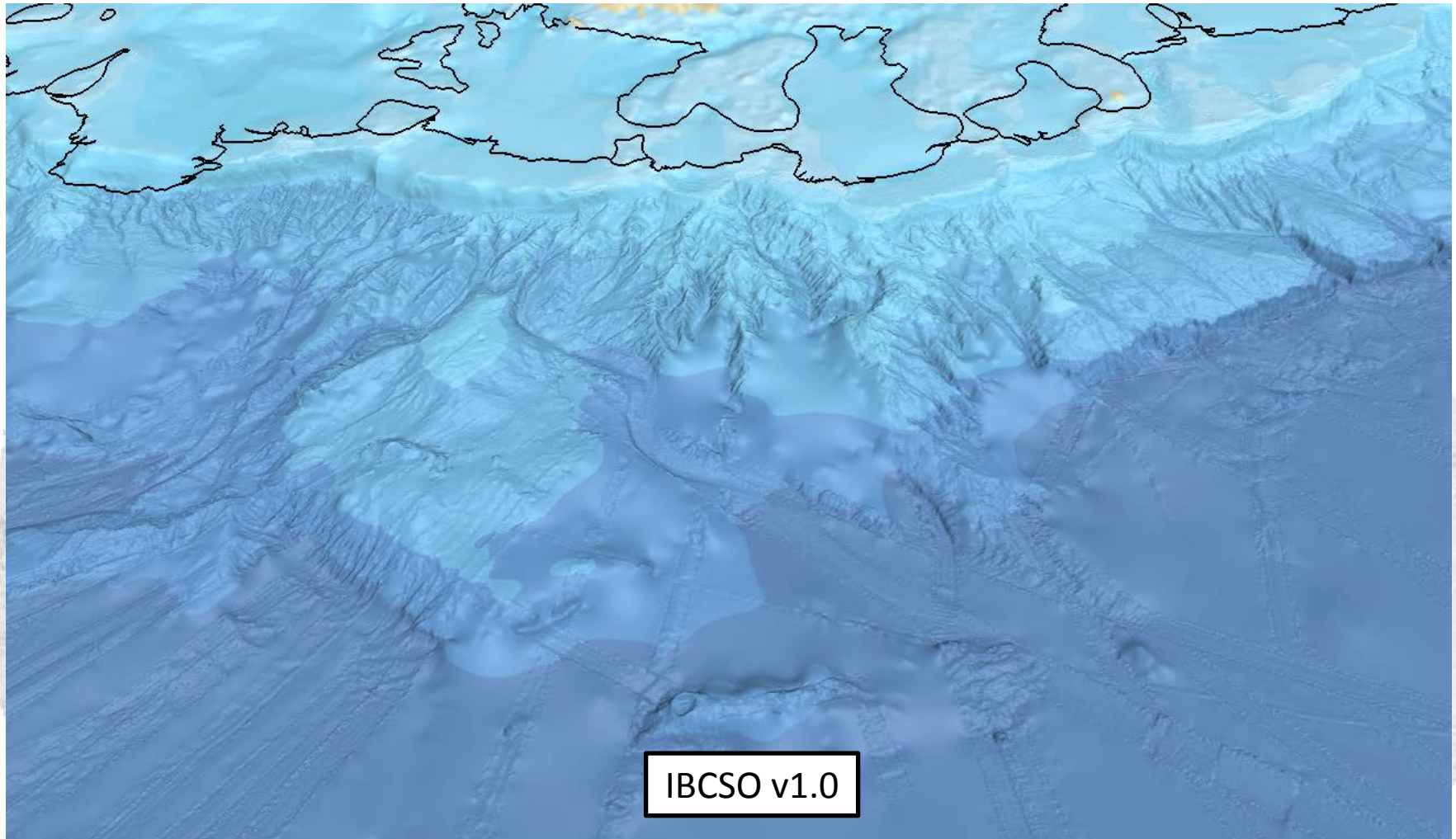
# Comparison to GEBCO\_08



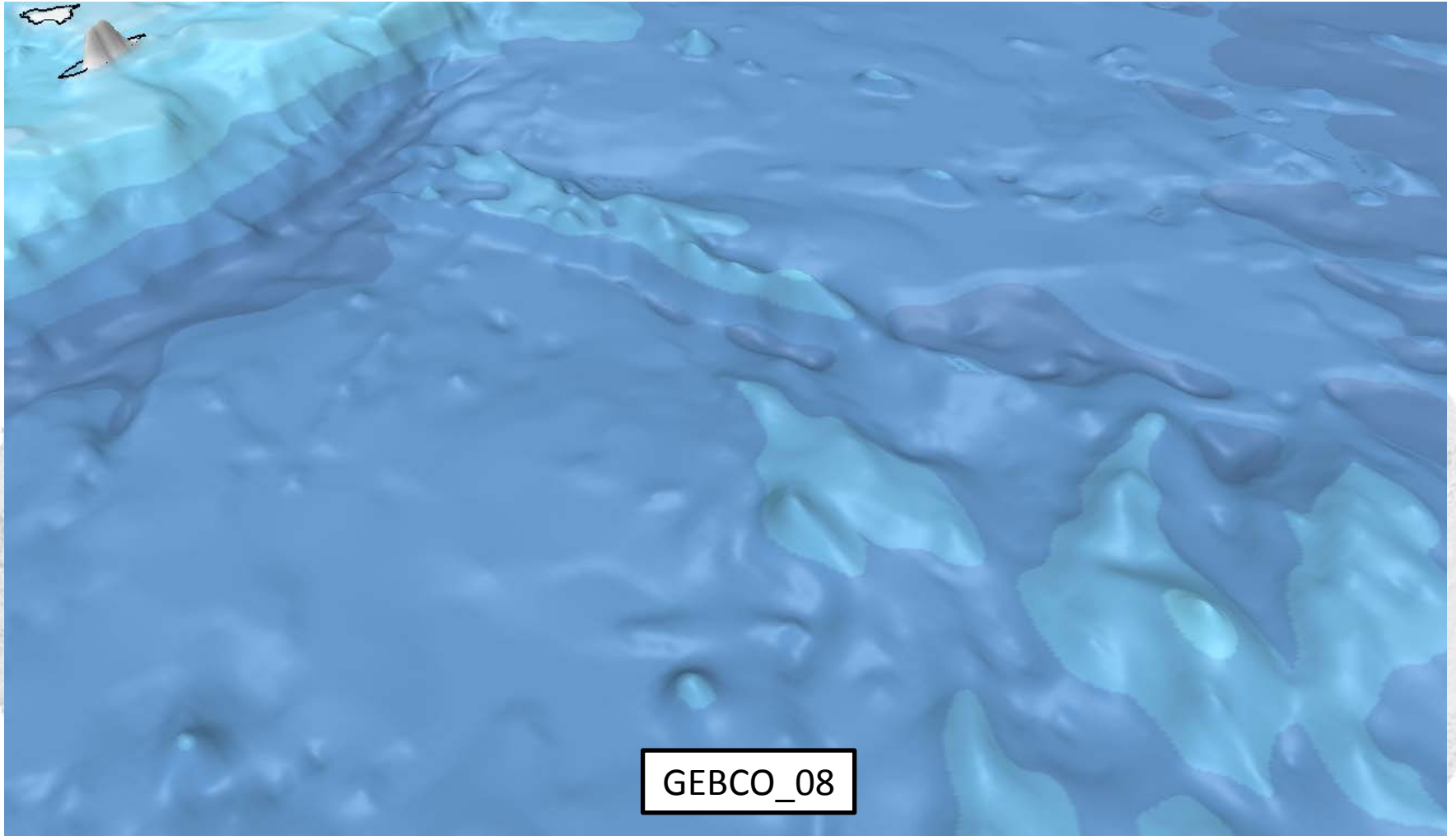
