



IBCSO v1

A preview on Version 1 of the International Bathymetric Chart of the Southern Ocean

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Objective of the IBCSO

- Create a first seamless bathymetric grid of the circum antarctic waters

Scientific benefits includes:

- Interpretation of seabed geology
- Building of habitat models and maps
- Investigation of deep ocean current pathways

Other benefits:

- Serve as database for new Nautical Charts to improve the safety of navigation



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)



IBCSO specifications (grid)

Area: Antarctic treaty area - south of 60°S

Projection: Polar Stereographic,
with true scale at 65 °S

Resolution: 500 Meter

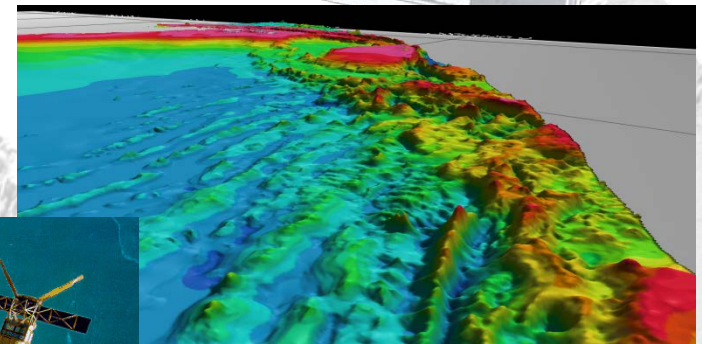
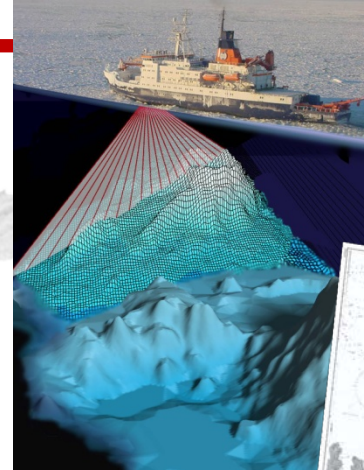
Release: Fall 2012

Format: ArcGIS, GMT

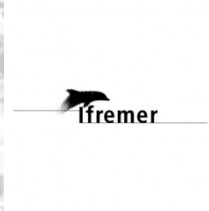
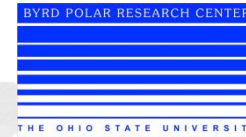
Data portal: www.ibcso.org

IBCSO Database

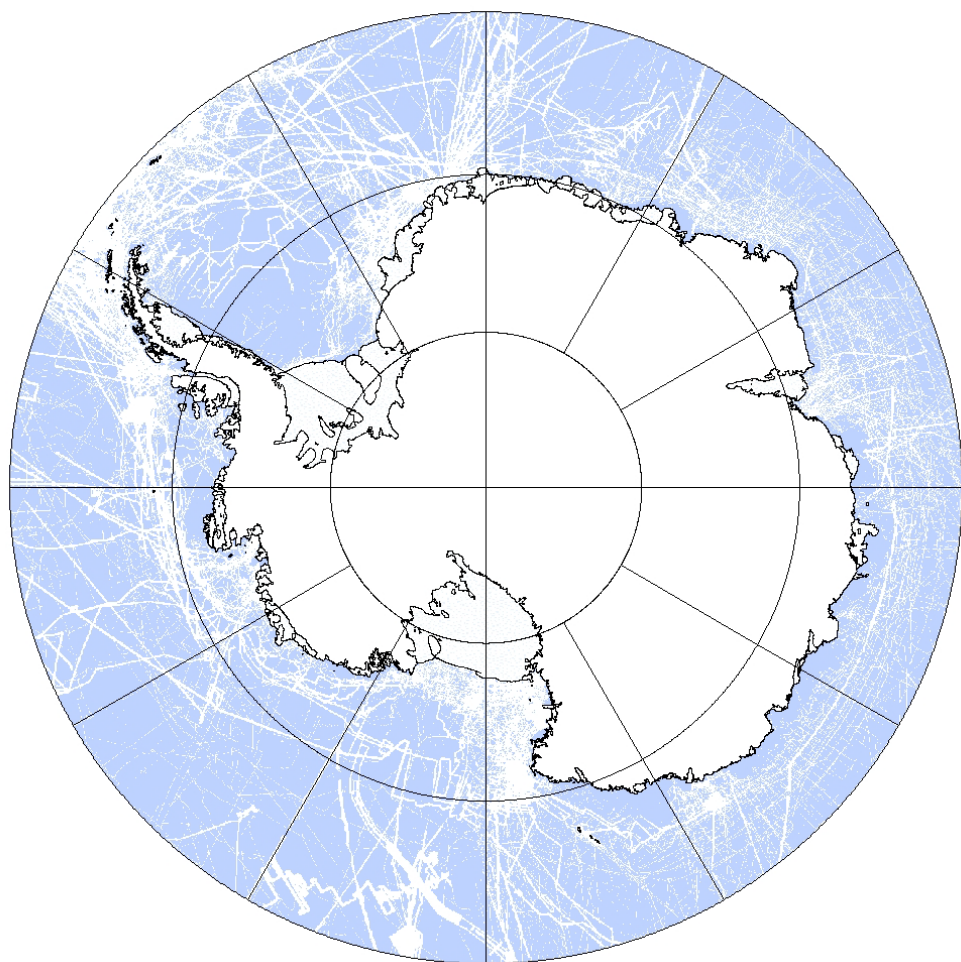
- Soundings
 - Multibeam
 - Singlebeam
- Nautical Charts
- Bathymetric Compilations
- Predicted bathymetry from satellite altimetry



Data Contributors



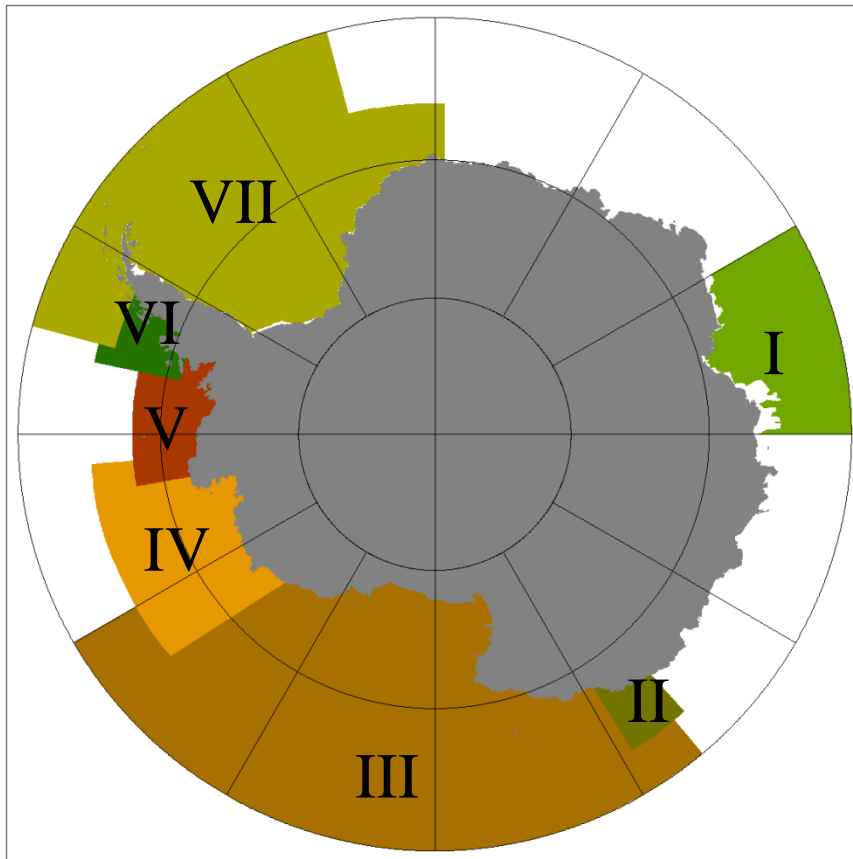
Sounding Data



Current Dataset

Datasource	Points
Singlebeam	≈ 16.5 Million
Multibeam	≈ 3.8 Billion
Nautical Charts	≈ 17.000
Total	≈ 3.9 Billion

