# GRACE satellite gravimetry to assess global hydrology and ice melt

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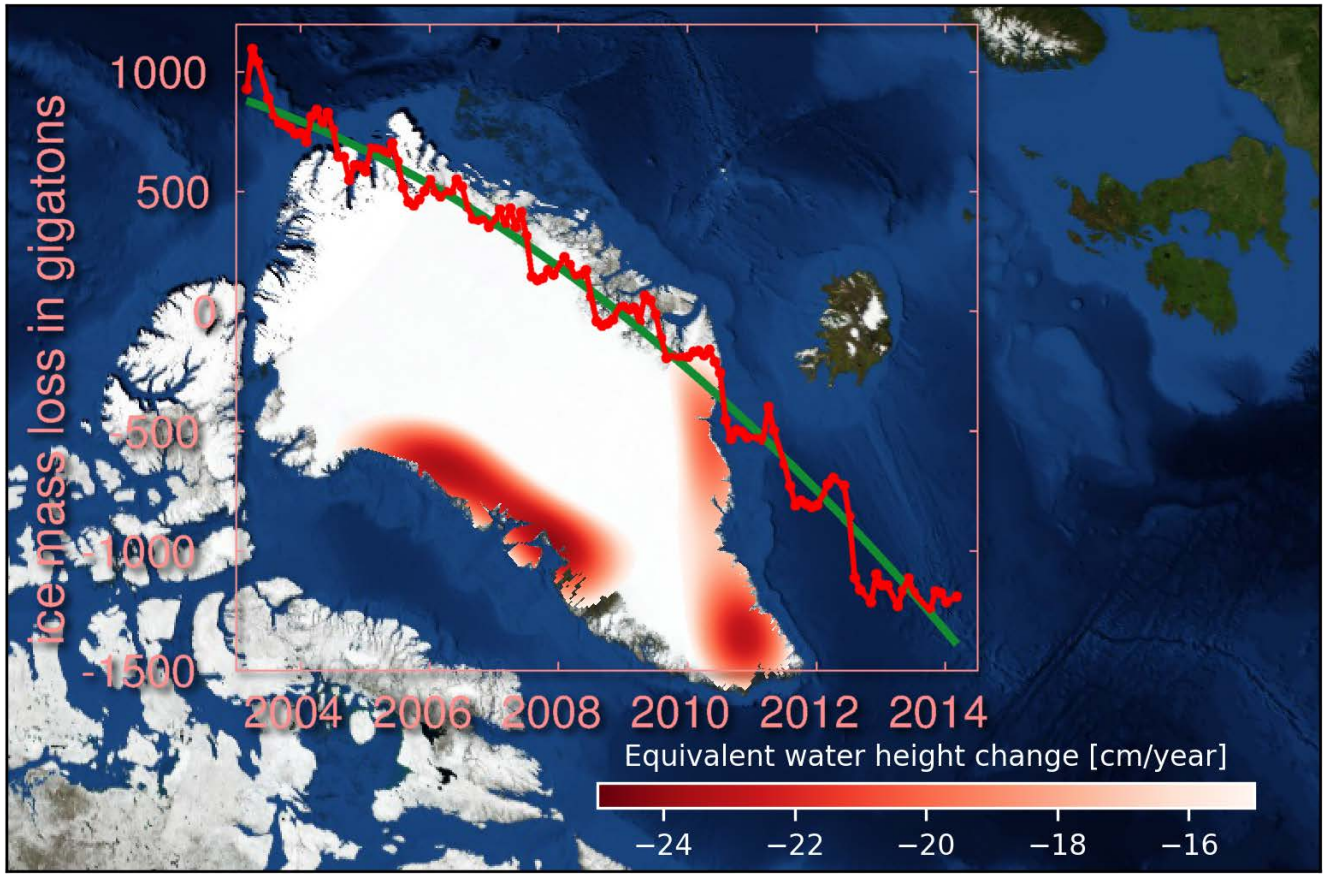
**EGSIEM project partners:**

# Satellite Gravimetry




**GRACE satellite gravimetry allows to monitor mass transport in the system Earth at spatial scales down to a few 100 km.**