# Comparison to GEBCO\_08



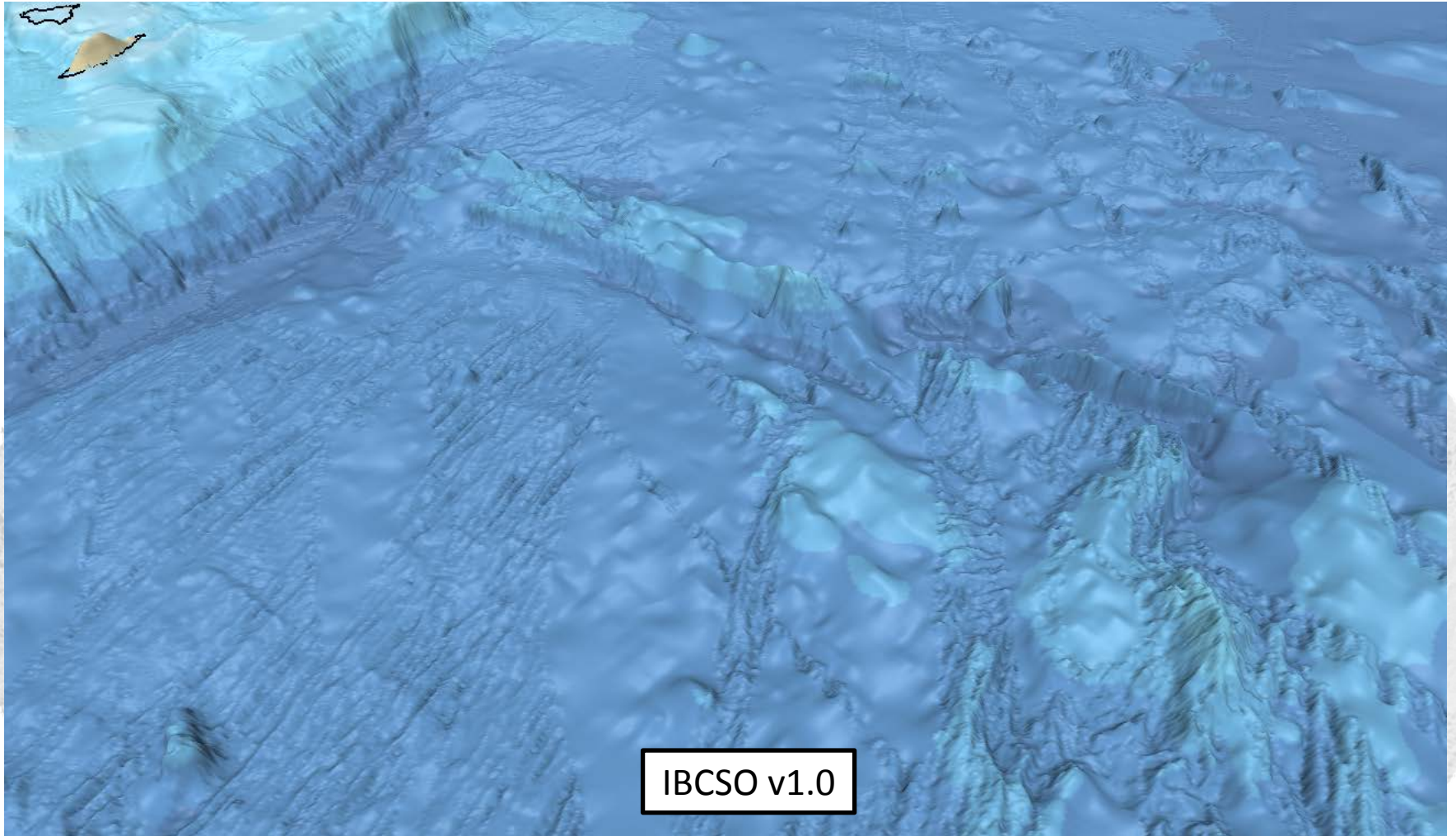
# Comparison to GEBCO\_08



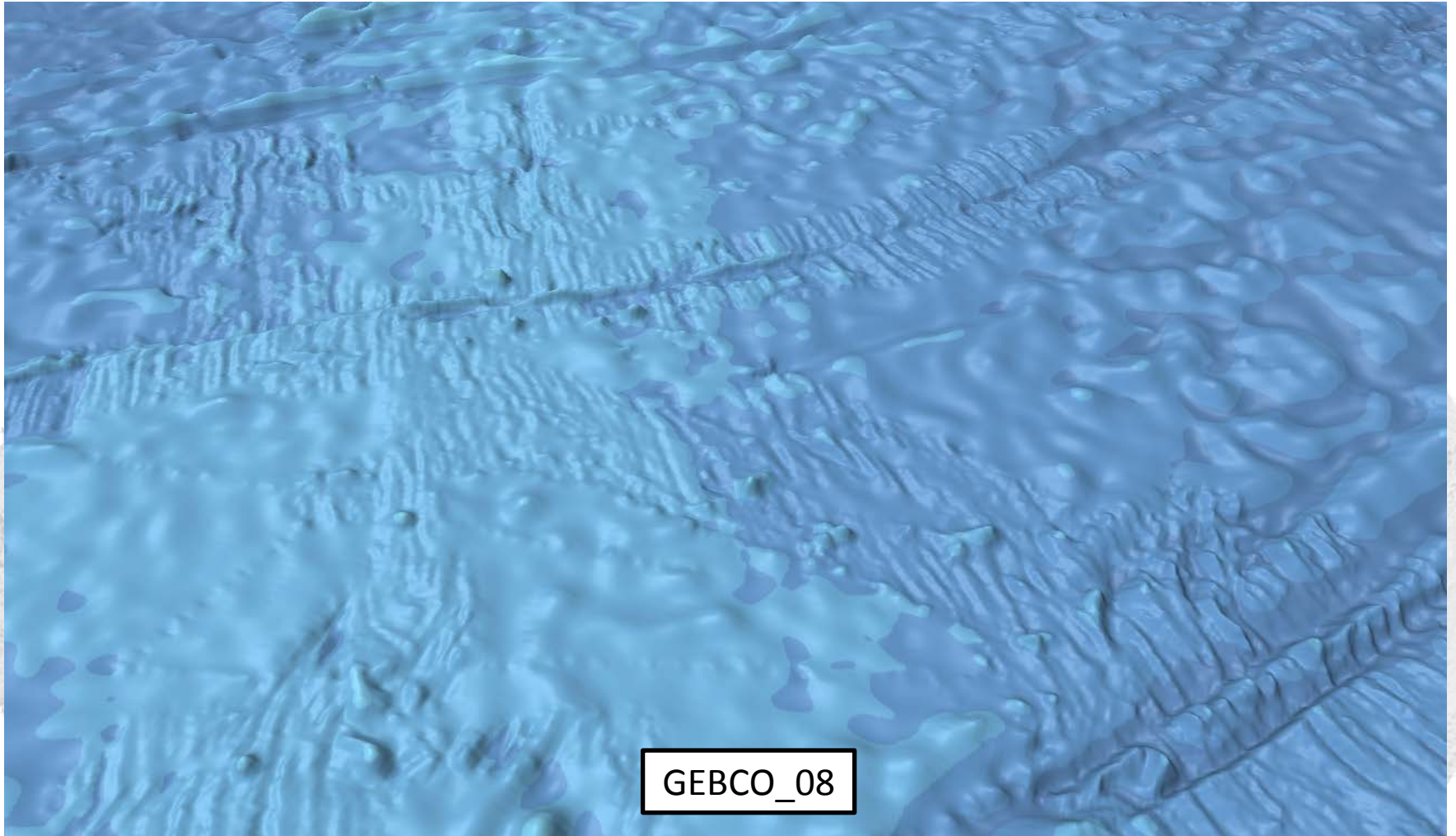