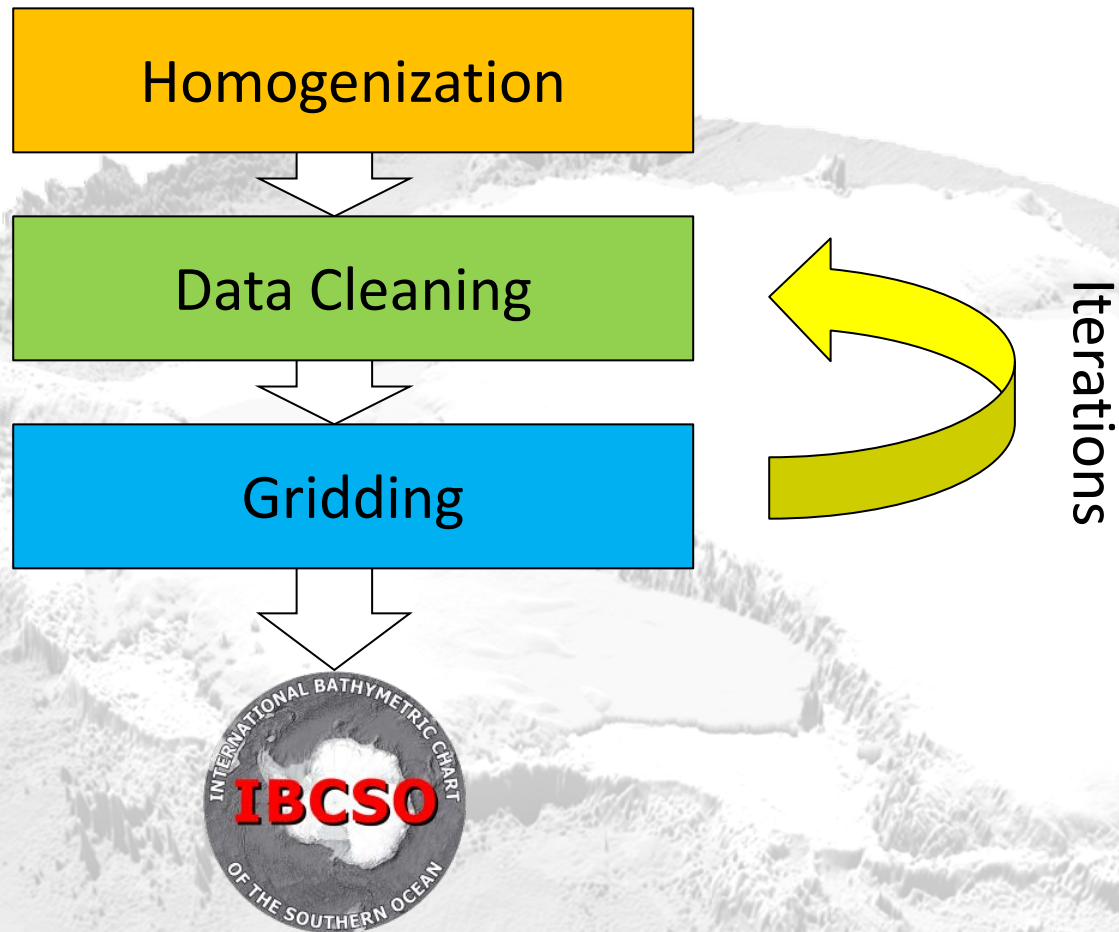
Compilations



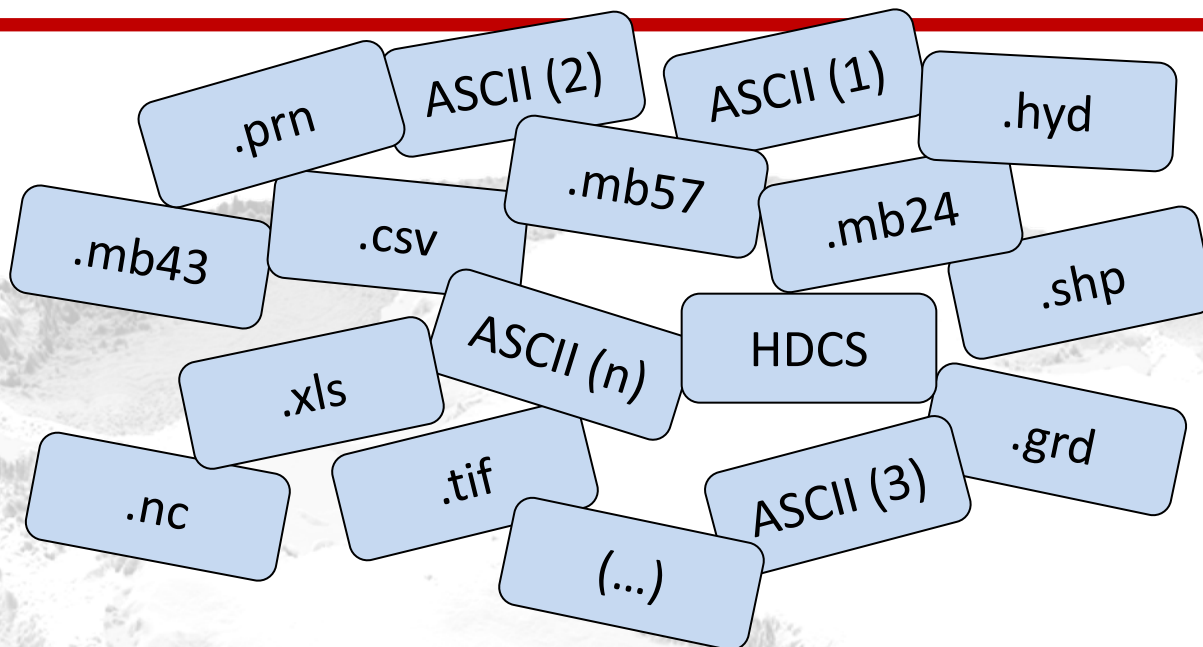
- I Kerguelen
- II Terre Adelie & George V
- III Ross Sea
- IV Amundsen Sea
- V Bellingshausen Sea
- VI Marguerite Bay
- VII Weddel Sea

(Not finally decided which will be used)

Working steps



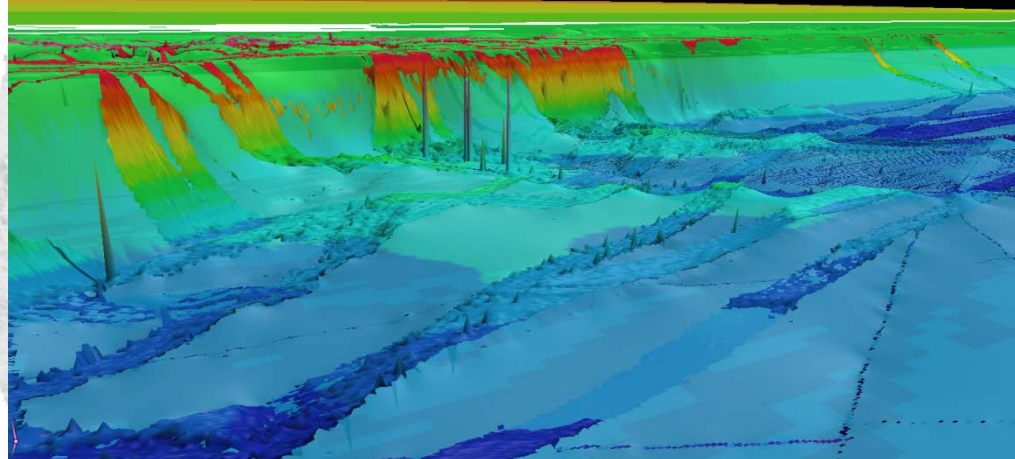
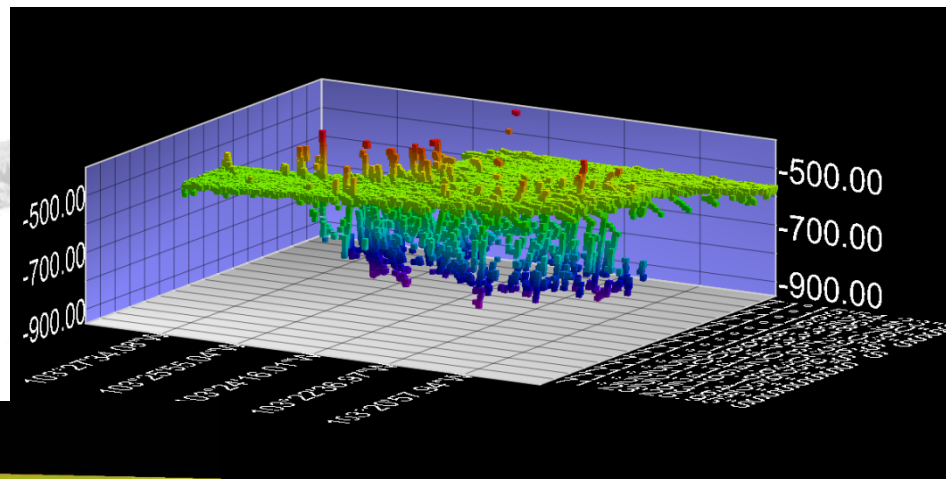
Homogenization



