

The COST-G GRACE/GRACE-FO RL02 combination

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and the whole COST-G team

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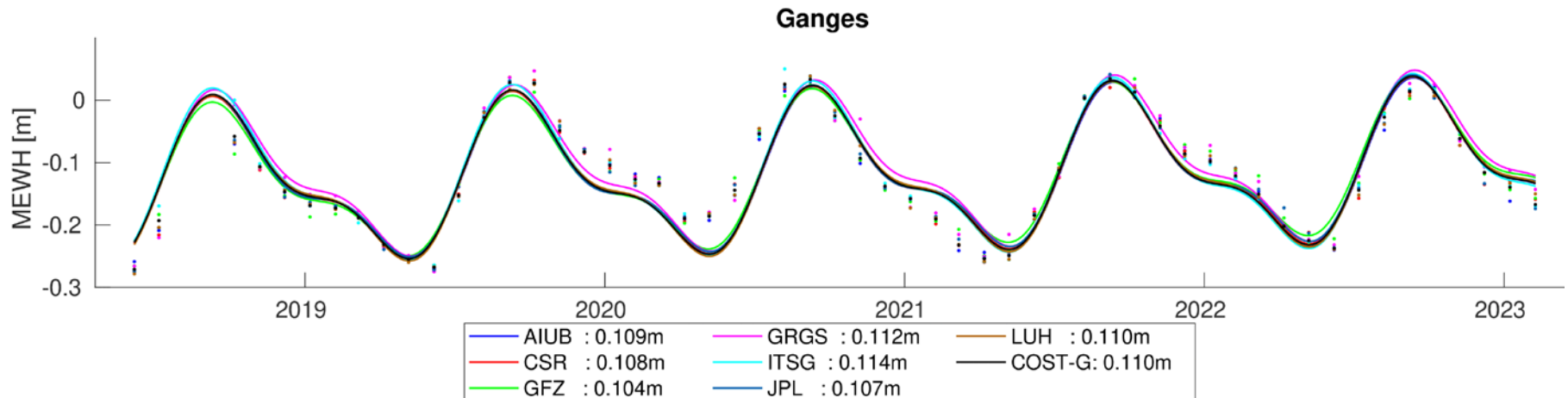
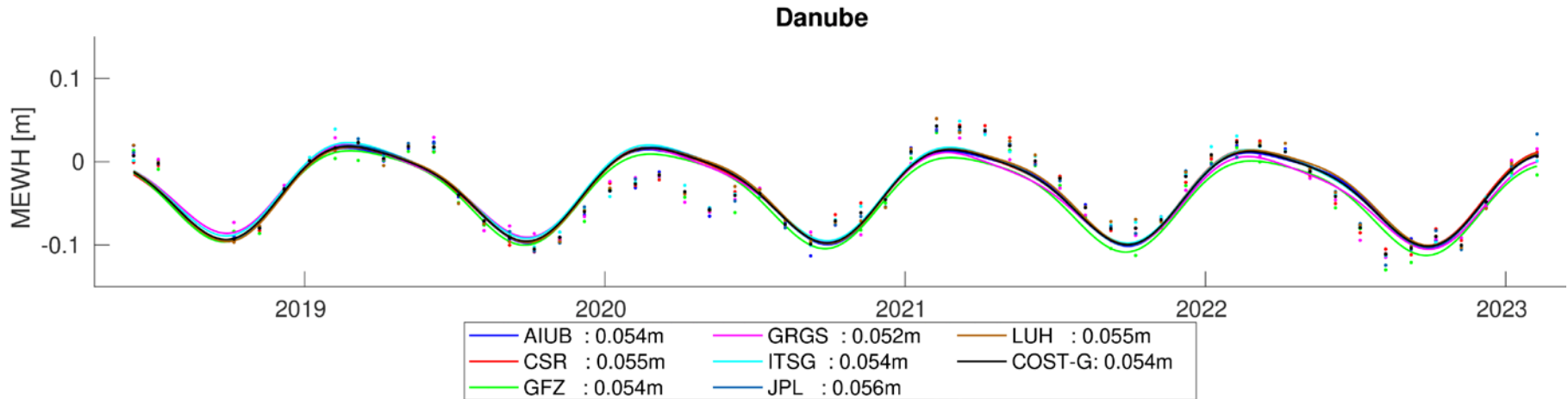
³Centre National d'Etudes Spatiales, France