# Comparison to GEBCO\_08



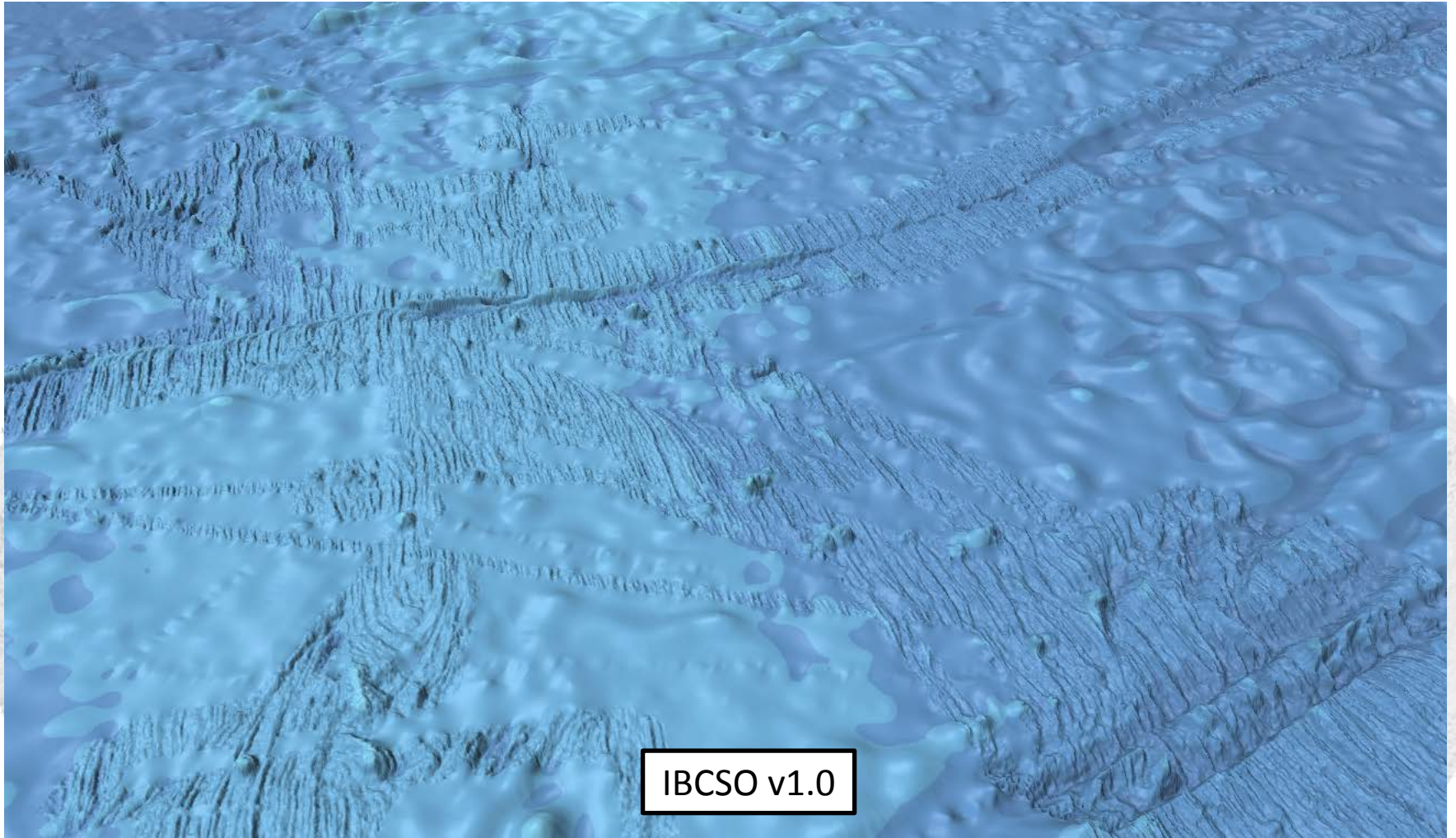
# Comparison to GEBCO\_08