Basic generic data format
(IBCSO Geodatabase)

Data Cleaning

Visual Check of data
and gridded results in
QPS ,Fledermaus‘

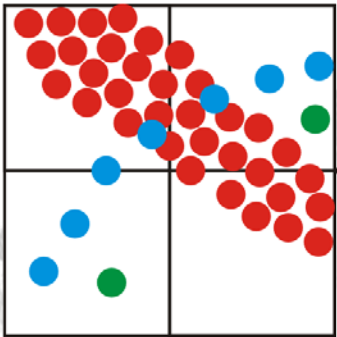


Elimination of Errors
in ,3D Editor‘

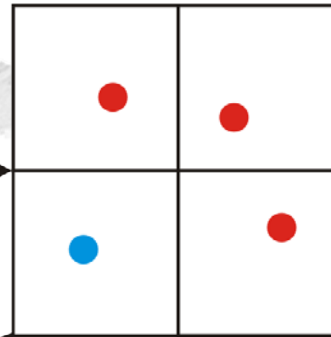
Gridding algorithm

IBCSO data base

Multibeam (red), Singlebeam (blue), Chart (green)

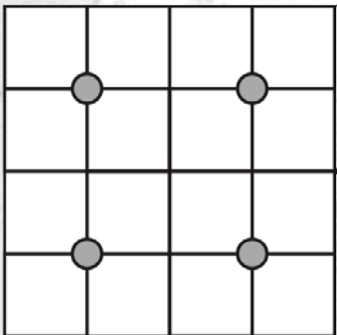


Weighted Bockmedian filter at 2000 m cellsize
GMT ,blockmedian'



Source ID grid

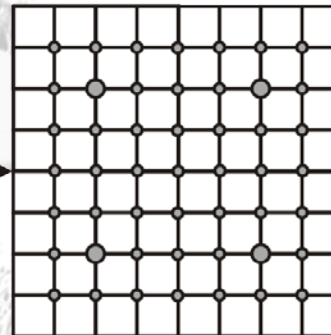
Gridded with
GMT ,surface'



Filtered (6000 m) and
Sampled (500 m)

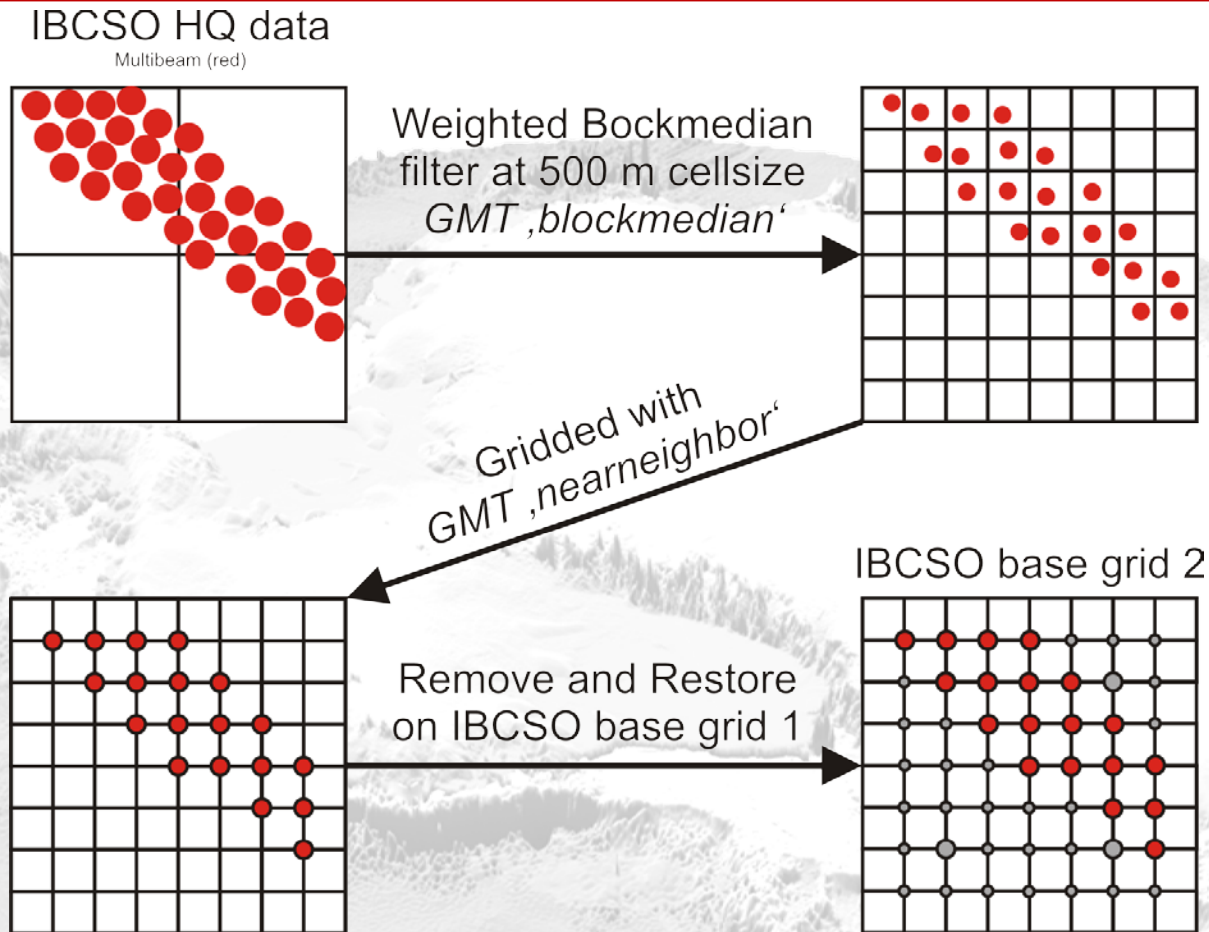
GMT ,grdfilter'
GMT ,grdsample'

IBCSO base grid 1



Based on Jakobsson et al (IBCAO version 3.0, 2012)

Gridding algorithm



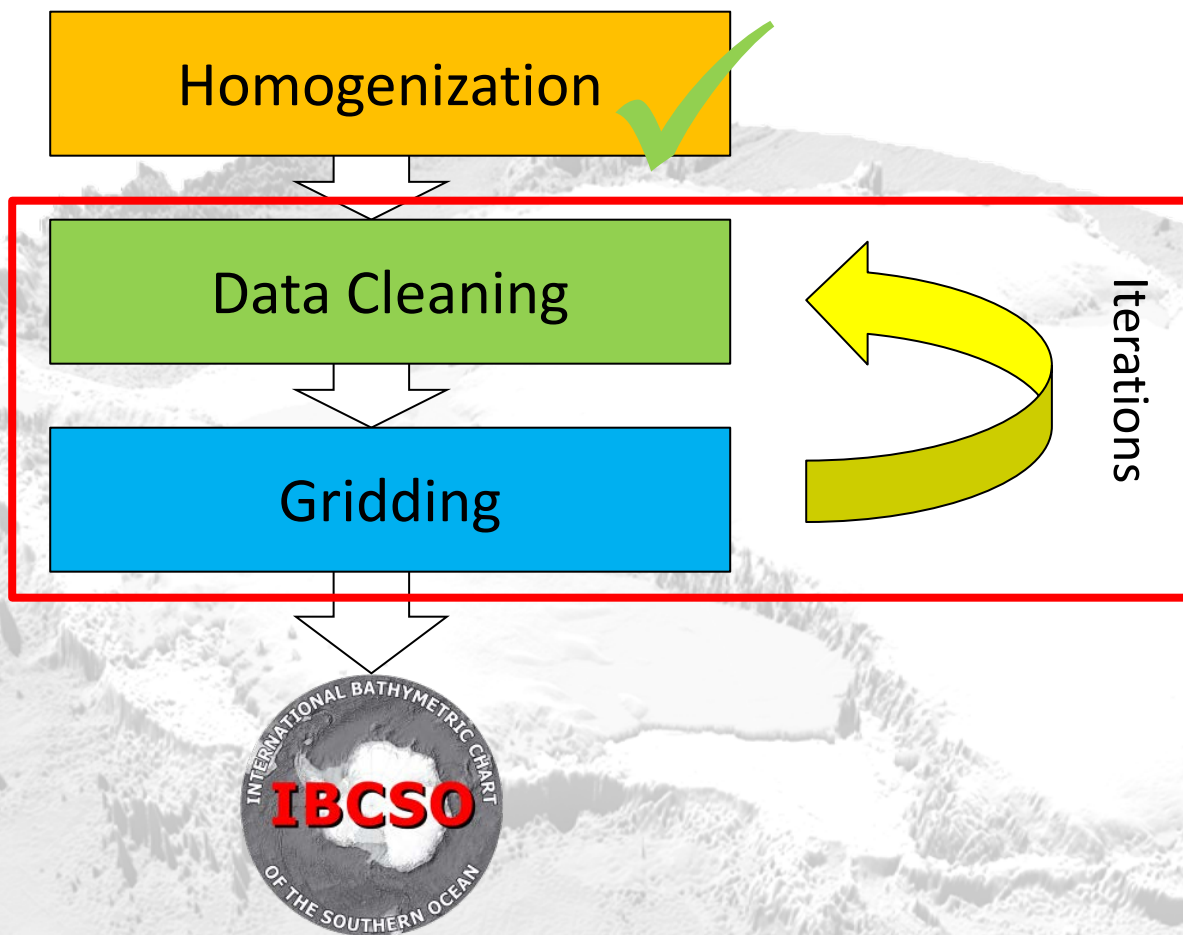
Based on Jakobsson et al (IBCAO version 3.0, 2012)

