Changelog

COST-G GravIS RL01 Continental Water Storage Anomalies

Created: 21 April 2023

This document lists changes that occurred to the data set Boergens et al. (2020), http://doi.org/10.5880/COST-G.GRAVIS_01_L3_TWS

V. 0002:

- Initial version.

V. 0003 (09 September 2020):

- In the variable 'tws', TWS residuals filtered with VDK2 are used for months with exceptional high standard deviation (larger than two times the mean of the monthly standard deviation).
- The uncertainties of the variable 'std_tws' are now computed only from the residual signal over the continents (instead of over the continents and oceans).
- The variable 'leakage' now employs the scaling factor as reported in Dobslaw et al. (2020).

V. 0004 (09 December 2021):

- Change of reference surface to ellipsoid as defined in IERS Conventions (2010) Tab 1.1.
- The variable 'std_tws' is now computed from TWS residuals over the open ocean (distance to coast > 1000 km).
- Change of time series uncertainties due to updated covariance model parameters according to Boergens et al. (2022).

V. 0005 (21 April 2023):

- The input data has been changed from COST-G RL01 Level-2B Products *V.0002* to *V.0003* (Dahle & Murböck, 2020).
- Change of land-ocean-mask.

References:

Boergens, E., Kvas, A., Eicker, A., Dobslaw, H., Schawohl, L., Dahle, C., Murböck, M., Flechtner, F. (2022): Uncertainties of GRACE-Based Terrestrial Water Storage Anomalies for Arbitrary Averaging Regions. J. Geophys. Res.: Solid Earth, 127, 2, e2021JB022081. https://doi.org/10.1029/2021JB022081

Dahle, C., Murböck, M. (2020): Post-processed GRACE/GRACE-FO Geopotential GSM Coefficients COST-G RL01 (Level-2B Product). V. 0003. GFZ Data Services. https://doi.org/10.5880/COST-G.GRAVIS_01_L2B

Dobslaw, H., Dill, R., Bagge, M., Klemann, V., Boergens, E., Thomas, M., Dahle, C., Flechtner, F. (2020): Gravitationally Consistent Mean Barystatic Sea Level Rise From Leakage-Corrected Monthly GRACE Data. J. Geophys. Res.: Solid Earth, 125, e2020JB020923. https://doi.org/10.1029/2020JB020923

IERS Conventions (2010). Gérard Petit and Brian Luzum (eds.). (IERS Technical Note ; 36) Frankfurt am Main: Verlag des Bundesamts für Kartographie und Geodäsie, 2010. 179 pp., ISBN 3-89888-989-6