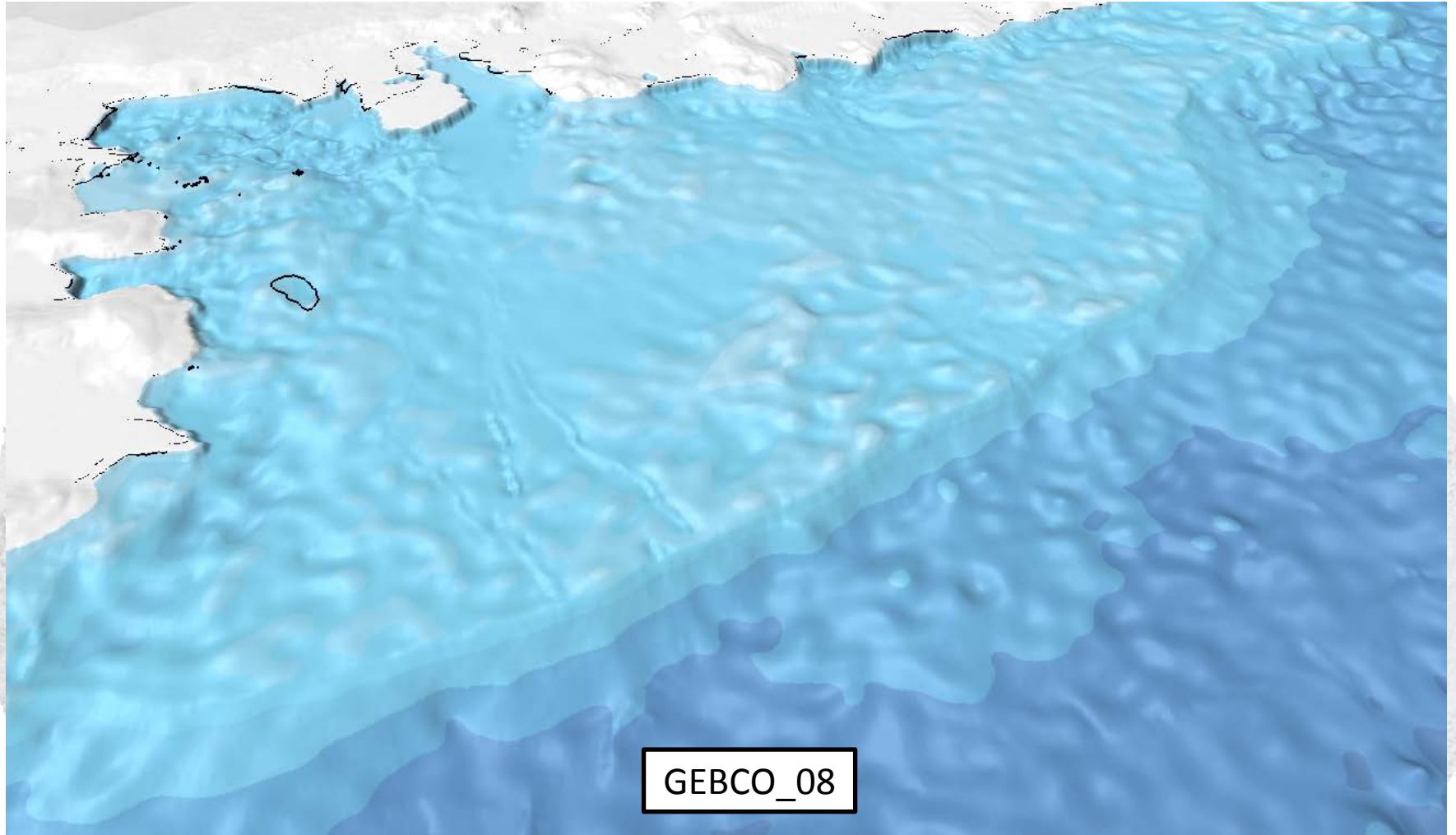
# Comparison to GEBCO\_08



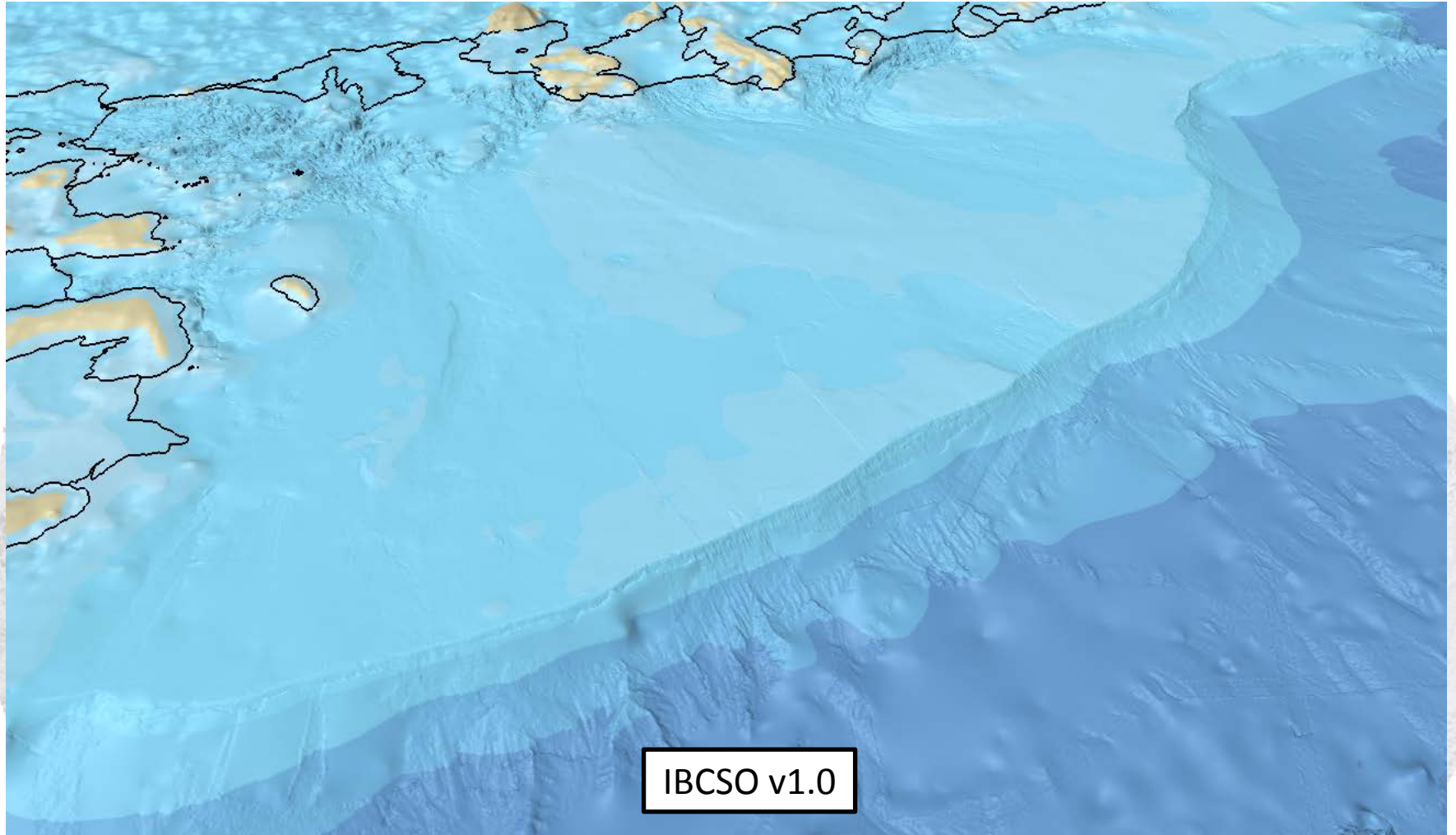