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- Gravity field combination service
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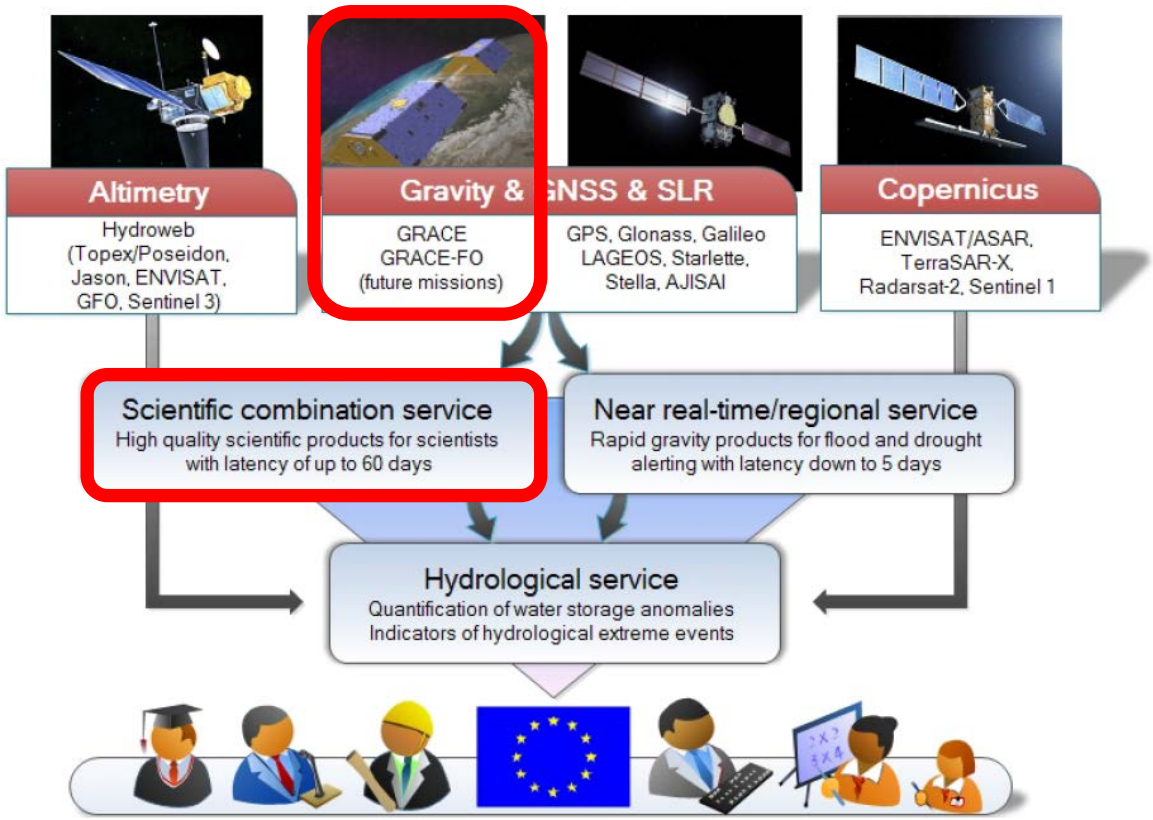
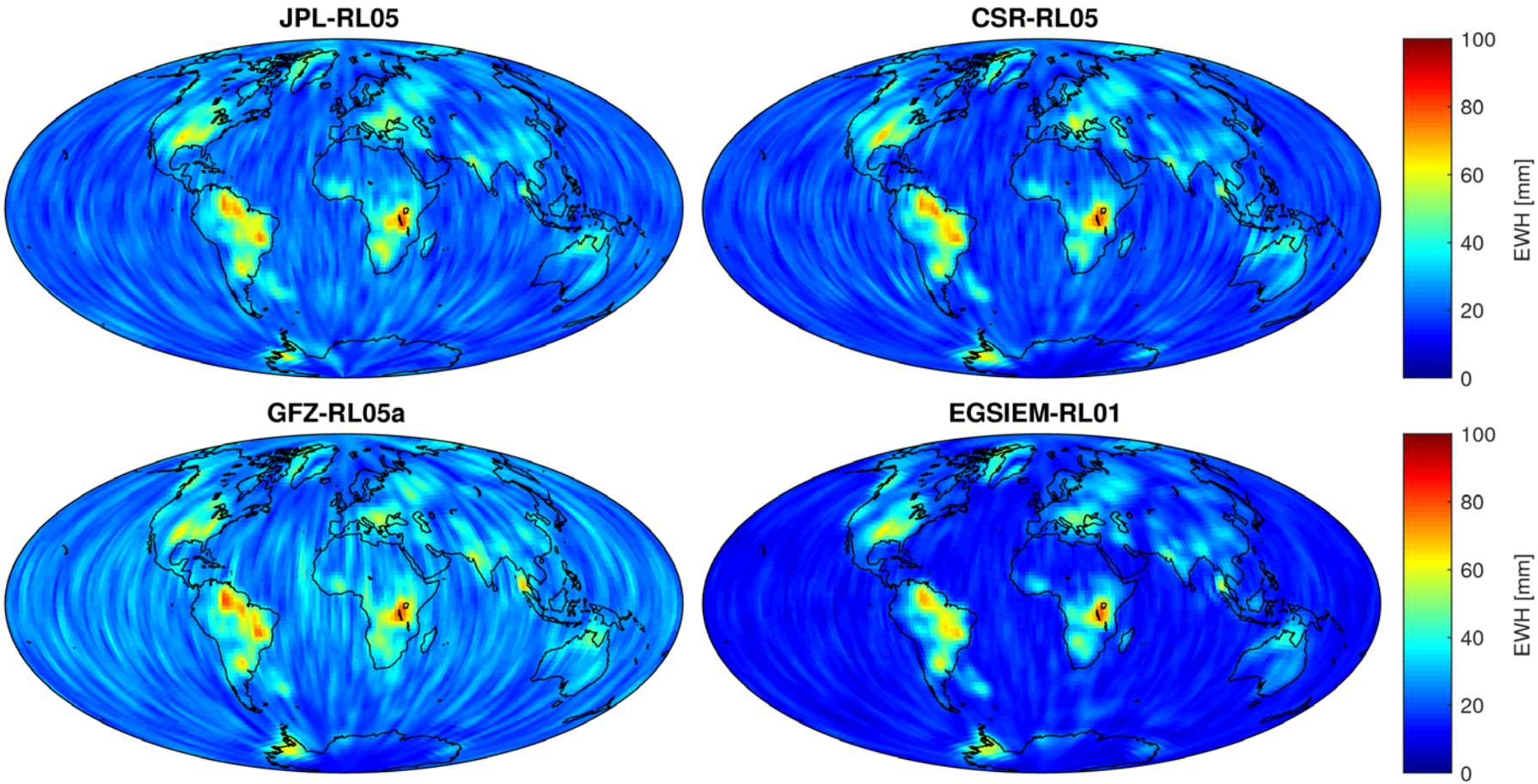
# The EGSIEM project