IUGG, Berlin, 11 – 20 July 2023

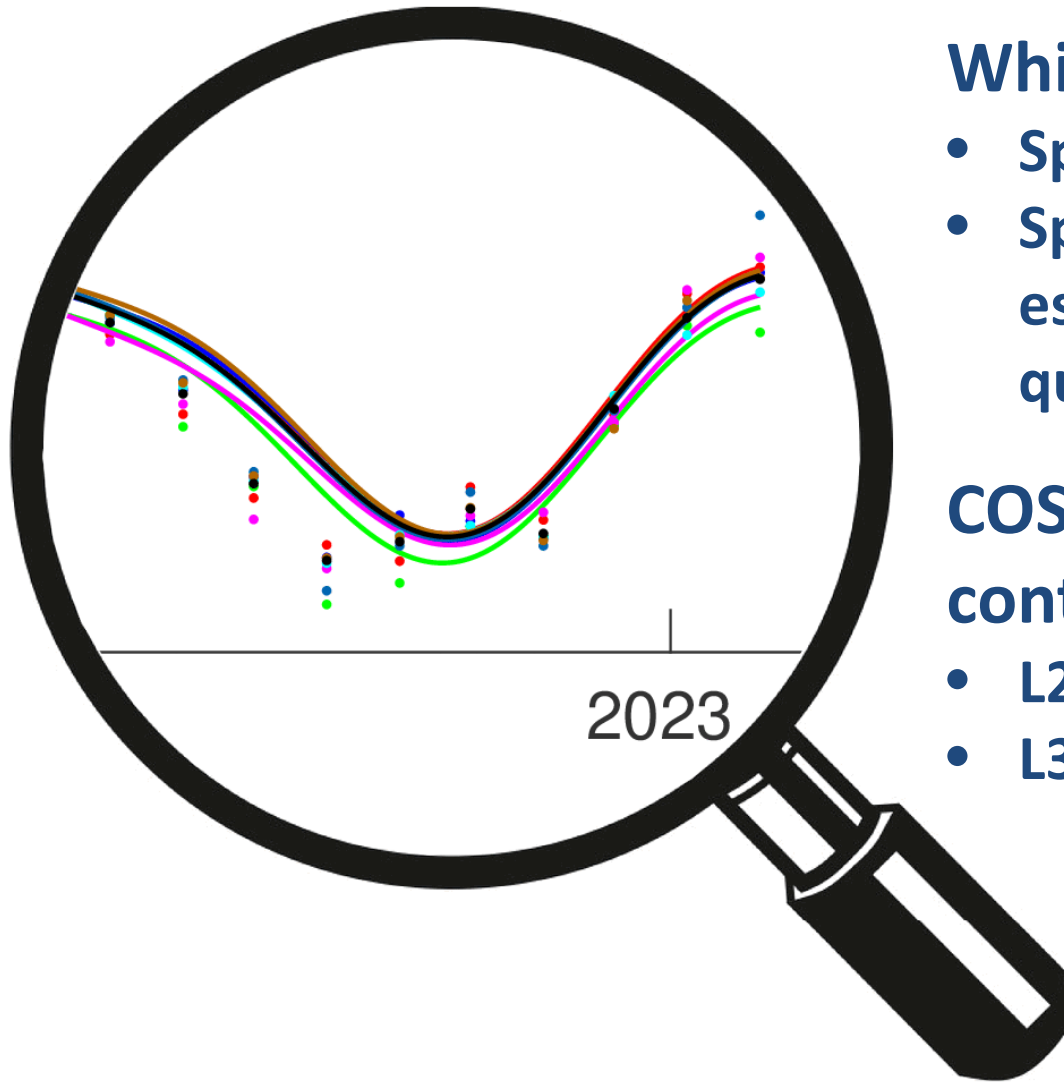
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- COST-G GRACE/GRACE-FO RL01/RL02p combination
- Noise assessment
- Polar ice mass trends
- Data dissemination

The COST-G idea



The COST-G idea



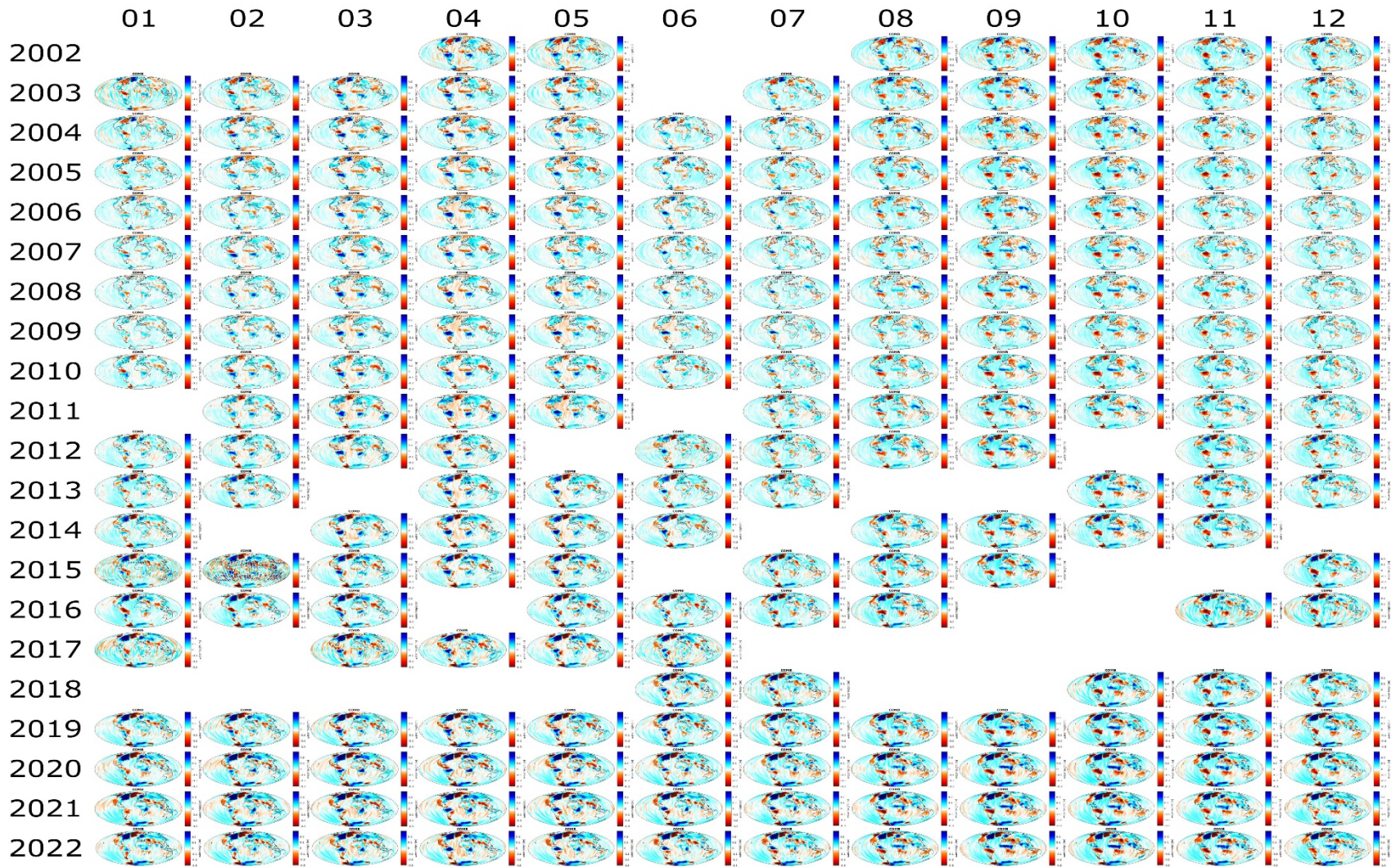
Which time-series is correct?