Gridding algorithm

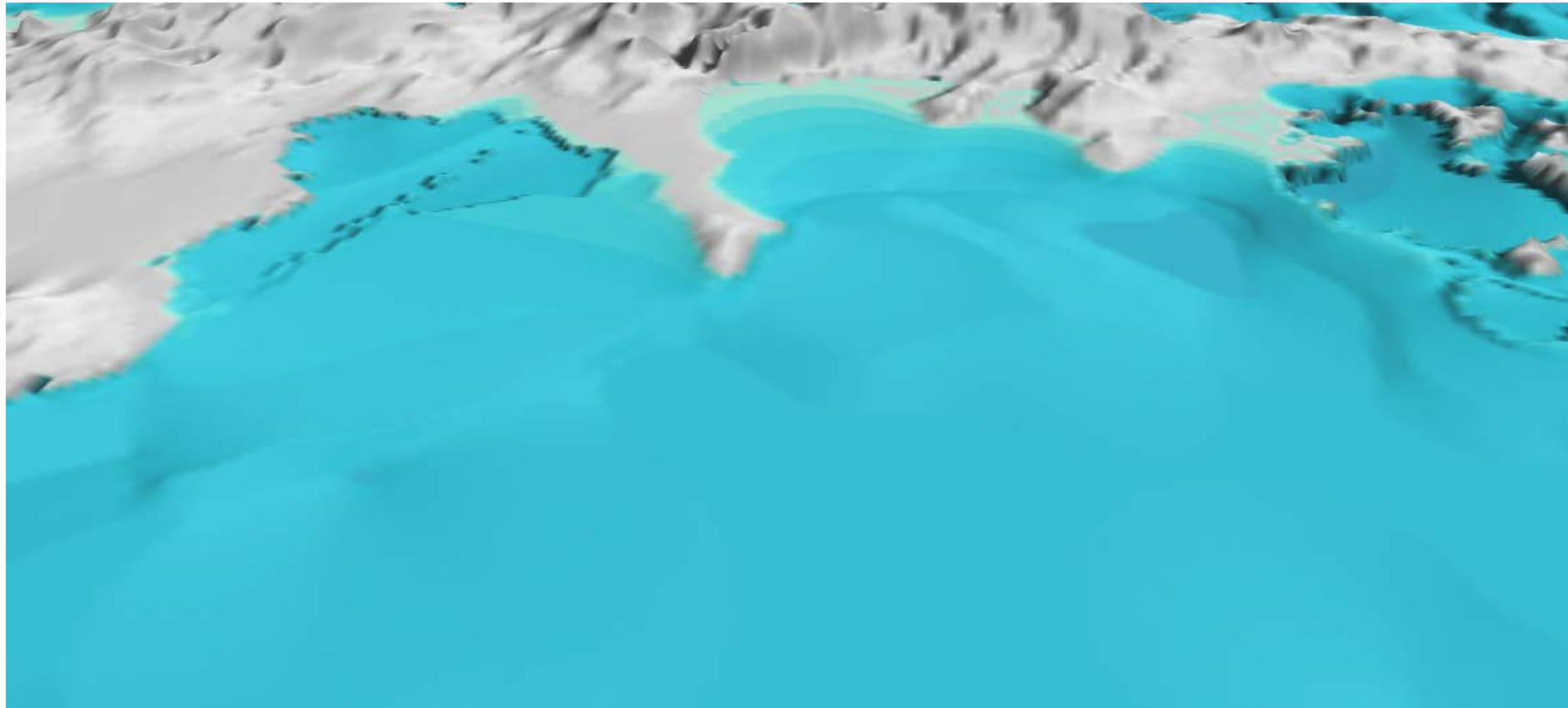
- Major gaps are filled with global bathymetry derived from satellite altimetry or bathymetric compilations
- Gapfilling data gets adjusted by echosounding measurements in beforehand

Method is in developement!

Current status

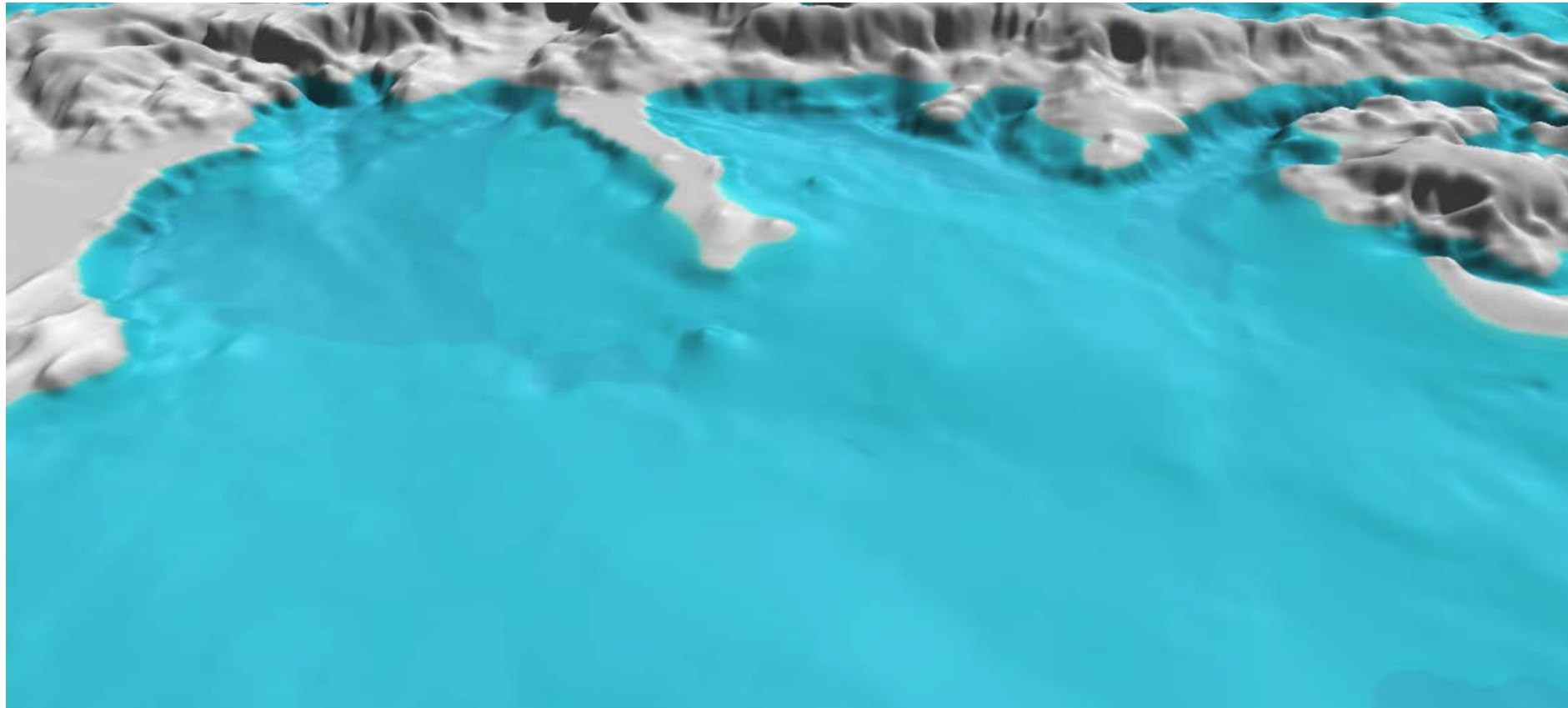


Previews (Larsen A & B)