## European Gravity Service for Improved Emergency Management



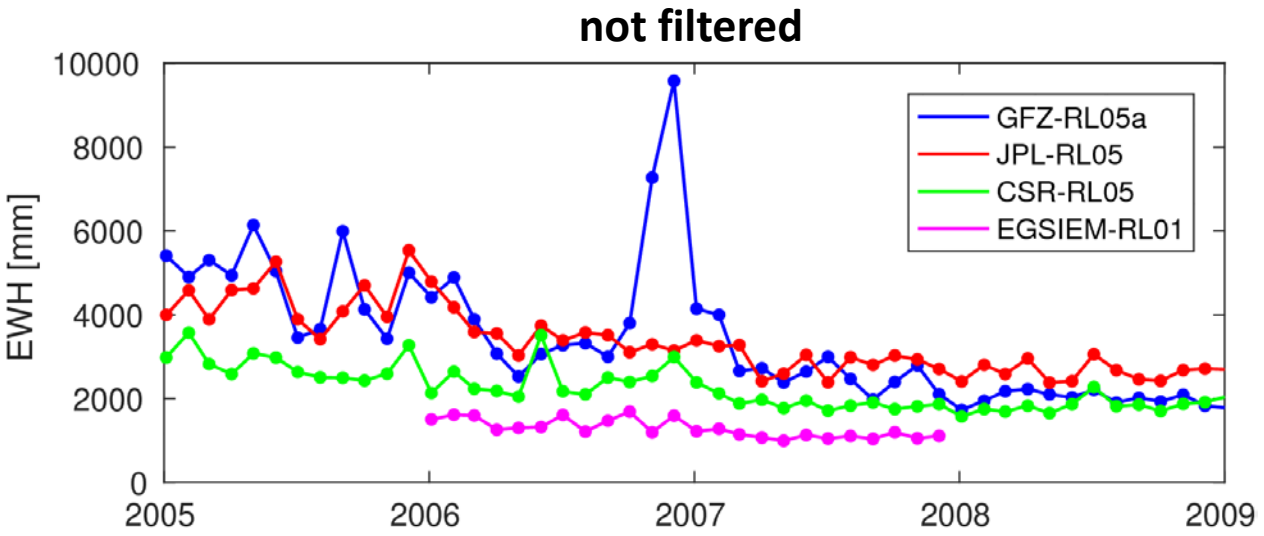

**The services are tailored to the needs of governments, scientists, decision makers, stakeholders and engineers. Special visualization tools are used to inform, update, and attract also the large public.**

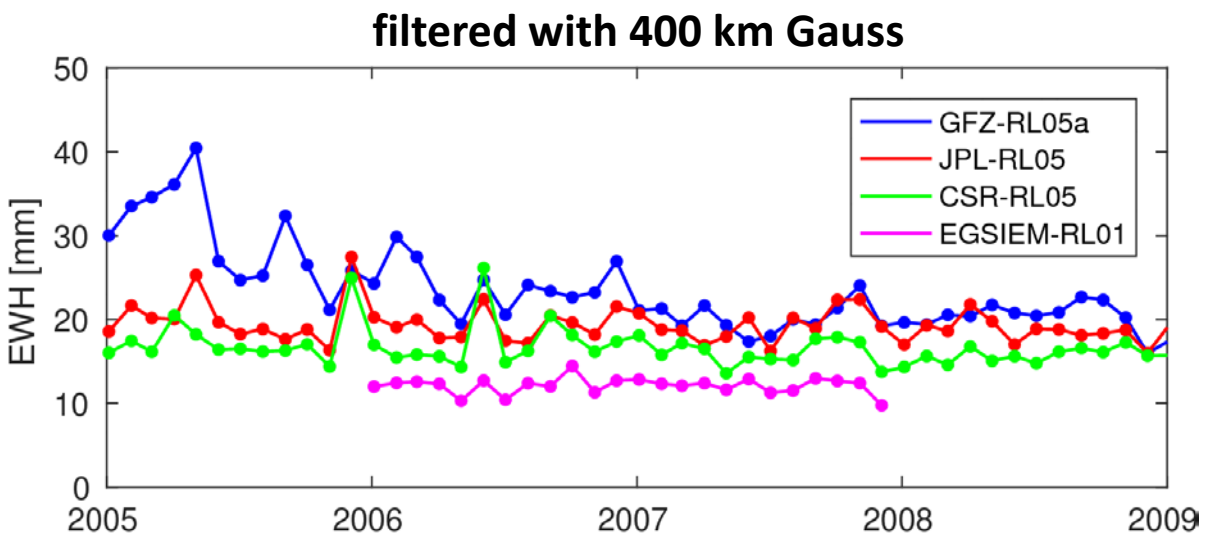
# Mass variations: quality assessment




**Non-seasonal, non-secular variability (RMS) of equivalent water height (EWH) over the oceans is an indicator for noise in the monthly gravity fields.**