- Spread in climatology
- Spread in monthly mass estimates, depending on data quality

COST-G provides quality controlled, weighted means:

- L2-spherical harmonics
- L3-global grids

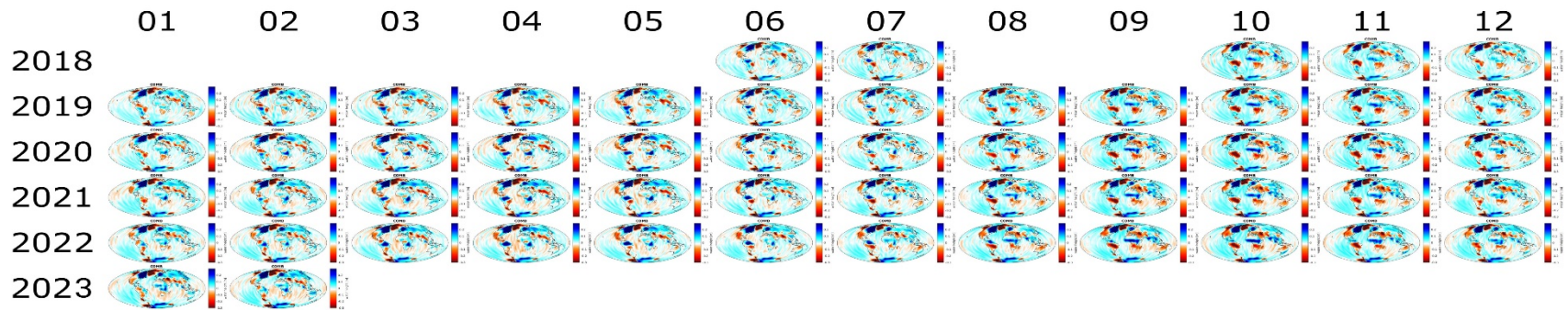
COST-G GRACE/GRACE-FO RL01



COST-G GRACE-FO RL02

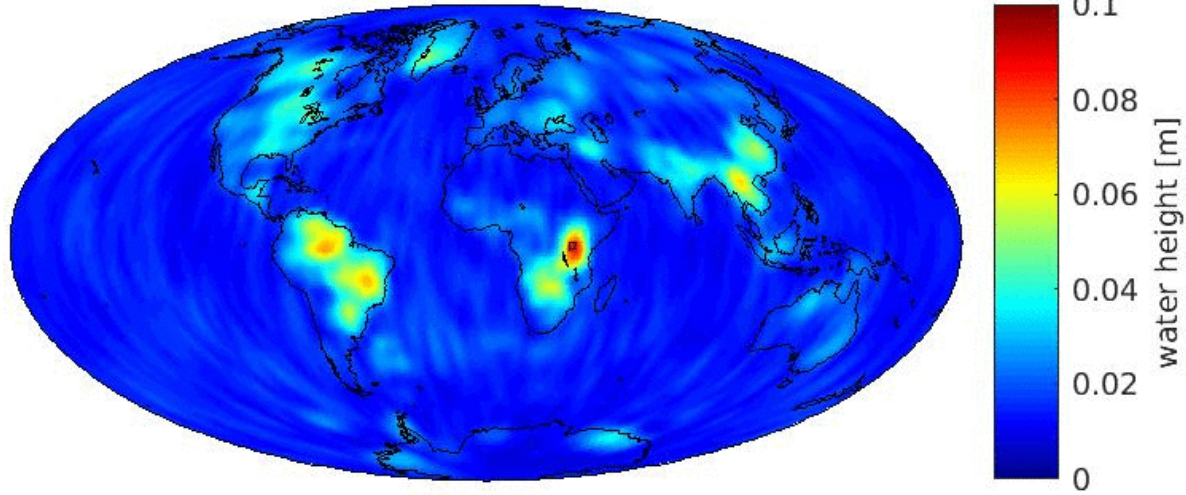
COST-G GRACE RL02 will include time-series from Chinese Analysis Centers.

To be completed in autumn 2023.