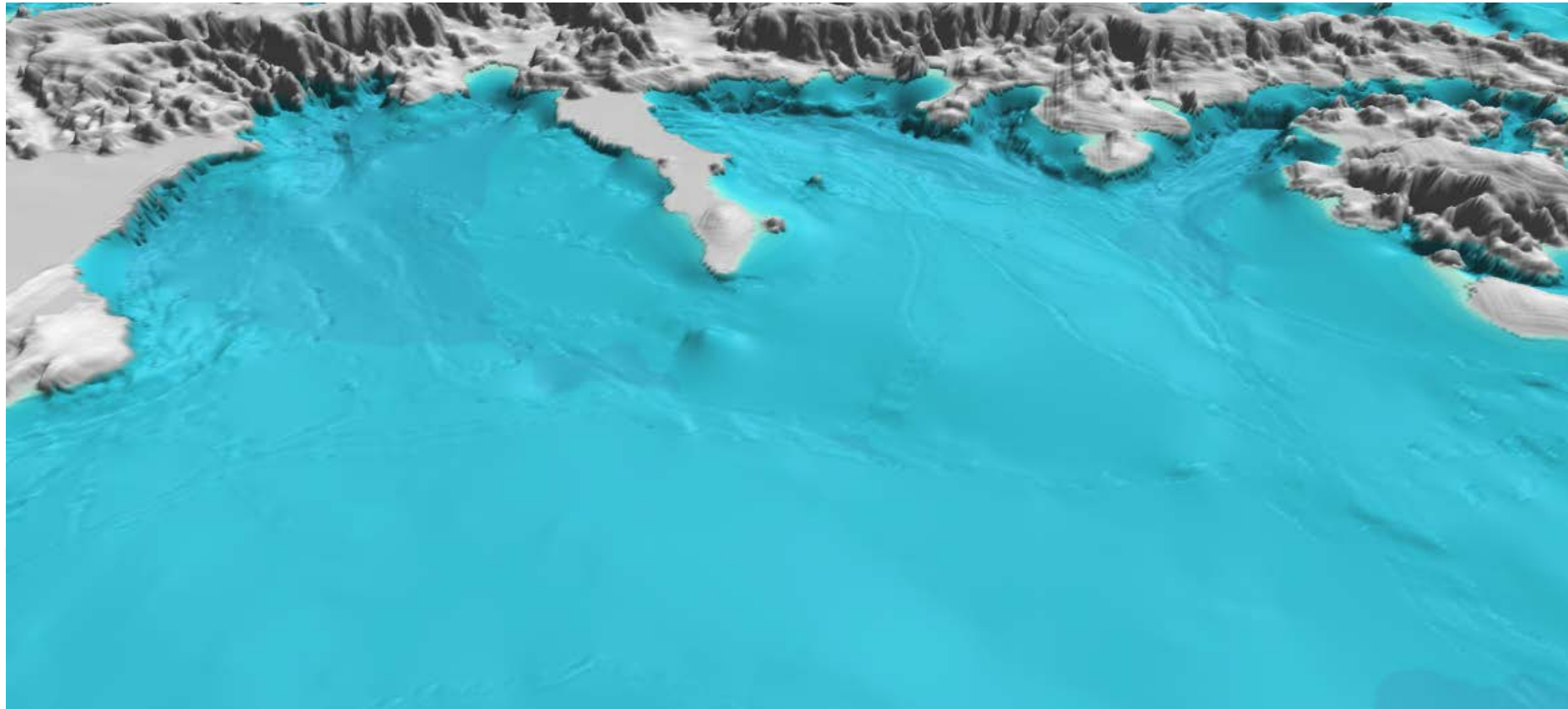
GEBCO 08

Previews (Larsen A & B)



IBCSO v1 (2000m)

Previews (Larsen A & B)



IBCSO v1 after Remove and Restore (500m)

Previews (Weddell Sea)



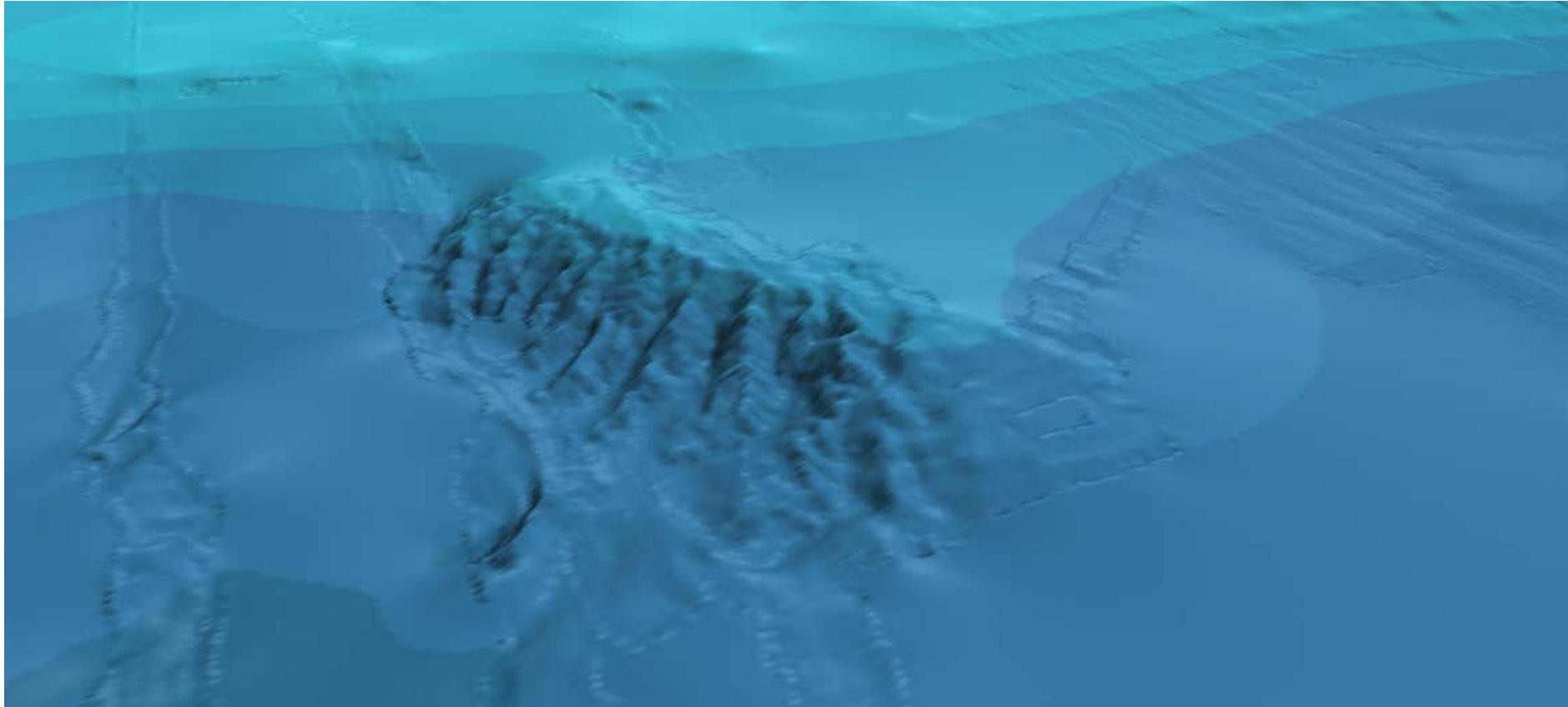
GEBCO 08

Previews (Weddell Sea)



