Changelog

Post-processed GRACE/GRACE-FO Geopotential GSM Coefficients GFZ RL06 (Level-2B Product)

Created: 16 January 2025

This document lists changes that occurred to the data set Dahle & Murböck (2019), https://doi.org/10.5880/GFZ.GRAVIS_06_L2B

V. 0001:

- Initial version.

V. 0002 (09 June 2020):

- The list of contributors has been changed from "*König, R., Schreiner, P., Klemann, V., Dobslaw, H.*" to "*König, R., Schreiner, P.*".
- The period of the long-term mean field has been changed from *2002/04 through 2016/08* (156 solutions) to *2002/04 through 2020/03* (183 solutions) resulting in a change of the reference epoch t_0 from *2009/03/31* to *2010/08/16*.
- In addition to the previously provided filter variants NFIL, VDK2, VDK3 and VDK5, the following filter variants are provided as well: VDK1, VDK4, VDK6, VDK7 and VDK8.
- The C_{20} replacement time series has been updated from *König et al. (2019)* to a *GRACE/GRACE-FO and SLR combination on normal equation level*; more details about the new time series are provided in the header of the file 'GRAVIS-2B_GFZOP_GRACE+SLR_LOW_DEGREES_0002.dat' which is part of the auxiliary data of this data set.
- In addition to C_{20}, also the coefficients C_{30} (only for months starting from 2016/11 and later), C_{21} and S_{21} are replaced by the same replacement time series as mentioned above for C_{20}.
- The GIA model has been updated from *ICE-5G / VM2* to *ICE-6G_D (VM5a)* (Peltier et al., 2018); the applied reference epoch t_0 has been changed from *2009/03/31* to *2010/08/16*.
- The software for the approximation of the geocenter coefficients has been updated; more details about the resulting new geocenter time series are provided in the header of the file 'GRAVIS-2B_GFZOP_GEOCENTER_0002.dat' which is part of the auxiliary data of this data set.
- The period of solutions used for the estimation of the S2 tidal alias signal has been changed from *2002/04 through 2016/08* (156 solutions) to *2002/04 through 2020/03* (183 solutions); the applied reference epoch t_0 has been changed from *2009/03/31* to *2010/08/16*.

V. 0003 (21 April 2023):

- For the GRACE-FO period, the Level-2 products used as input for this dataset changed from GFZ GRACE-FO *RL06* to *RL06.1*, i.e., the updated version V 6.1 of the dataset Dahle et al. (2019) was used.
- Replacement of C_{30} coefficients by corresponding values from a GRACE/GRACE-FO + SLR combination (auxiliary file 'GRAVIS-2B_GFZOP_GRACE+SLR_LOW_DEGREES_0003.dat') is only applied during the period 2016/11 through 2017/06 (i.e., the last seven available months of the GRACE period), but not any longer for the months 2018/06 and later (i.e., the GRACE-FO period).
- Replacement of C_{21} and S_{21} coefficients by corresponding values from a GRACE/GRACE-FO + SLR combination (auxiliary file 'GRAVIS-2B_GFZOP_GRACE+SLR_LOW_DEGREES_0003.dat') is only applied for the GRACE period (2002/04 through 2017/06), but not any longer for the GRACE-FO period (2018/06 and later).

V. 0004 (16 January 2025):

- For the GRACE-FO period, the Level-2 products used as input for this dataset changed from GFZ GRACE-FO *RL06.1* to *RL06.3*, i.e., the updated version V 6.3 of the dataset Dahle et al. (2019) was used.

References:

Dahle, C., Flechtner, F., Murböck, M., Michalak, G., Neumayer, K. H., Abrykosov, O., Reinhold, A., König, R. (2019): GRACE-FO Geopotential GSM Coefficients GFZ RL06. V. 6.3. GFZ Data Services. https://doi.org/10.5880/GFZ.GRACEFO_06_GSM

König, R., Schreiner, P., Dahle, C. (2019): Monthly estimates of C(2,0) generated by GFZ from SLR satellites based on GFZ GRACE/GRACE-FO RL06 background models. V. 1.0. GFZ Data Services. https://doi.org/10.5880/GFZ.GRAVIS_06_C20_SLR

Peltier, W.R., Argus, D.F., Drummond, R. (2018): Comment on "An Assessment of the ICE-6G_C (VM5a) Glacial Isostatic Adjustment Model" by Purcell et al., Journal of Geophysical Research: Solid Earth, 123, p. 2019—2028. https://doi.org/10.1002/2016JB013844