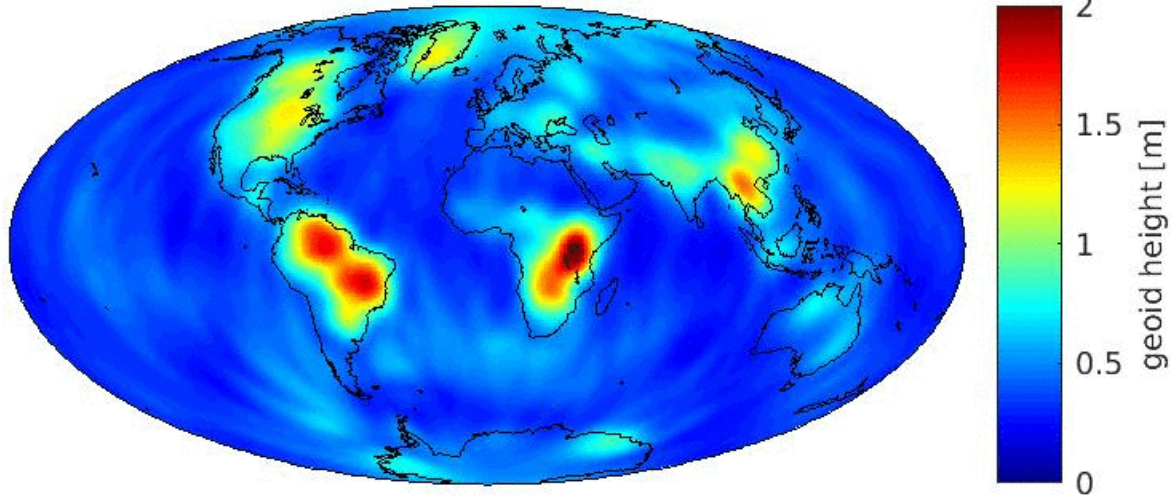


Non-seasonal variability: COST-G GRACE-FO RL01

Residual variability of COMB

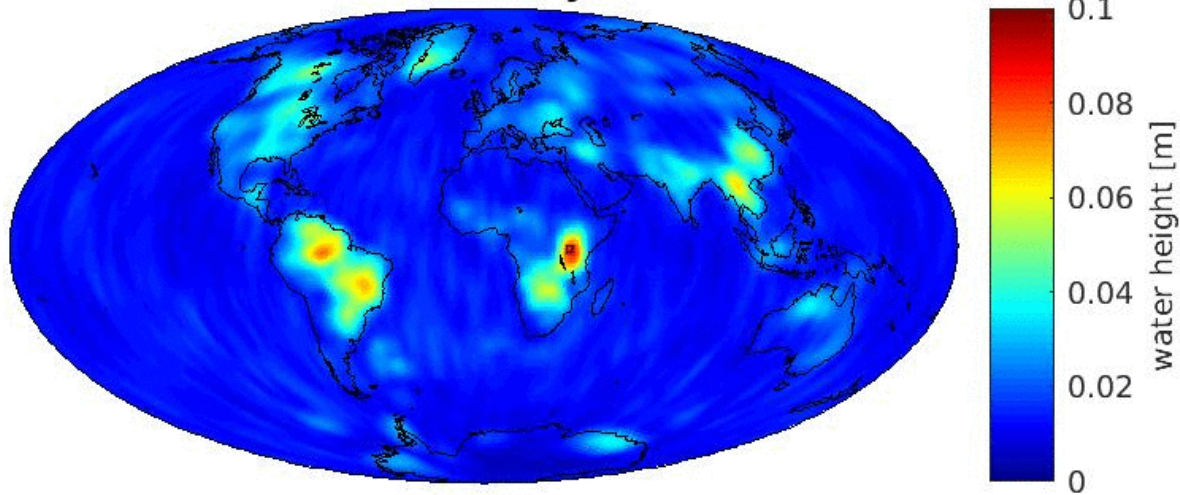


Residual variability of COMB

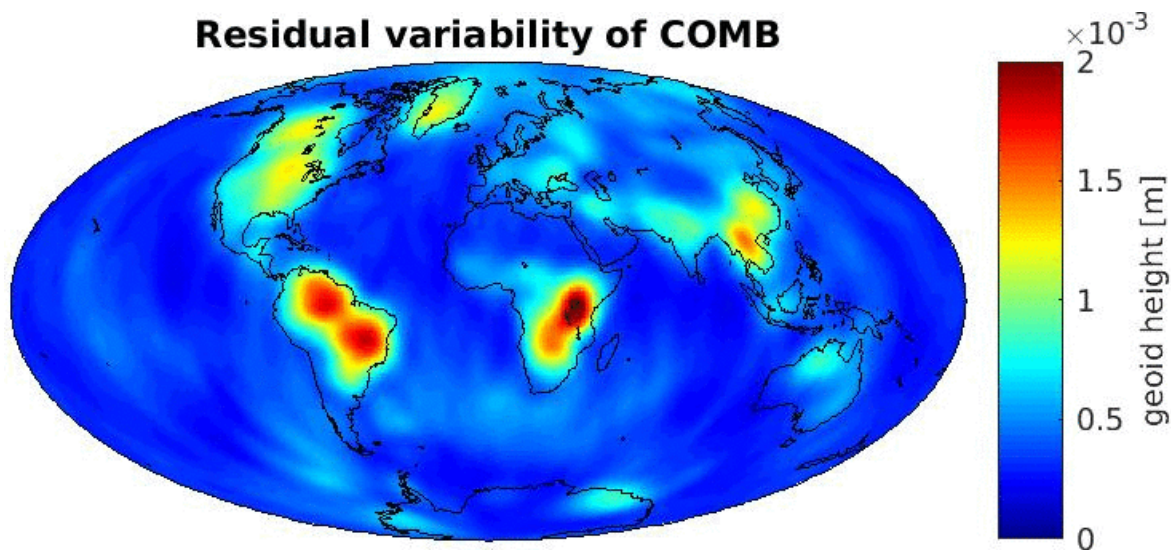


Non-seasonal variability: COST-G GRACE-FO RL02

Residual variability of COMB



Residual variability of COMB