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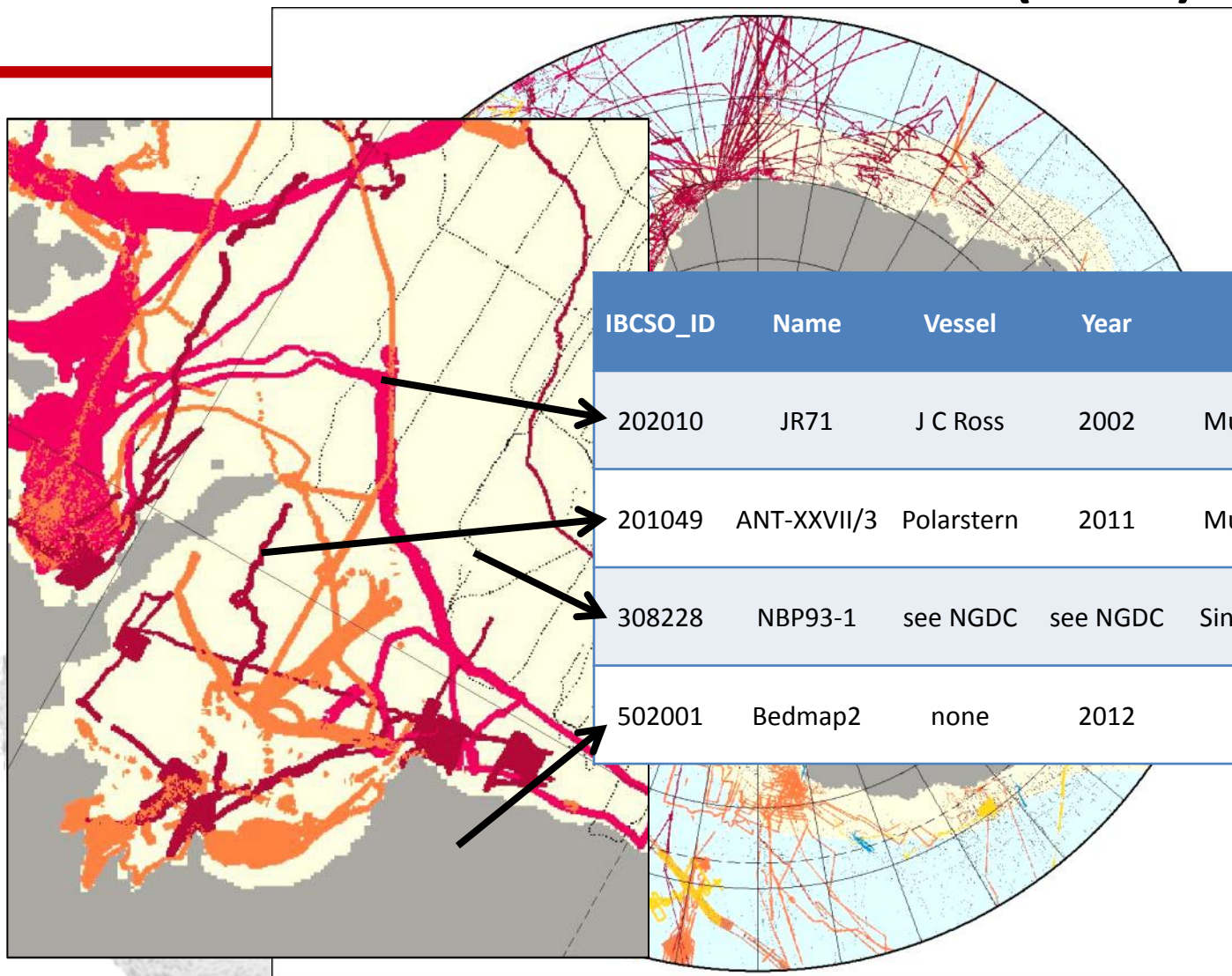
# Comparison to GEBCO\_08



