

# GGOS D-A-CH – Status Report

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**GGOS CB Meeting, 16 May 2022**

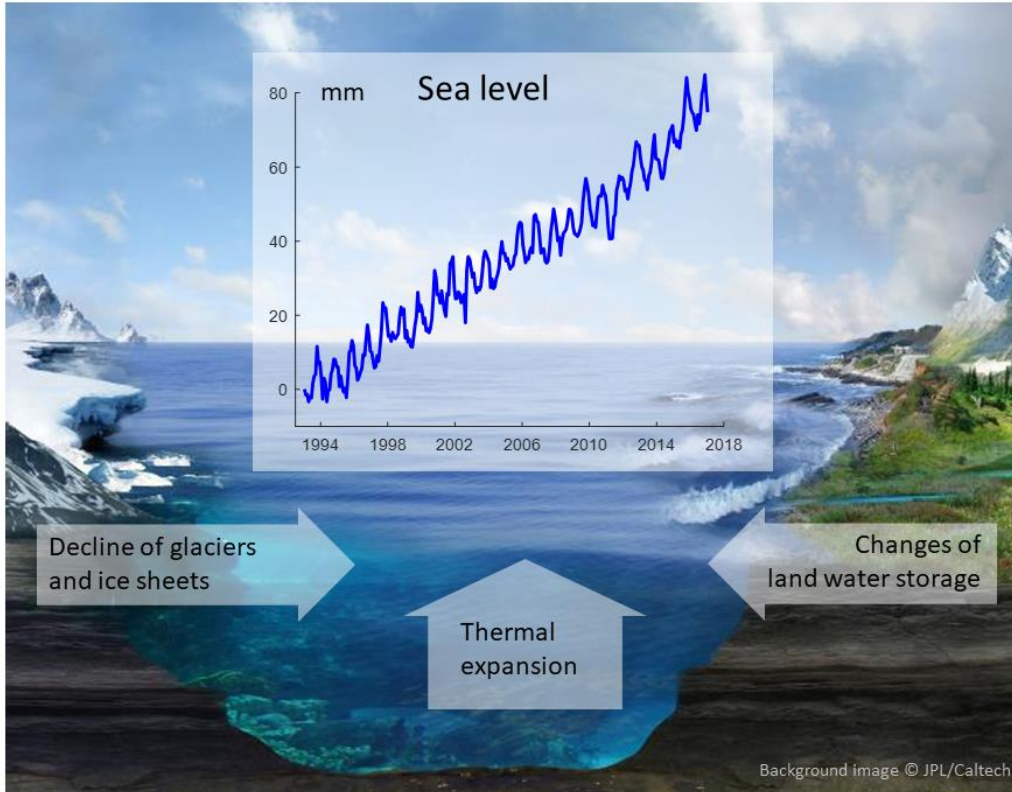
## Present state of GGOS D-A-CH

- GGOS D-A-CH was approved as GGOS Affiliate on 19 May 2021 (Chair: H. Kutterer)
- Basis and forum for GGOS-related activities in the D-A-CH region; stimulator and incubator for GGOS-related coordinated research
- Call for Participation in 2021: 19 expressions of interest from all three countries
  - Universities in Berlin, Bern, Bonn, Dresden, Hannover, Karlsruhe, Munich, Stuttgart, Vienna, Zurich
  - Research institutions and national agencies: BKG, BEV, GFZ
- Organization of a DFG Roundtable on 19-20 May 2022 in Munich: Discussion of a coordinated research proposal to advance GGOS
- Good exchange and cooperation with GGOS Japan ⇒ Presentation of GGOS D-A-CH at GGOS Japan meeting on 17 March 2022, planned joint proposal, stay of a KIT Master student at GSI Japan
- Regular reporting to GGOS CB and to national geodetic commissions (joint annual meeting in 2022 in Innsbruck, Austria, 19-22 September 2022)
- Participation in GGOS Days (14-15 November 2022 in Munich)