GRACE-FO RL02 noise reduction: Oceans

GRACE-FO — Gravity solutions — RMS over basins

Global oceans



CNES/GRGS

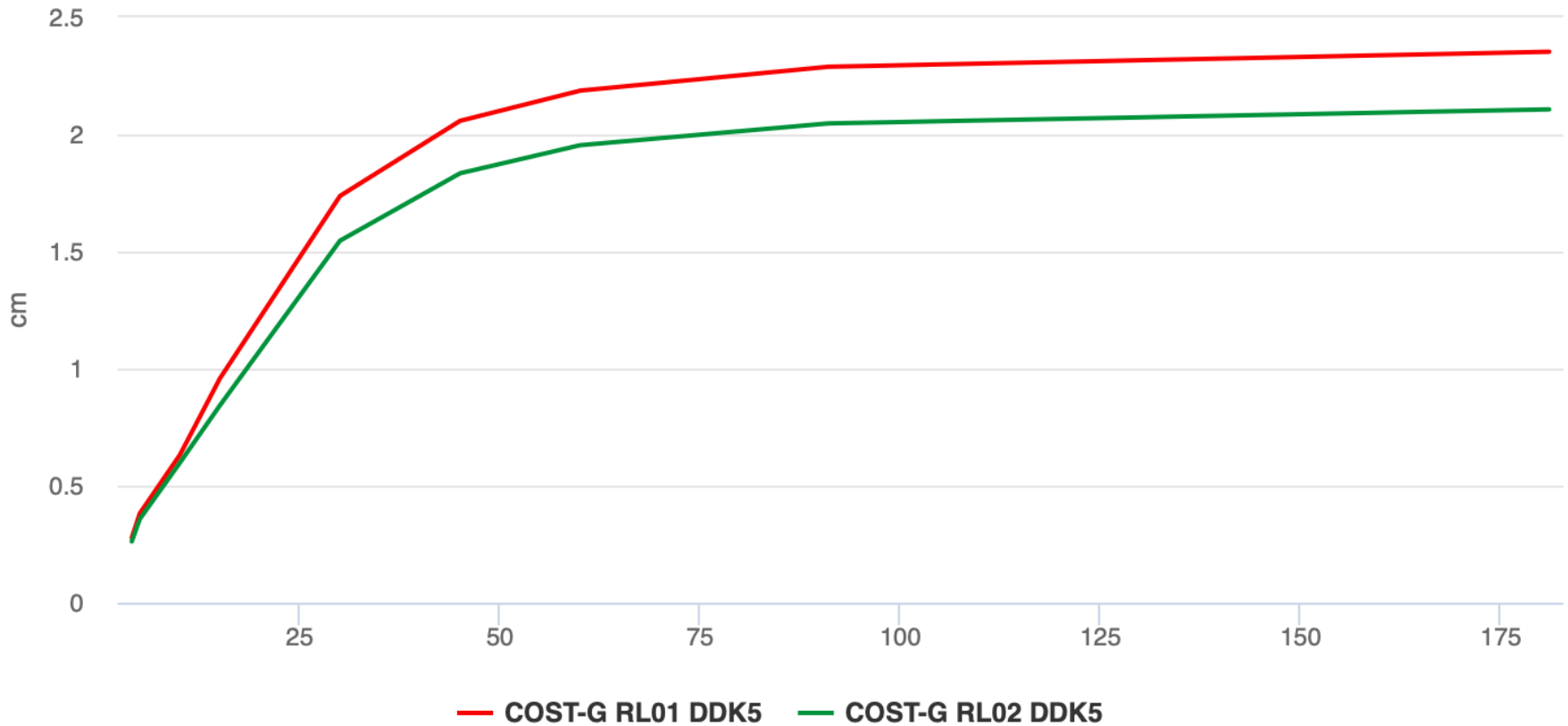


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GRACE-FO RL02 noise reduction: Oceans

GRACE-FO — Gravity solutions — Noise over deserts by resolution (SH degree)