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# Source Identifier (SID)



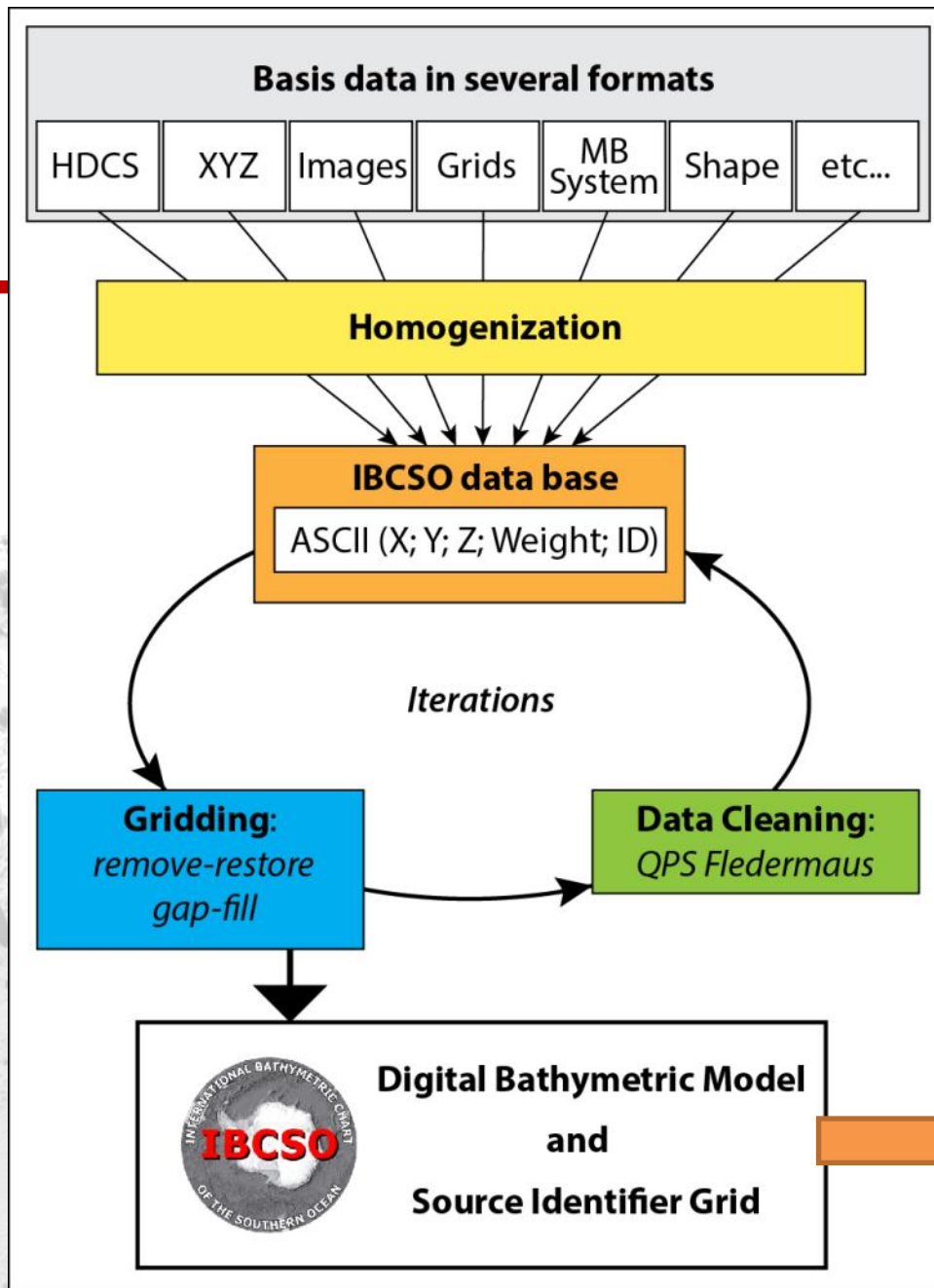
# Data retrieval

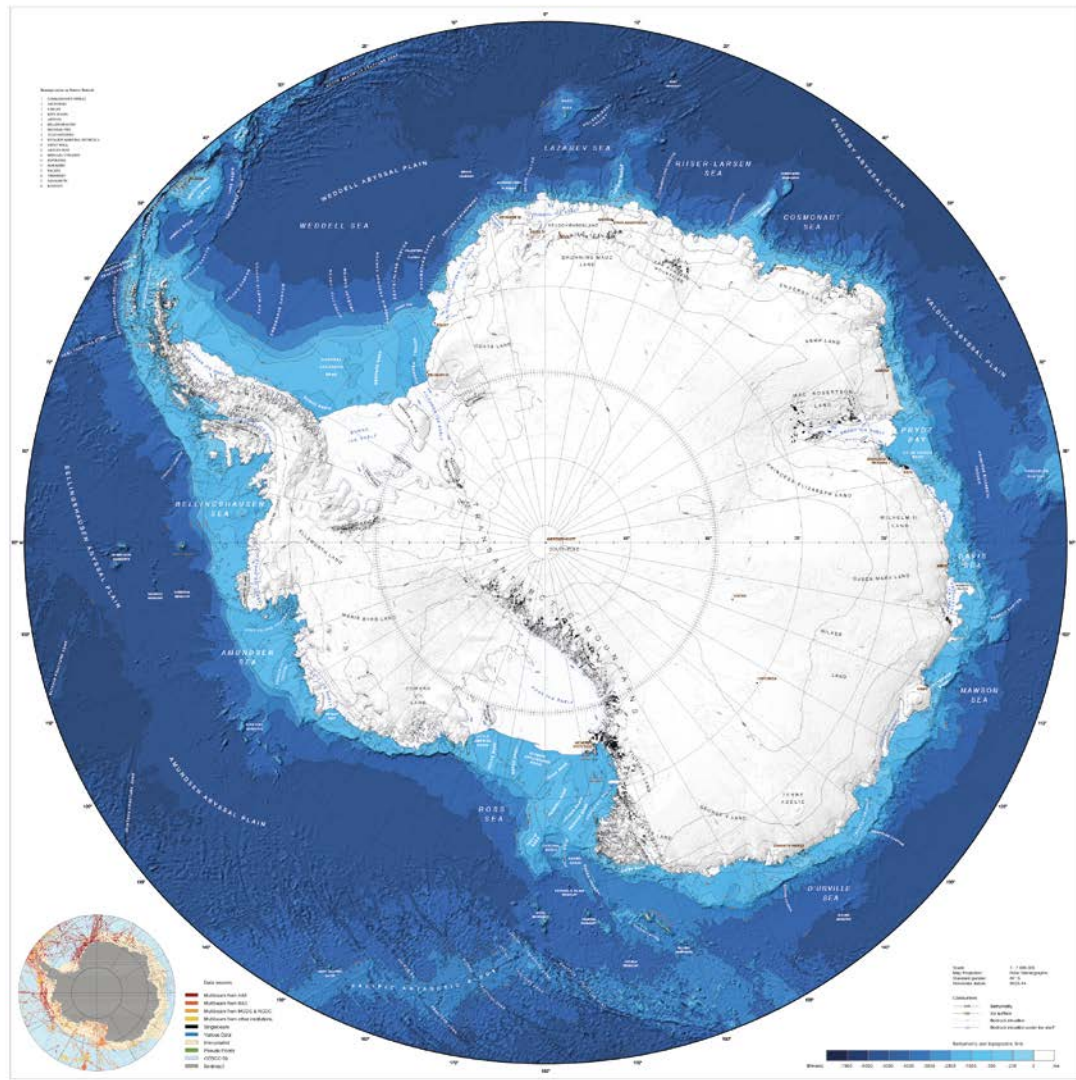
[www.ibcso.org](http://www.ibcso.org) -> Data

[www.pangaea.de](http://www.pangaea.de) -> IBCSO

| Available Data Versions |                                                                                                          |
|-------------------------|----------------------------------------------------------------------------------------------------------|
| Projections             | Polar stereographic with truescale 65° S<br>Polar stereographic with truescale 71° S<br>Geographic WGS84 |
| Resolution              | 500 x 500 m<br>1 x 1 min                                                                                 |
| Dataformats             | GeoTiff (ArcGIS)<br>NetCDF (GMT)<br>SD (Eledormus)                                                       |

Arndt et al. (2013) *Geophys. Res. Lett.*





**Background**

The International Commission for the Management of Shipwrecks (ICMIS) was established in 1972 by the International Maritime Organization (IMO) and the United Nations Educational, Scientific and Cultural Organization (UNESCO) to coordinate and promote international cooperation in the management of shipwrecks. The ICMIS has been instrumental in the development of international conventions, guidelines, and codes of practice for the management of shipwrecks. The ICMIS has also been instrumental in the development of international conventions, guidelines, and codes of practice for the management of shipwrecks. The ICMIS has also been instrumental in the development of international conventions, guidelines, and codes of practice for the management of shipwrecks.

**ICMIS Objectives**

The ICMIS has the following objectives:

- To coordinate and promote international cooperation in the management of shipwrecks.
- To develop and promote international conventions, guidelines, and codes of practice for the management of shipwrecks.
- To provide technical assistance and training to member states.
- To conduct research and promote the exchange of information on shipwrecks.
- To promote the protection and preservation of shipwrecks as cultural heritage.

**ICMIS Membership**

The ICMIS has a membership of 100 member states, 10 associate member states, and 10 observer states. The member states are divided into four regions: Africa, Asia, Europe, and the Americas. The associate member states are divided into two regions: Africa and Asia. The observer states are divided into two regions: Africa and Asia.

**ICMIS Activities**

The ICMIS has a number of activities, including:

- Organizing international conferences and seminars on shipwrecks.
- Providing technical assistance and training to member states.
- Conducting research and promoting the exchange of information on shipwrecks.
- Promoting the protection and preservation of shipwrecks as cultural heritage.