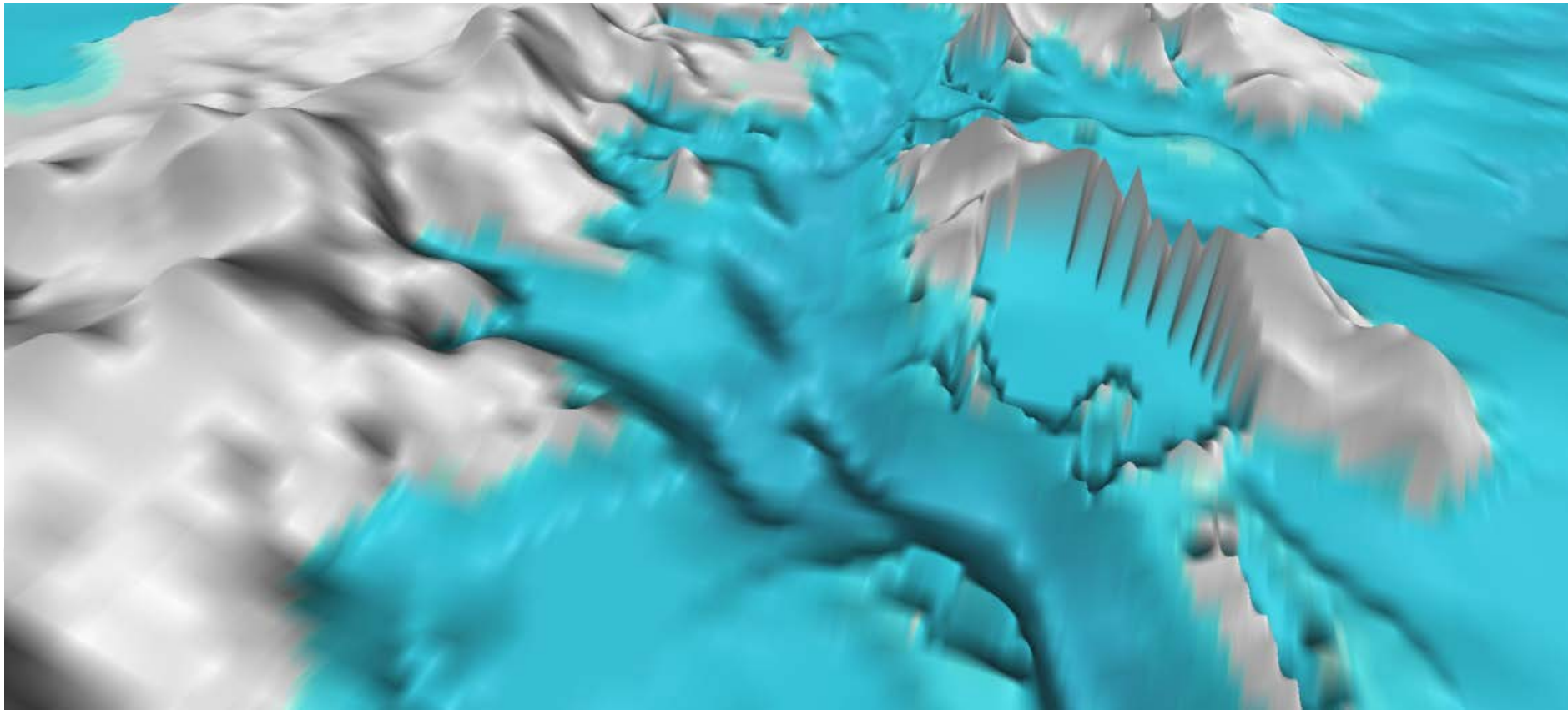
IBCSO v1 (2000m)

Previews (Weddell Sea)



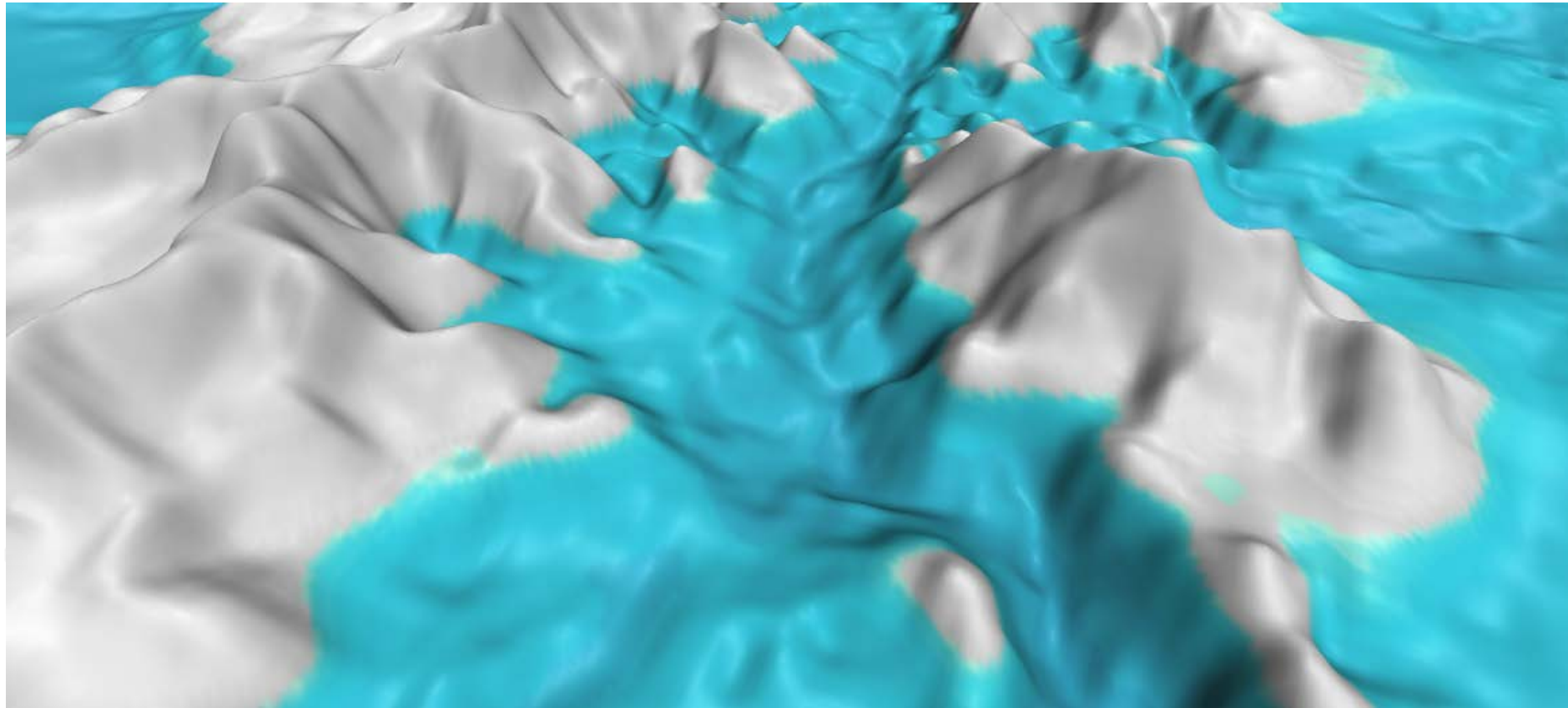
IBCSO v1 after Remove and Restore (500m)

Previews (Gerlach Strait)