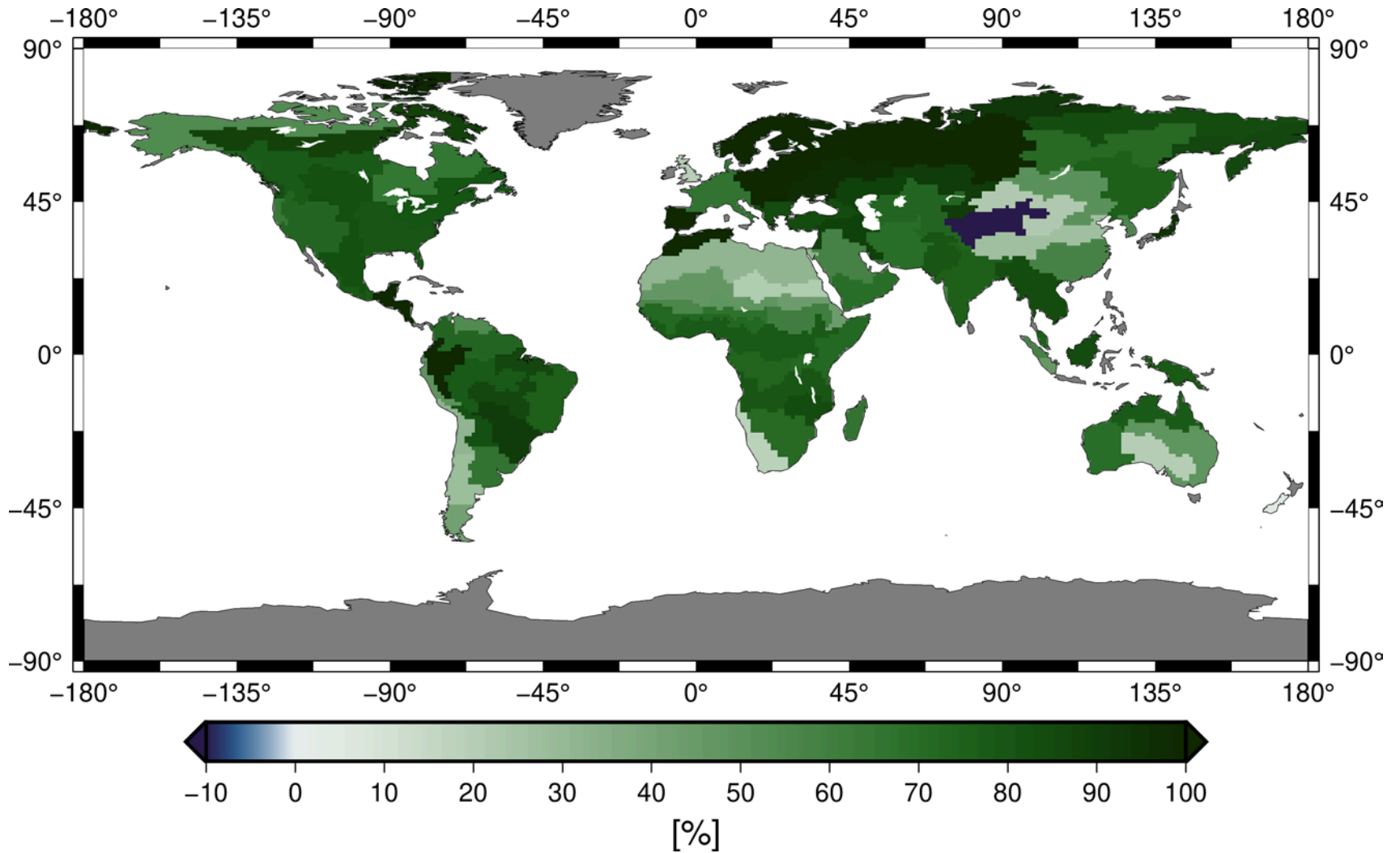
Equatorial Pacific



CNES/GRGS



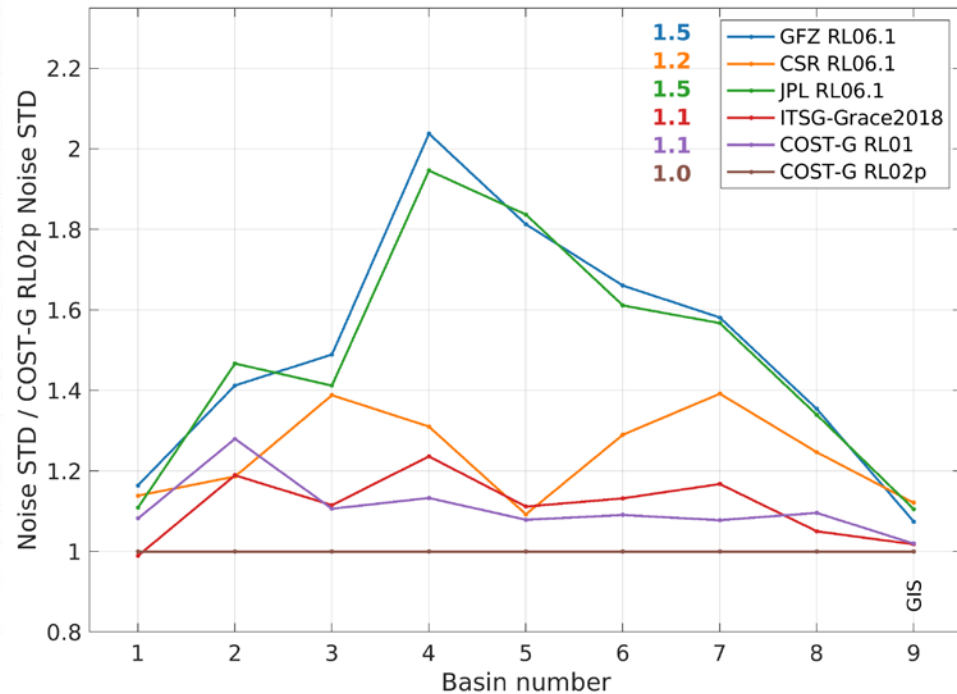
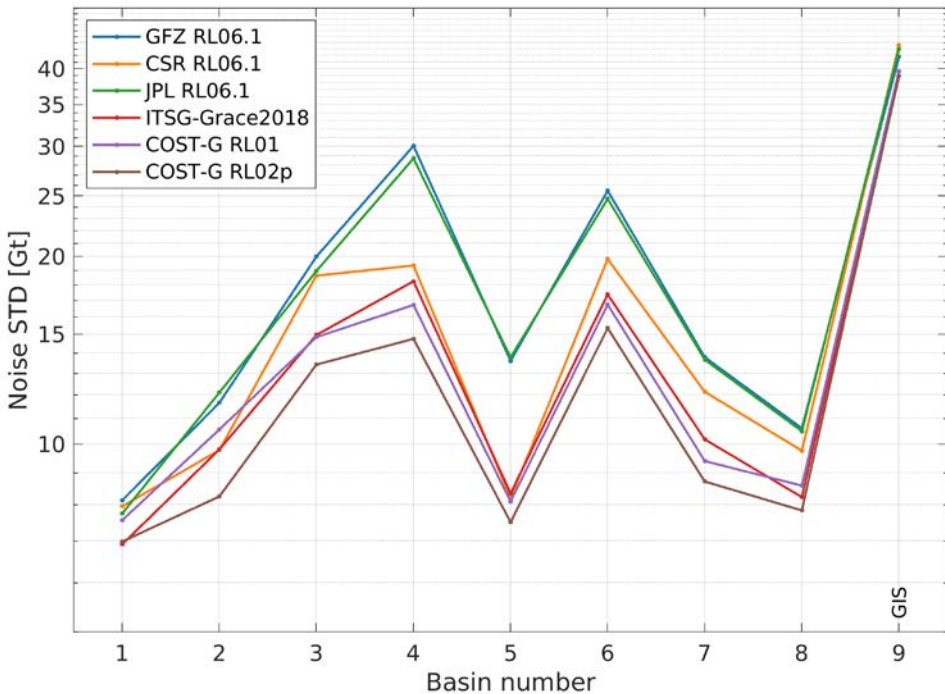
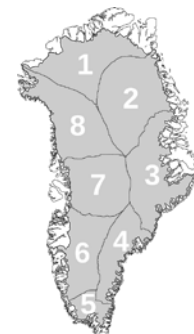
GRACE-FO RL02 noise reduction in river basin [%]



GRACE RL02p: noise reduction in Greenland

Basin-averaged GIS mass changes

- Noise measure for each basin time series (left) and ratio w.r.t. noise measure of the COST-G time series (numbers indicate the median of all basin ratios)