**ICMIS Publications**

The ICMIS has a number of publications, including:

- The ICMIS Bulletin, a quarterly journal of shipwreck news.
- The ICMIS Yearbook, an annual publication of shipwreck news.
- The ICMIS Handbook, a manual of shipwreck management.

**ICMIS Contact Information**

The ICMIS is based in London, United Kingdom. The contact information is as follows:

ICMIS Secretariat  
 100, The Quadrant, London, W1 8UJ, United Kingdom  
 Tel: +44 (0)20 7463 1000  
 Fax: +44 (0)20 7463 1001  
 Email: [icmis@icmis.org](mailto:icmis@icmis.org)  
 Website: [www.icmis.org](http://www.icmis.org)

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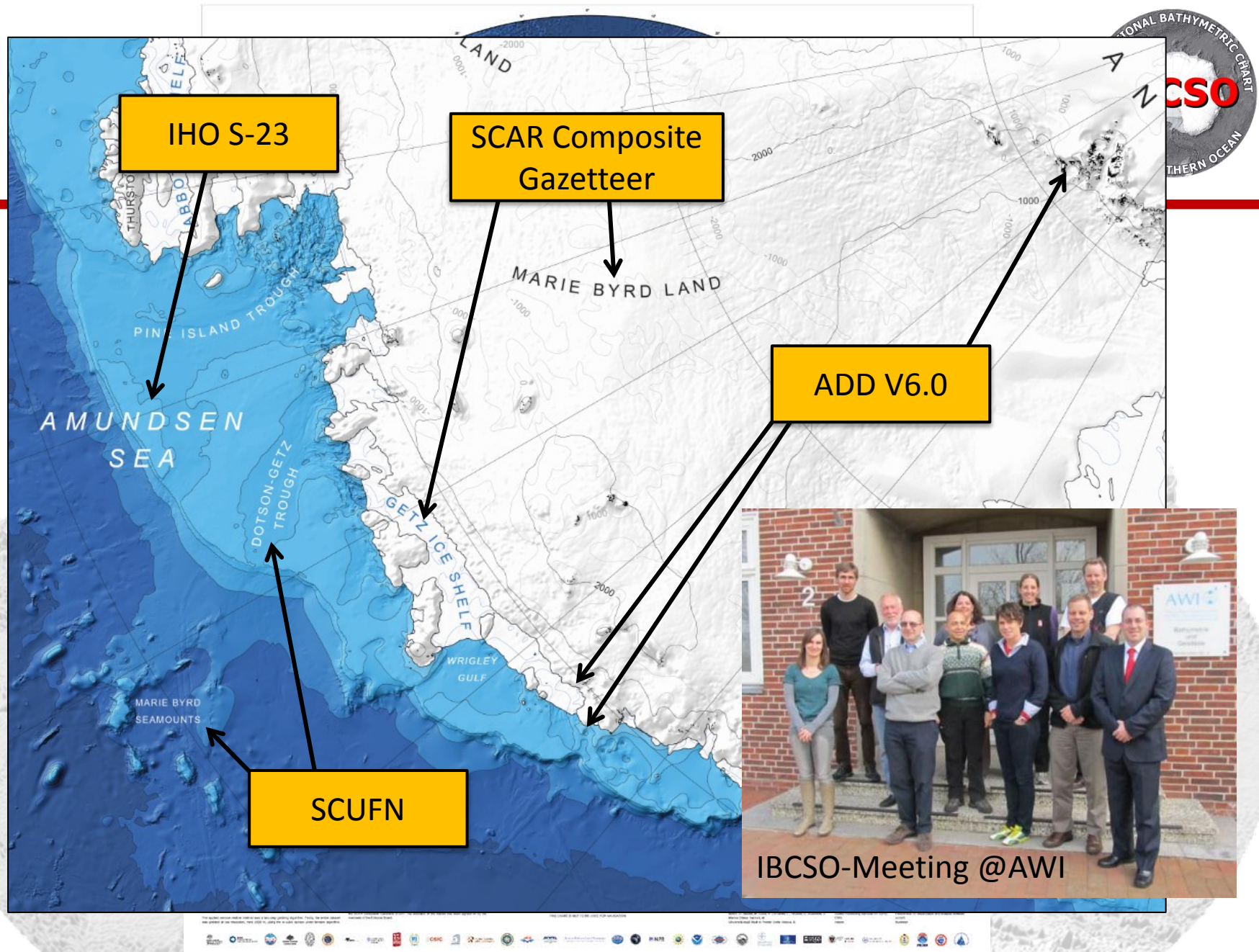
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 Website: [www.icmis.org](http://www.icmis.org)