# Monthly EWH variability over the oceans

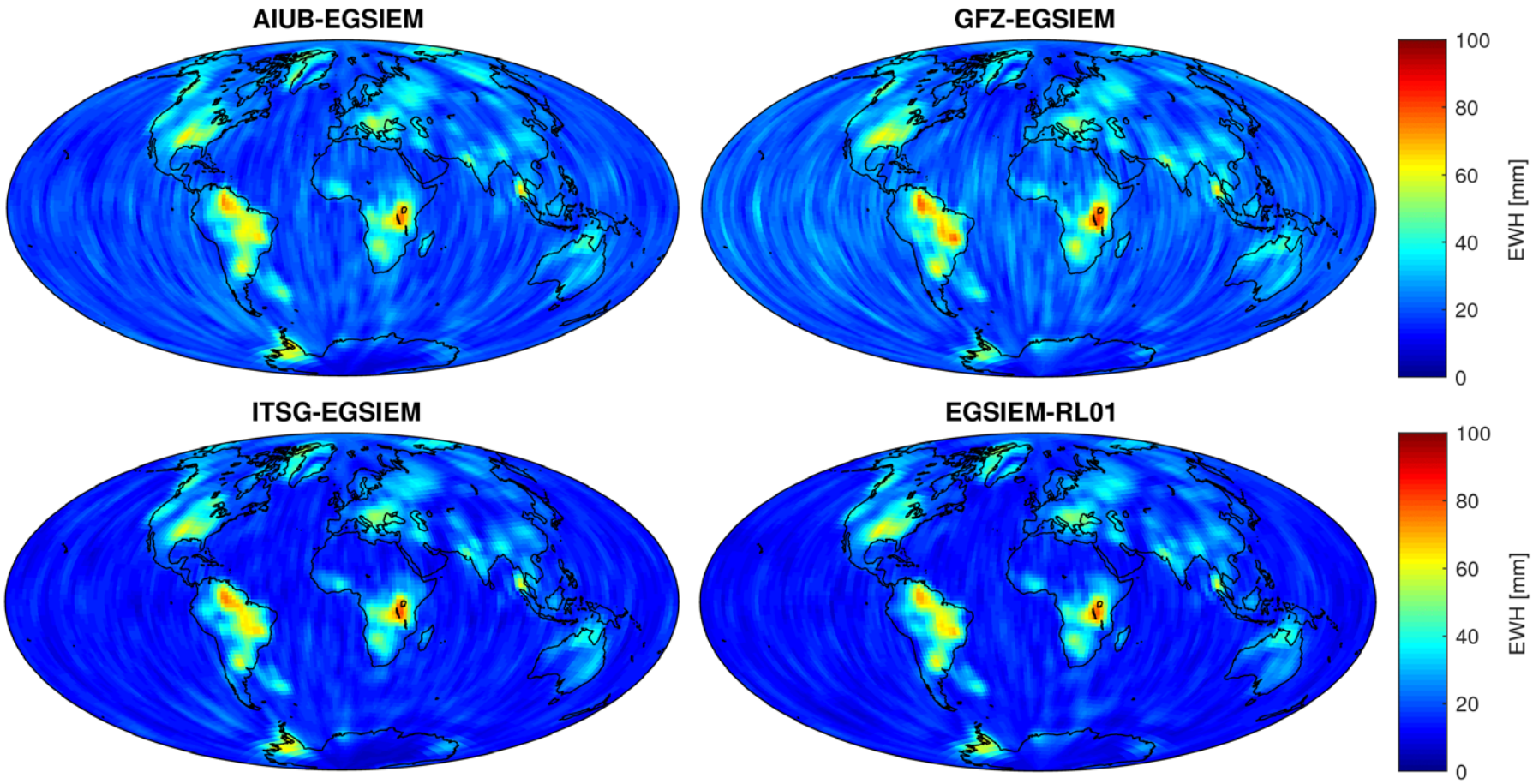



**The RMS of the non-seasonal variability over the oceans is used as a quality indicator of the monthly gravity fields.**

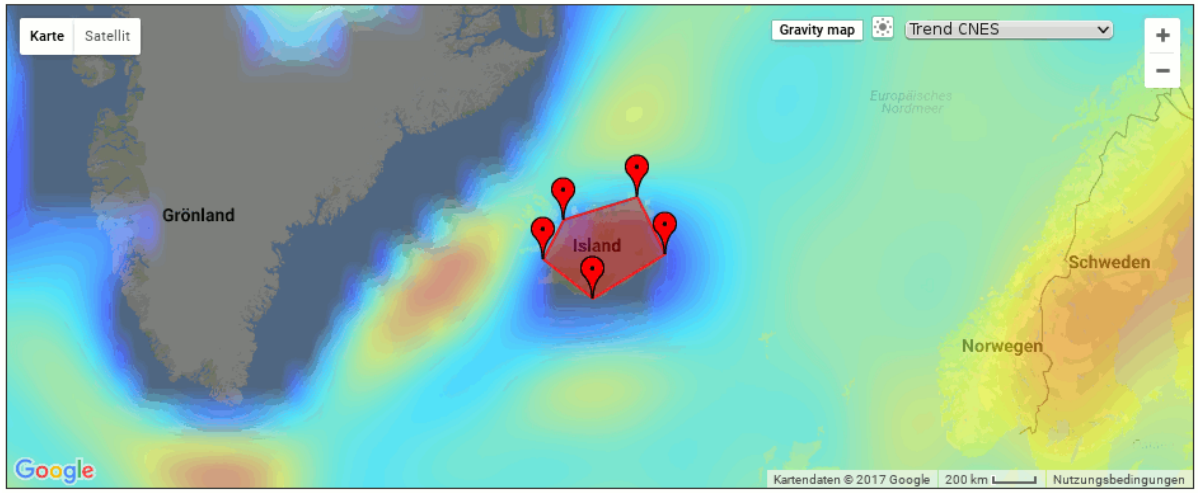
**Even when filtered to suppress small scale noise, the combined EGSIEM monthly gravity fields outperform the official GRACE SDS products.**