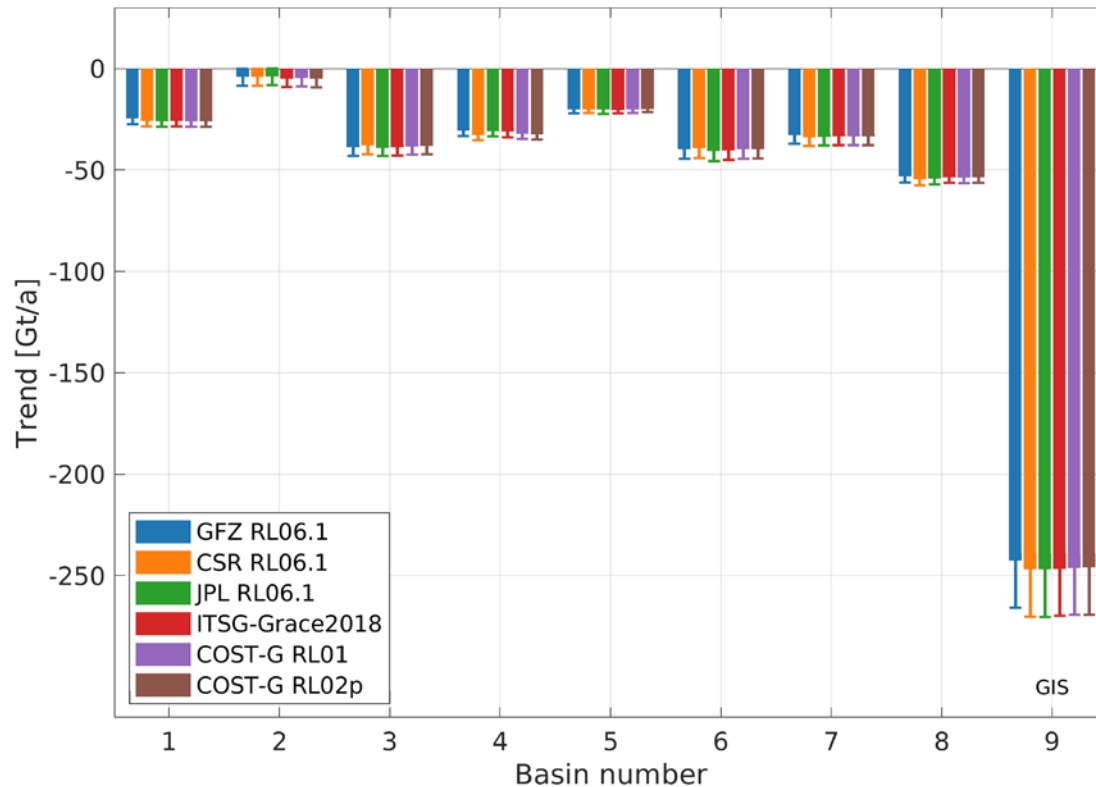


GRACE RL02p: ice mass loss in Greenland

GIS mass trend estimates



GRACE/GRACE-FO



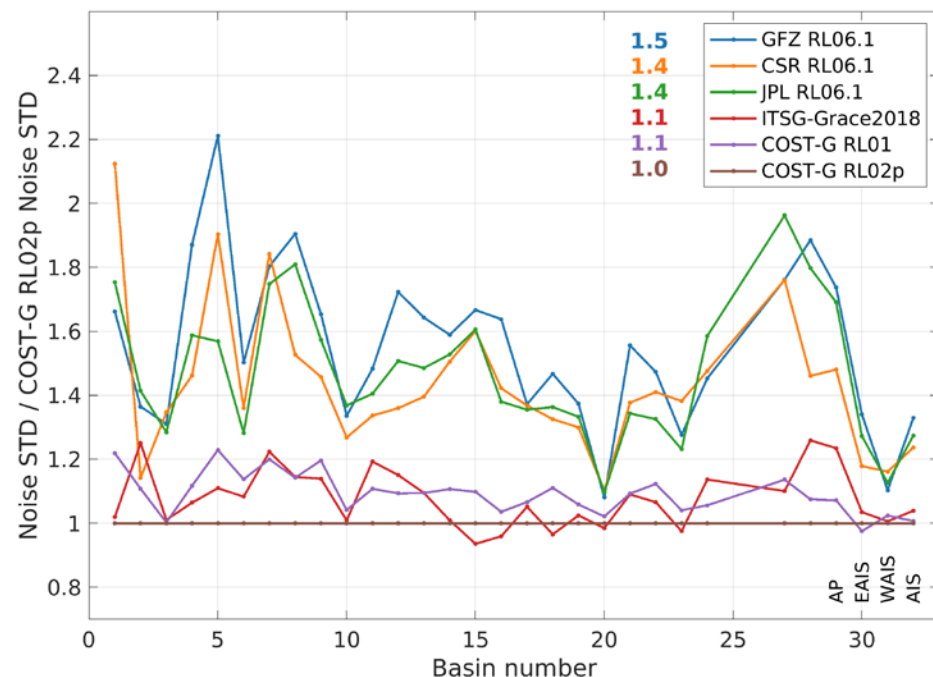
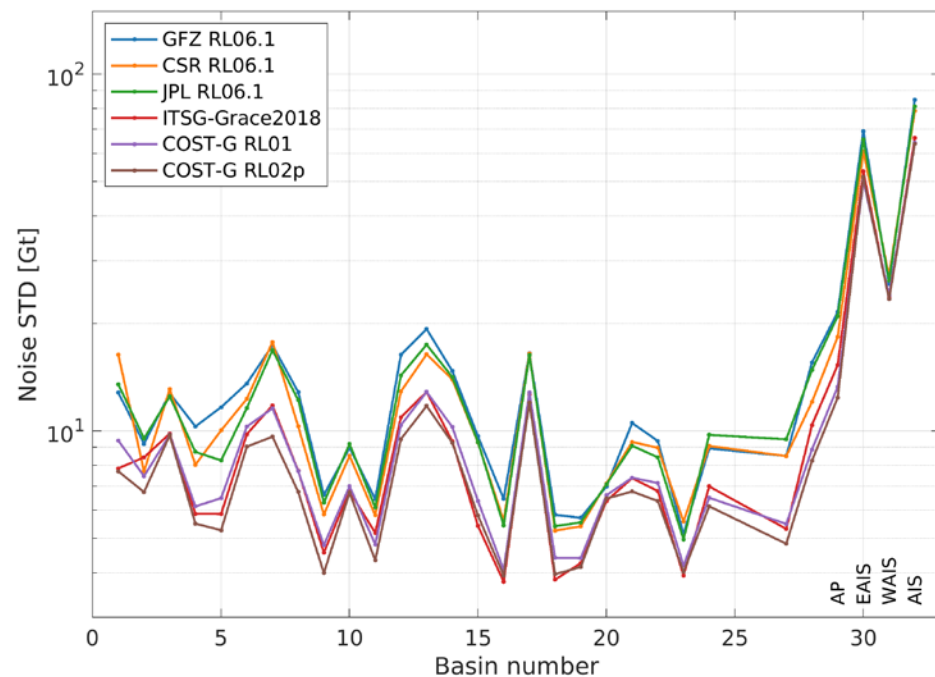
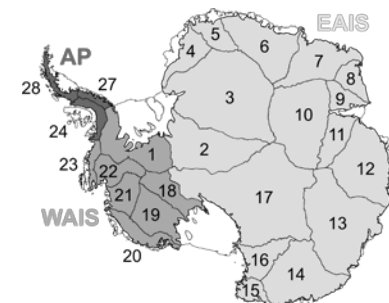
GRACE