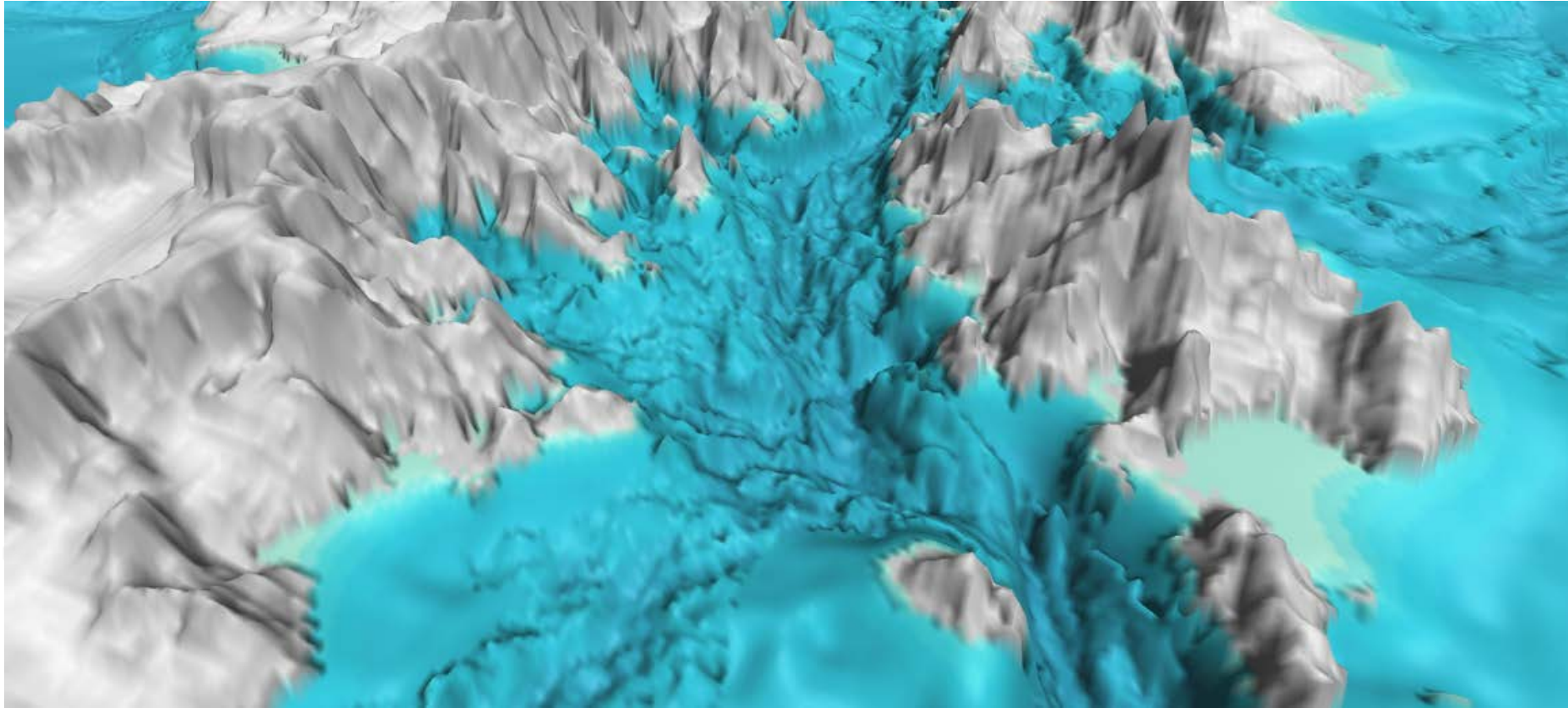
GEBCO 08

Previews (Gerlach Strait)



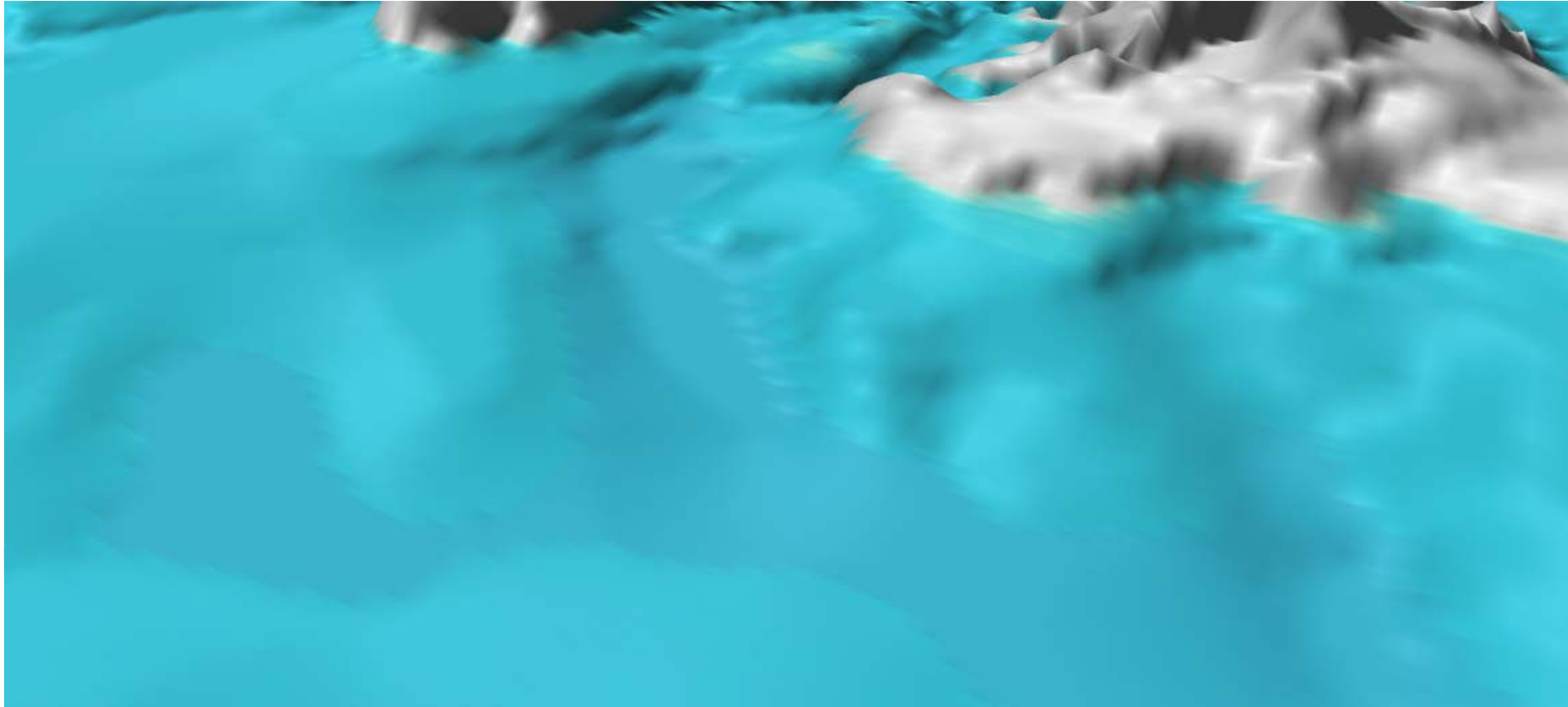
IBCSO v1 (2000m)

Previews (Gerlach Strait)



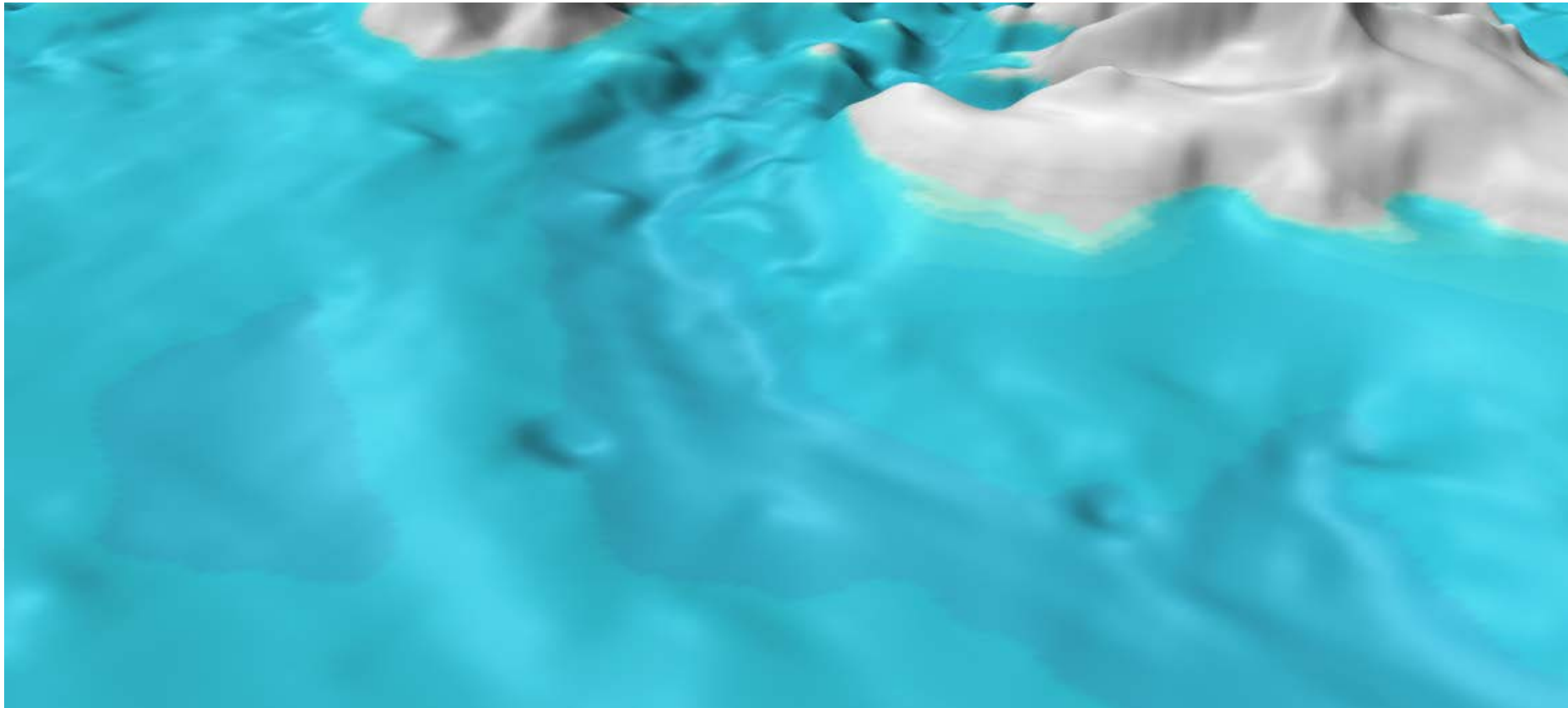
IBCSO v1 after Remove and Restore (500m)