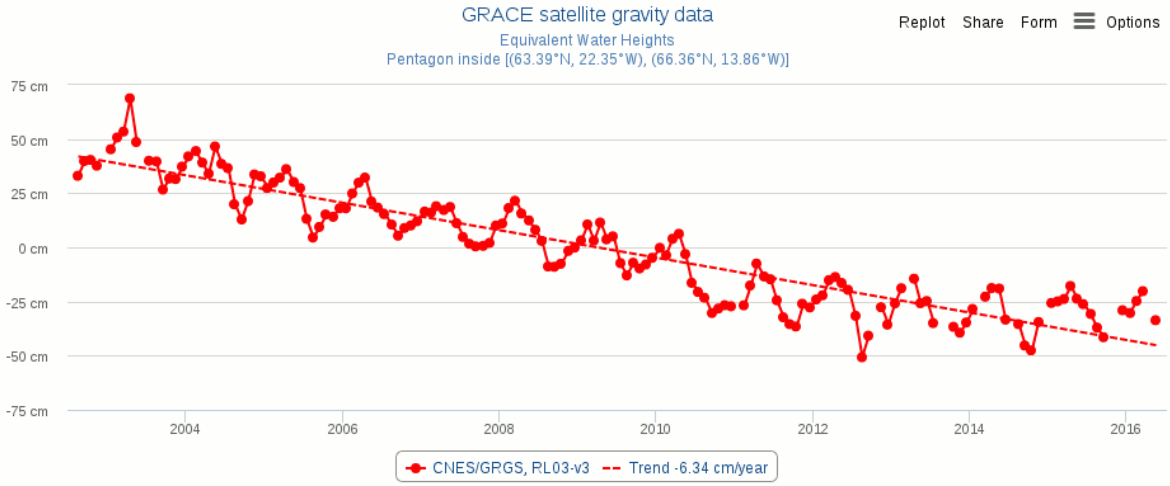
# EGSIEM individual contributions




**Individual contributions of associated Analysis Centers (ACs) were reprocessed in the frame of EGSIEM using common standards.**

# Visualization: EGSIEM-Plotter (plot.egsiem.eu)



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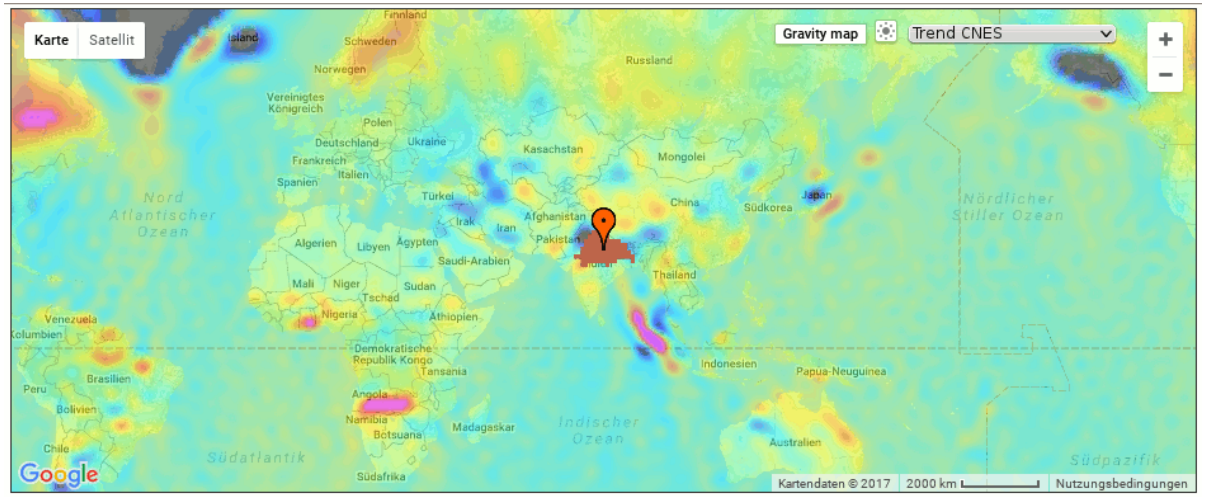