Foil with microlenses

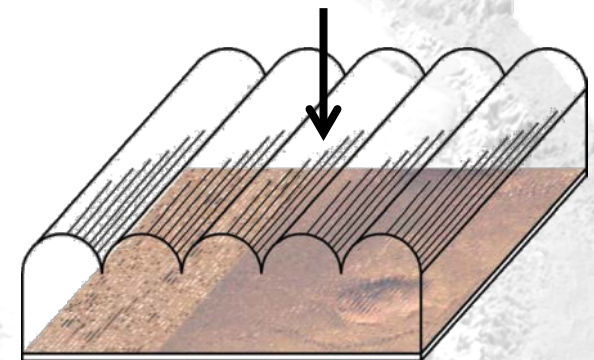
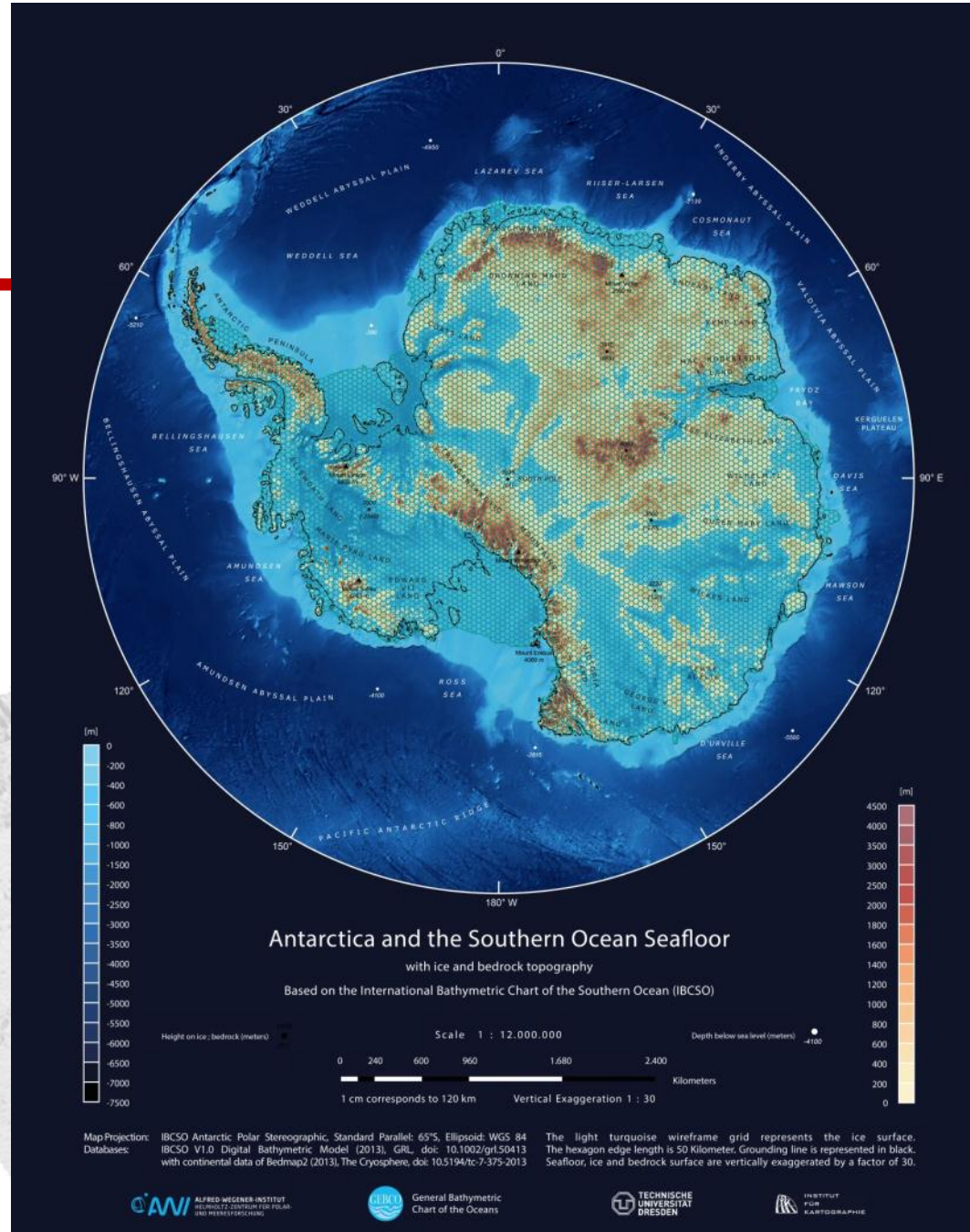


Image with multiple  
synthetic views



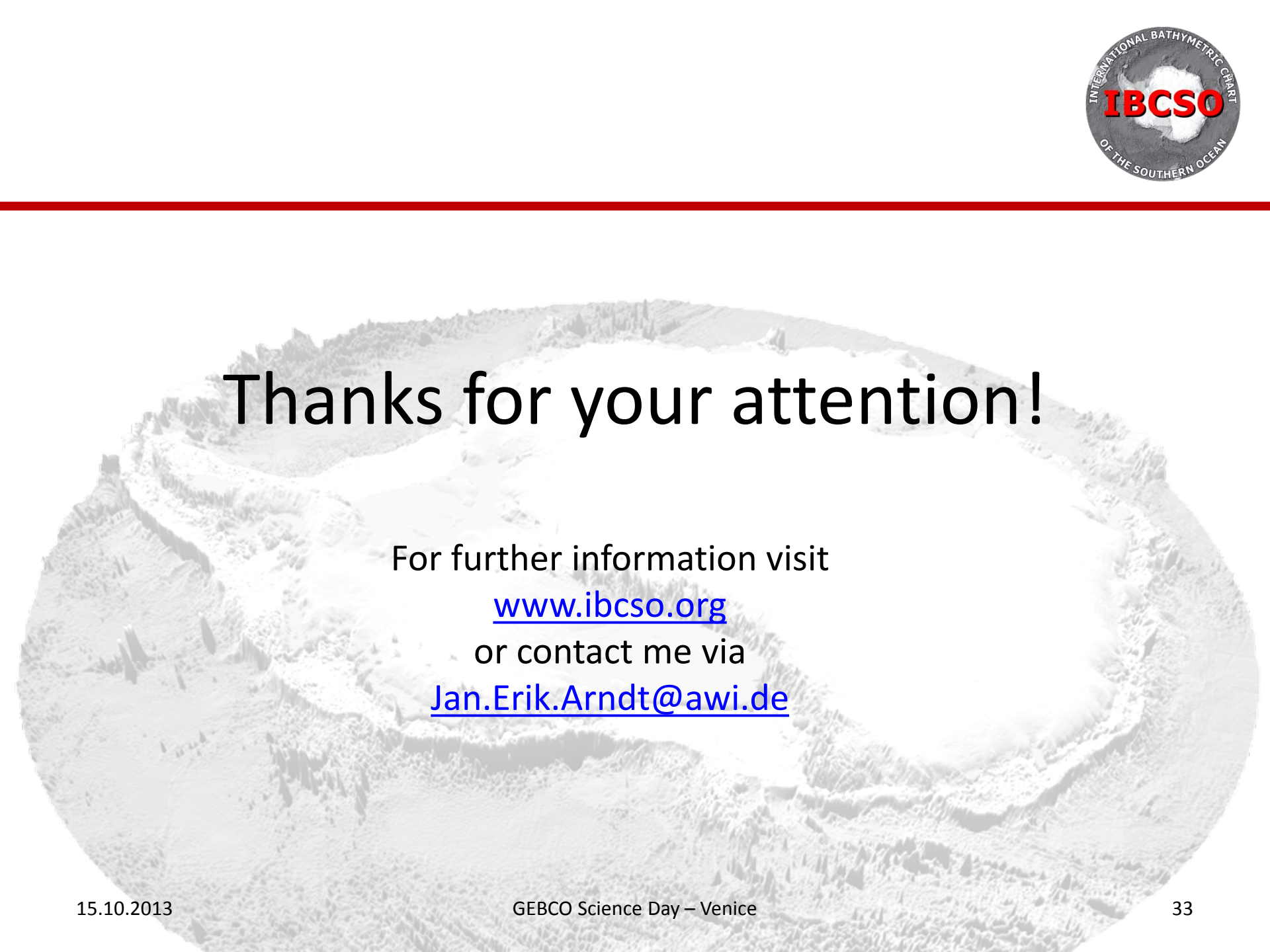
# Future of IBCSO!?



## **SCAR OPEN SCIENCE CONFERENCE, XXXIII SCAR BIENNIAL MEETINGS, AND XXVI COMNAP AGM**

23 August to 3 September 2014,  
New Zealand

Image: Rob Suisted/[www.naturespic.com](http://www.naturespic.com)



# Thanks for your attention!

For further information visit

[www.ibcso.org](http://www.ibcso.org)

or contact me via

[Jan.Erik.Arndt@awi.de](mailto:Jan.Erik.Arndt@awi.de)