GRACE RL02p: noise reduction in Antarctica

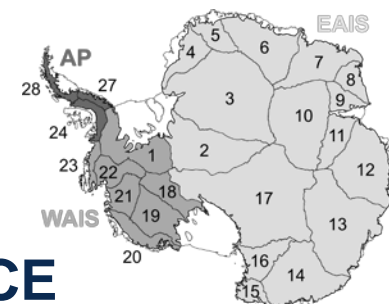
Basin-averaged AIS mass changes

- Noise measure for each basin time series (left) and ratio w.r.t. noise measure of the COST-G time series (numbers indicate the median of all basin ratios)

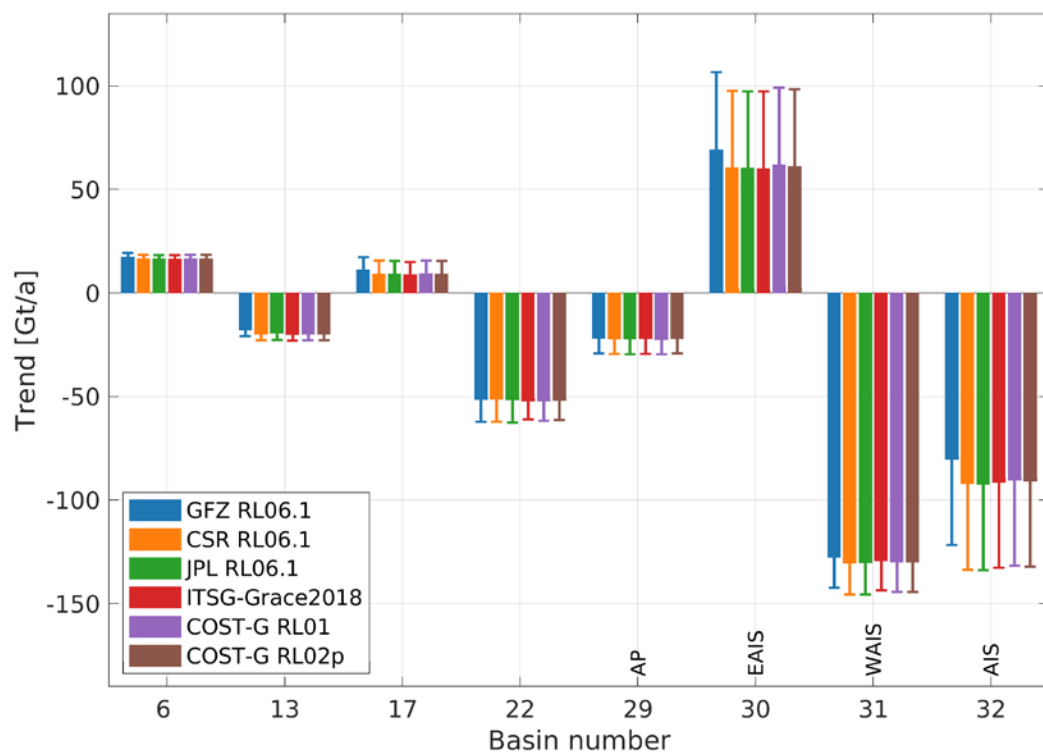


GRACE RL02p: ice mass trends in Antarctica

AIS mass trend estimates



GRACE/GRACE-FO



GRACE



Data Dissemination



The screenshot shows the GravIS website interface. At the top, there's a navigation bar with categories: TERRESTRIAL WATER STORAGE, GROUNDWATER STORAGE, OCEAN BOTTOM PRESSURE, ANTIMETRIC ICE MASS CHANGE, and GREENLAND ICE MASS CHANGE. Below the navigation bar, there's a main content area with a large map of Europe showing a color-coded gravity anomaly. Text on the page describes the GravIS service and its data products.

<http://gravis.gfz-potsdam.de/>
<http://icgem.gfz-potsdam.de/>



SCAN ME

Easy accessibility

The COST-G plotter is an easy and convenient way to look at and evaluate the data products of the analysis center and the combined solutions generated at AIUB.

GravIS, the Gravity Information Service of the German Research Centre for Geosciences (GFZ), enables the usage of satellite gravimetry data for a broader community. **User-friendly and ready-to-use ('Level -3') products are generated and visualized based on the most recent GRACE and GRACE-FO data release from GFZ and COST-G generated at AIUB are offered.** The products presented at GravIS are available for download at GFZ's Information System and Data Center (ISDC).

Partners

- Helmholtz Centre Potsdam, GFZ German Research Centre for Geosciences, Germany (GFZ)
- Centre National d'Études Spatiales, France (CNES)
- University of Bern, Switzerland (AIUB)
- Graz University of Technology, Austria (Graz)
- Leibniz Universität Hannover, Germany (LUH)
- Alfred-Wegener-Institut, Germany (AWI)
- Technical University Dresden, Germany (TUD)
- Stellar Space Studies



GGOS
Global Geodetic
Observing System

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COST-G

Combination Service for Time-variable Gravity Fields



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