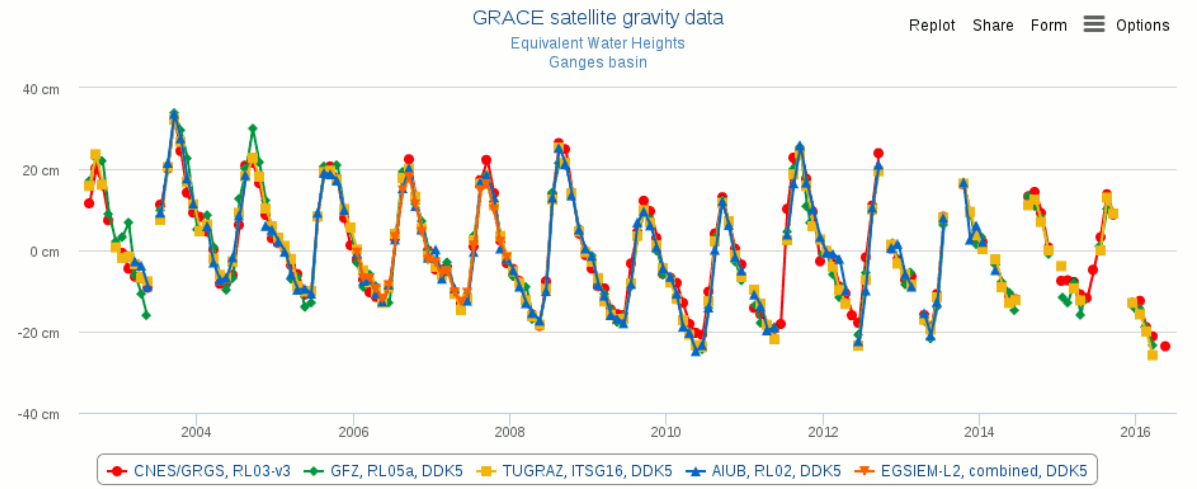

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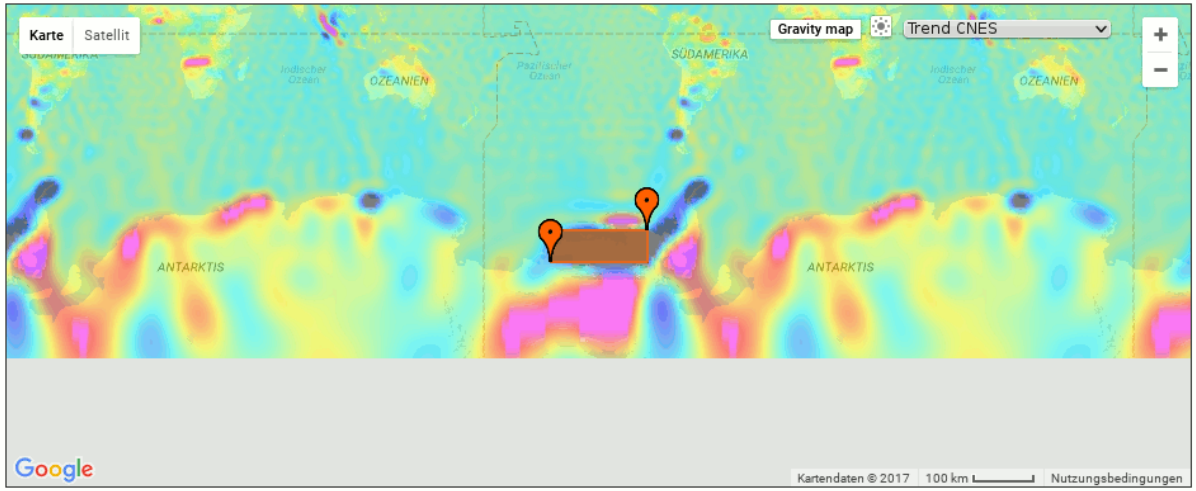