Previews (Anvers Island)



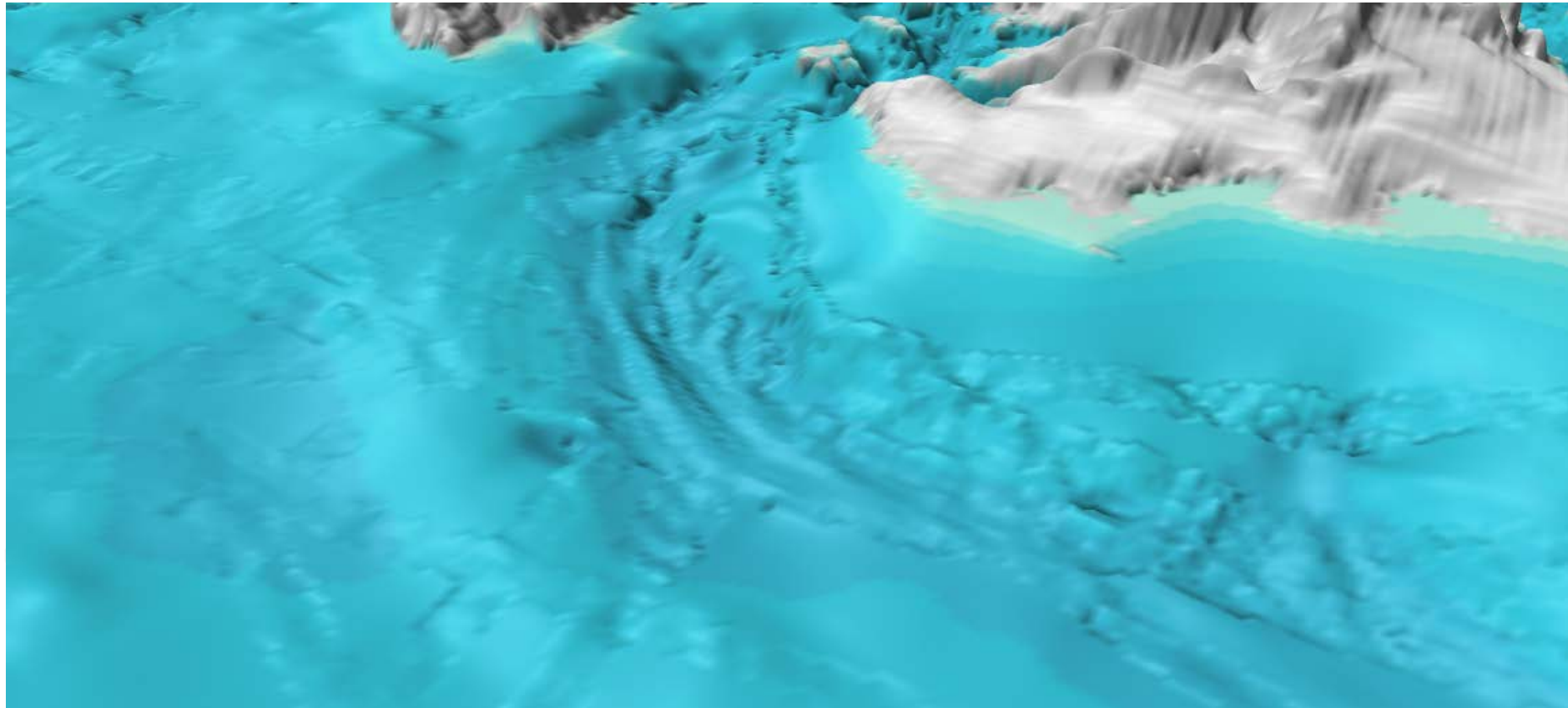
GEBCO 08

Previews (Anvers Island)



IBCSO v1 (2000m)

Previews (Anvers Island)



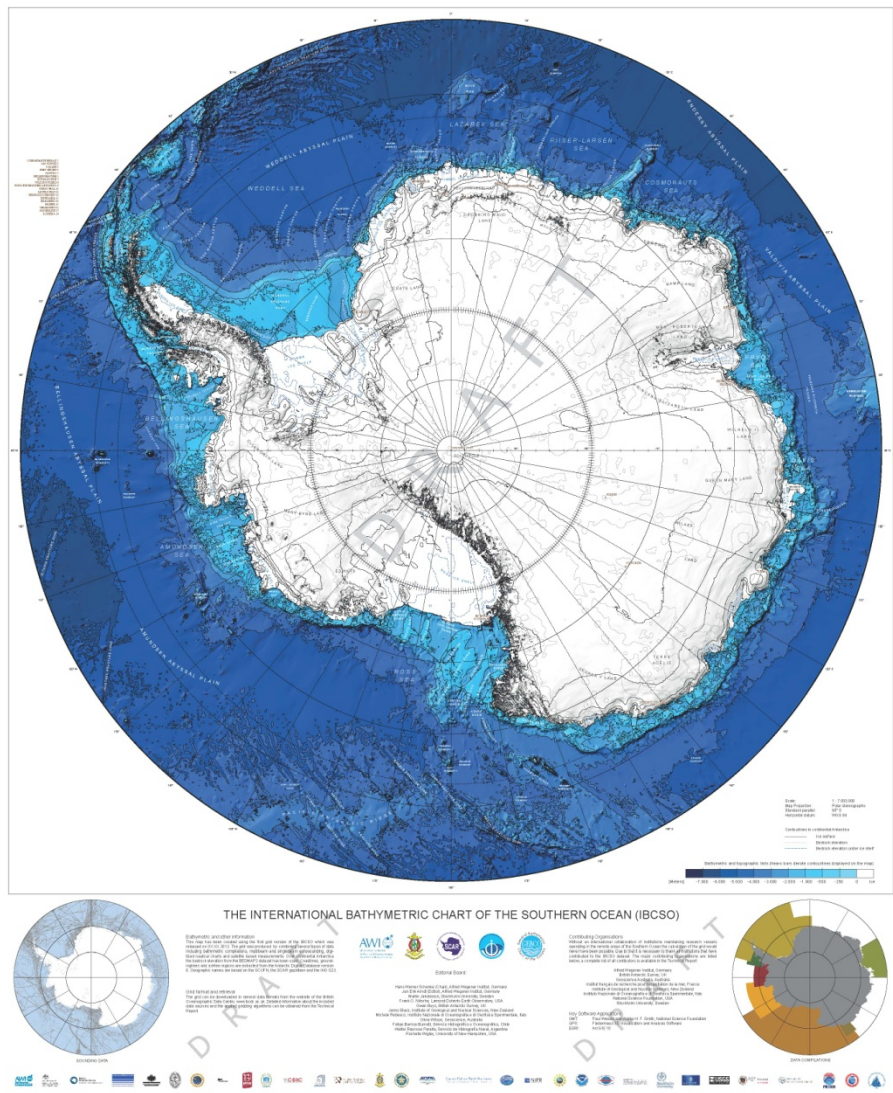
IBCSO v1 after Remove and Restore (500m)



IBCSO specifications (map)

- Area: Antarctic treaty area - south of 60°S
- Projection: Polar Stereographic
with true scale at 65 °S
- Scale: 1 : 7.000.000
- Size: 1000 x 1200 mm
- Release: Fall 2012
- Format: Printing and PDF
- Data portal: www.ibcso.org

Map Draft





Thanks for your attention!

For further information visit

www.ibcso.org

or contact me via

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