GRACE Science Data System Monthly Report
November 2005

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Highlights:

- Reprocessed UTCSR, GFZ and JPL GRACE gravity fields as well as updated documentation have been provided to the GRACE Science Team on November 4, 2005 (see also entries in “Level-2 Processing” and “L2 Data Distribution”).

Satellite Science Relevant Events:

- Nominal operation in Science Mode throughout the month, except on 2005-11-15 when GRACE-B experienced at ~19:40 UTC a coarse pointing mode for about 30 minutes and on 2005-11-22 when GRACE-A experienced a Missed Interrupt reversal at ~03:20 UTC (see entries in L1 Data Processing section).
- The GRACE-1 Brouwer mean orbital elements on December 01, 2005 00:00:00 are as follows:

  A [m] = 6843633.333
  E [-] = 0.001889
  I [^{o}] = 89.030722

  The satellites separation was 202 km on December 1 with a rate of -0.12 km/d. Thus, the next orbit maintenance maneuver has to be performed in about 6 months. But, for December 2005 a switch of both GRACE satellites (in order to minimize K-band antenna ageing by atomic oxygen) is planned, which will imply a series of maneuvers starting on December 3, 2005.

Level-0 raw data dump reception statistics at DLR ground stations Weilheim and Neustrelitz:

GRACE-1 Housekeeping:	99.8 %
GRACE-1 Science:	100.0 %
GRACE-2 Housekeeping:	99.2 %
GRACE-2 Science:	100.0 %

Level-1 Data Processing:

- Level-1B Release 01 instrument data have been processed at JPL and archived at GRACE-ISDC and JPL PO.DAAC.
- Notes: On 2005-11-15 GRACE-B experienced at ~19:40 UTC a coarse pointing mode for about 30 minutes resulting in the KBR1B data loss for that day.
- On 2005-11-22 GRACE-A experienced a Missed Interrupt reversal from 03:20:00 till 07:12:00. During this interval the KBR1B data is not valid for analysis. Errors during this time range from 5 to 10 micron/sec in KBR range rate. The Users are advised to discard the KBR1B data during this time.

A) KBR1B product name
B) Total arc length with data (hours)
C) Number of observations used in residual calculation
D) KBR-GPS range residual RMS (cm)
E) minimum KBR-GPS range residual (cm)
F) maximum KBR-GPS range residual (cm)
G) number of continuous segments in the KBR product

A	B	C	D	E	F	G
KBR1B_2005-10-21_X_01.dat	24.0	17280	1.68	-4.5	4.8	1
KBR1B_2005-10-22_X_01.dat	23.9	17205	1.27	-3.5	3.2	2
KBR1B_2005-10-23_X_01.dat	24.0	17280	1.24	-4.3	3.0	1
KBR1B_2005-10-24_X_01.dat	23.9	17205	1.18	-3.2	4.2	2
KBR1B_2005-10-25_X_01.dat	24.0	17266	1.28	-3.3	2.9	2
KBR1B_2005-10-26_X_01.dat	23.9	17194	1.59	-4.6	4.3	2
KBR1B_2005-10-27_X_01.dat	23.6	17025	1.32	-3.8	4.1	3
KBR1B_2005-10-28_X_01.dat	23.8	17111	1.14	-2.9	3.9	3