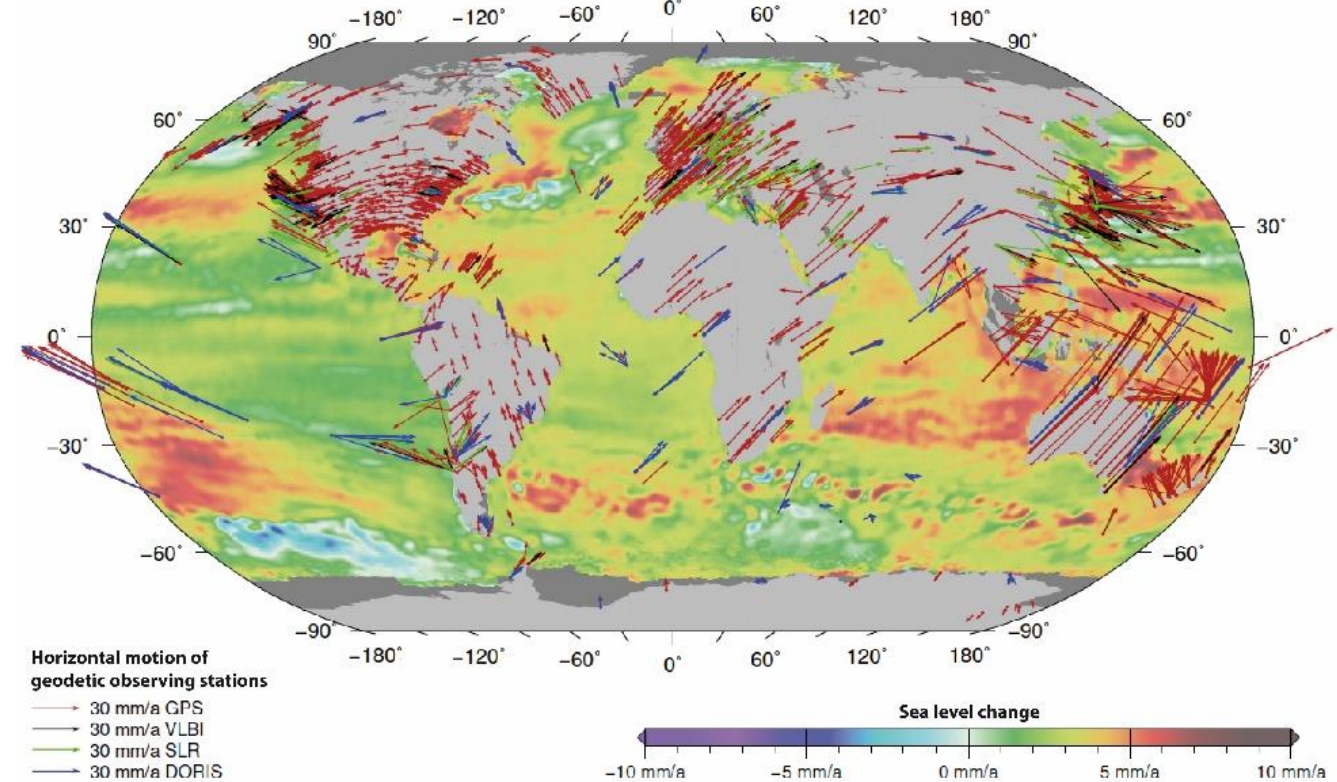


# White Paper „Geodesy 2030“

## Earth system processes and phenomena



Change in global mean sea level. The curve shows results of satellite altimetry (DGFI-TUM 2018).



Processes in the Earth system observed with geodetic methods: sea level change and drift of continental plates (courtesy: DGFI-TUM)

# White Paper „Geodesy 2030“

## Societal Challenges as general context



- Grand challenges to be tackled for societal, social and economic benefit
- Specific situation in geo-sciences
  - Natural hazards and disaster prevention
  - Climate change and climate protection
  - Protection and preservation of our environment
  - Sustainability assurance of natural resources
  - ...



- Significant contribution to the monitoring of the Sustainable Development Goals of the United Nations such as on Climate Change (#13), Oceans (#14), and Land ecosystems (#15)

# Scientific Goal: Preparation of a DFG Research Unit



## Possible topic and structure

### Working title

Global geodetic Earth system monitoring 2030: Integrating methodologies facing societal challenges

### Motivation

Earth system, digital twin, GGRF, innovative technologies, further development and enhancement of infrastructures



## Subject and methodology

Integrated determination of geodetic parameters and products according to GGOS

- Consistent combination of geometry (in terms of volume) and gravity (in terms of mass) including temporal variations
- Effective combination of the different levels of the GGOS observation architecture (in particular MEO+LEO)
- Optimization of the observing system including digital simulation (based on PLATO)
- Innovative technologies and future geodetic observation infrastructure
- Monitoring of the spatial geodetic reference frames (geometry, gravity) in near real time
- Interface to other disciplines