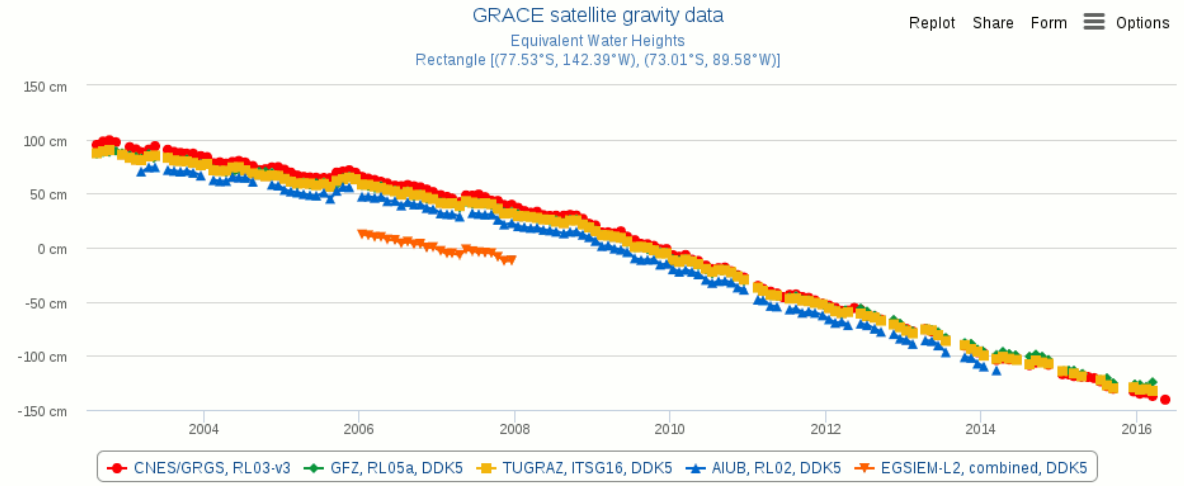

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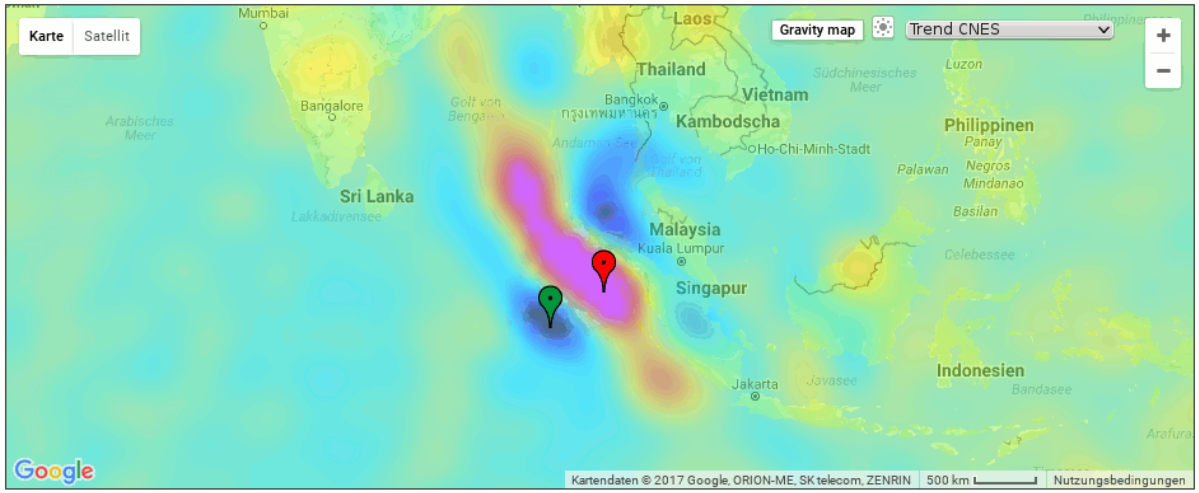
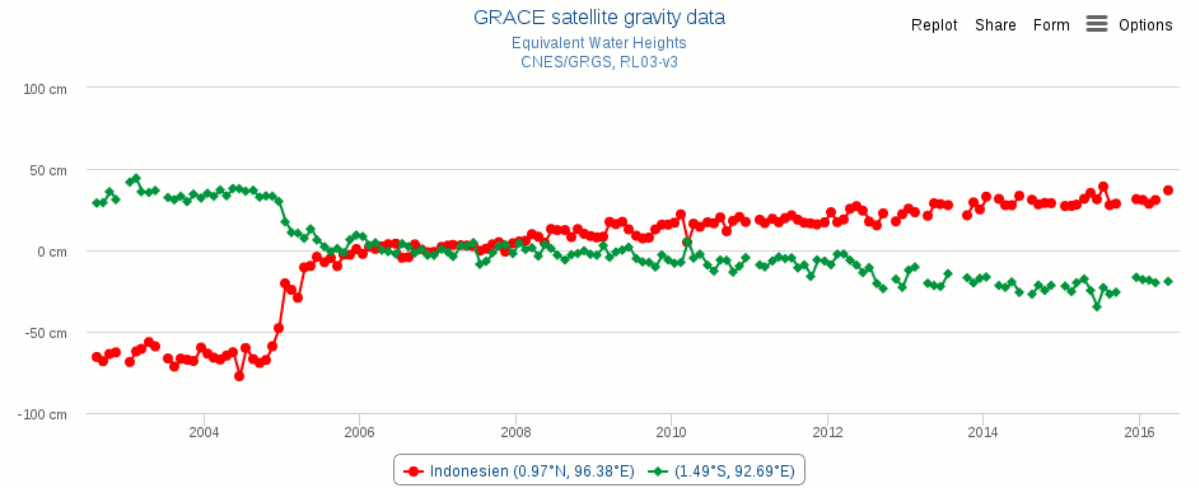
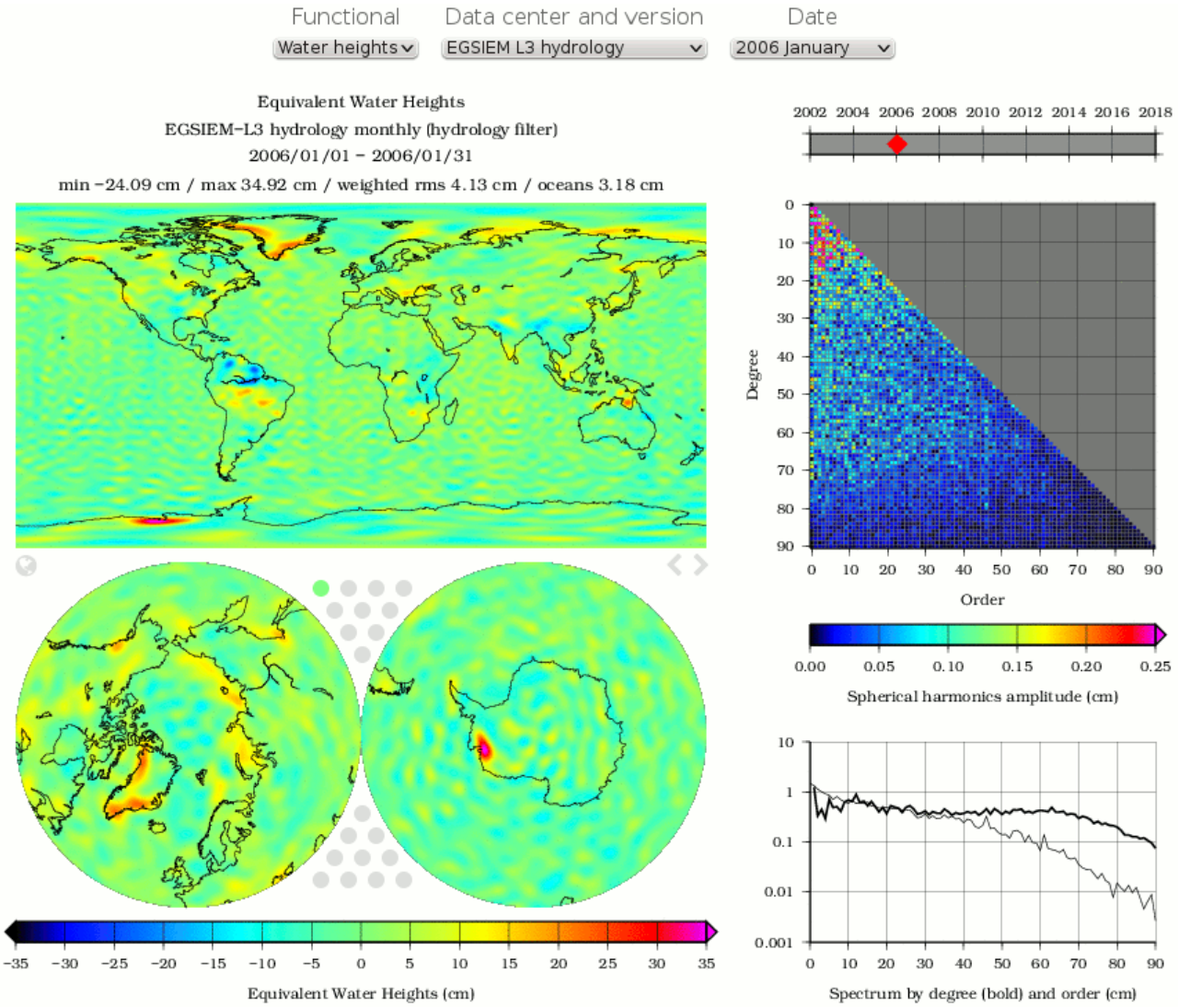
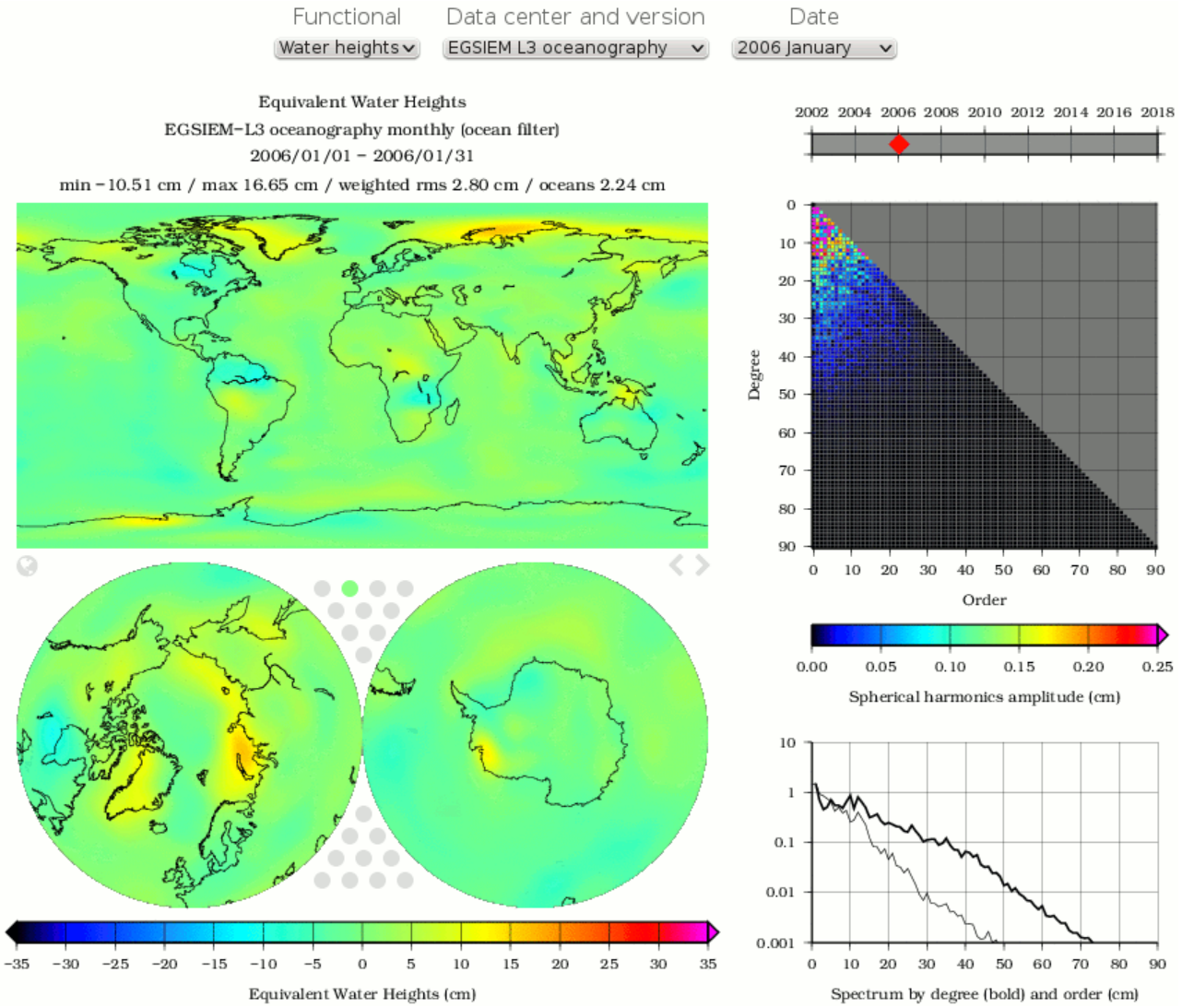


# Gridded L3-products: pre-filtered for hydrology appl.



# Gridded L3-products: pre-filtered for ocean applications



# EGSIEM current status and future

- **The products of the EGSIEM combination service are available at:**
  - **SH-coefficients (Level-2): www.icgem.de**
  - **grids and de-aliasing (Level-3): www.egsiem.eu**
- **The combination service will be continued as a Combination Center (COST-G) under the umbrella of the International Gravity Field Service (IGFS) of the International Association of Geodesy (IAG).**