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KBR1B_2005-10-29_X_01.dat  24.0  17238  1.41    -4.0    3.7  2
KBR1B_2005-10-30_X_01.dat  24.0  17260  1.35    -3.5    4.1  1
KBR1B_2005-10-31_X_01.dat  24.0  17260  1.30    -3.5    3.4  1
KBR1B_2005-11-01_X_01.dat  24.0  17260  1.64    -5.9    3.9  1
KBR1B_2005-11-02_X_01.dat  23.8  17145  1.09    -2.4    3.6  2
KBR1B_2005-11-03_X_01.dat  23.8  17105  1.60    -6.0    5.0  2
KBR1B_2005-11-04_X_01.dat  24.0  17246  1.39    -3.7    3.8  2
KBR1B_2005-11-05_X_01.dat  23.9  17222  1.23    -3.1    4.5  3
KBR1B_2005-11-06_X_01.dat  23.9  17214  1.19    -3.9    3.1  3
KBR1B_2005-11-07_X_01.dat  23.8  17145  1.27    -2.7    3.6  2
KBR1B_2005-11-08_X_01.dat  24.0  17260  1.15    -4.0    2.9  1
KBR1B_2005-11-09_X_01.dat  23.8  17125  1.39    -3.8    3.8  2
KBR1B_2005-11-10_X_01.dat  24.0  17265  1.09    -2.9    4.1  2
KBR1B_2005-11-11_X_01.dat  24.0  17258  1.17    -2.8    3.7  2
KBR1B_2005-11-12_X_01.dat  23.8  17130  1.19    -3.2    3.1  3
KBR1B_2005-11-13_X_01.dat  24.0  17249  1.37    -4.2    4.7  2
KBR1B_2005-11-14_X_01.dat  24.0  17280  1.60    -4.6    5.3  1
KBR1B_2005-11-15_X_01.dat  23.4  16835  1.10    -4.2    3.5  3
KBR1B_2005-11-16_X_01.dat  24.0  17280  1.07    -3.4    3.0  1
KBR1B_2005-11-17_X_01.dat  24.0  17280  1.35    -4.1    3.9  1
KBR1B_2005-11-18_X_01.dat  23.8  17145  1.66    -8.6    3.1  2
KBR1B_2005-11-19_X_01.dat  24.0  17280  1.37    -3.4    3.8  1
KBR1B_2005-11-20_X_01.dat  24.0  17259  1.12    -2.7    3.2  2
KBR1B_2005-11-21_X_01.dat  23.8  17118  1.35    -3.4    3.6  2
KBR1B_2005-11-22_X_01.dat  23.9  17224  1.21    -2.8    4.1  3
KBR1B_2005-11-23_X_01.dat  24.0  17260  1.23    -3.4    3.5  1
KBR1B_2005-11-24_X_01.dat  23.8  17125  1.36    -3.6    4.2  2
KBR1B_2005-11-25_X_01.dat  not yet distributed
…
KBR1B_2005-11-30_X_01.dat  not yet distributed
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- Release 01 Level-1B barotropic sea level products (OCN1B) and de-aliasing products (AOD1B) were calculated by GFZ until November 30, 2005 and archived at GRACE-ISDC.
- Release 03 Level 1B de-aliasing products (AOD1B) based on OMCT (Ocean Model for Circulation and Tides) baroclinic ocean model for November 2005 will be generated mid of December 2005.

Level-2 Data Processing:

- All 3 L2 centers at CSR, JPL and GFZ continued reprocessing of release 02 (CSR, JPL) and 03 (GFZ) based on new standards, background models and processing strategies.

GRACE Product Distribution:

- Constrained field from UTCSR, and the associated Level-1B products, for September 2005 are now available to the GRACE Science Team at PO.DAAC and ISDC.
- As stated above, the improved time series (GSM along with corresponding GAC products) have been provided to the GRACE Science Team on November 4 (and have been extended throughout the month) to be used in their AGU presentations. Note that the filename convention has been changed! Updated L2 User Handbook, L2 Processing Standard Documents and L2 Release notes have been made available too.
- Present time period covered by the reprocessed products:
    - GFZ RL03: February 2003 – April 2005 (21 monthly fields)
    - CSR RL02: July 2003 – March 2005 (17 monthly fields)
    - JPL RL02: January 2003 – April 2005 (23 monthly fields)

Miscellaneous:

- GRACE Science Team Meeting (GSTM) proceedings are now available online (http://www.csr.utexas.edu/grace/GSTM).
- Selected and reviewed presentations from the July 2004 Joint CHAMP/GRACE Science Meeting will be published in a special issue of EGU´s ´Advances of Geosciences´.
- Science data users are encouraged to submit citations of their own and other works related with GRACE to the bibliography web page implemented at PO.DAAC: http://podaac.jpl.nasa.gov/grace/bibliography.html.