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The GravIS Portal: User-friendly Global Mass Variations from GRACE and GRACE-FO

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The German Research Centre for Geosciences (GFZ) maintains the “Gravity Information Service” (GravIS, gravis.gfz-potsdam.de) portal in collaboration with the Alfred-Wegener-Institute (AWI) and Technische Universität Dresden. Main objective of this portal is the dissemination of data describing mass variations in the Earth system based on observations of the satellite gravimetry missions GRACE and GRACE-FO.

The provided data sets encompass products of terrestrial water storage (TWS) variations over the continents, ocean bottom pressure (OBP) variations from which global mean barystatic sea-level rise can be estimated, and mass changes of the ice sheets in Greenland and Antarctica. All data sets are provided as time series of regular grids for each area, as well as in the form of regional basin averages. Regarding the latter, for the continental TWS data the user can choose between classical river basins and a novel segmentation based on climatic regions. For the oceans, the segmentation into different regions is derived similarly but based on modelled OBP data. All time series are accompanied by realistic uncertainty estimates.

All data sets can be interactively displayed at the portal and are freely available for download. This contribution aims to show the features and possibilities of the GravIS portal to researchers without a dedicated geodetic background, working in the fields of hydrology, oceanography, and cryosphere.