GRACE Science Data System Monthly Report
November 2006

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Highlights:

- CSR RL01 L2 products for October 2006 have been provided to the archives.
- GFZ RL03 L2 products for October 2006 due to RL04 reprocessing still pending. Users will be informed as soon as the products are available.
- All 3 L2 centers have started reprocessing based on improved background models (e.g. static gravity field, AOD1B RL04, FES2004, Ocean Pole Tide), more secular trends and full IERS2003 conventions. First results have been presented at the GRACE Science Team Meeting on December 8 and 9 in San Francisco. These new RL04 products are planned to be provided end of January 2007.
- The IPU (Instrument Processing Unit) on GRACE-1 and GRACE-2 have operated without any reboot for 47 and 60 days, respectively! See also KBR1B statistics below.

Satellite Science Relevant Events:

- Nominal operation in Science Mode throughout the month.
- The GRACE-1 Brouwer mean orbital elements on December 01, 2006 00:00:00 are as follows:

  A [m] = 6841581.972
  E [-] = 0.001831
  I [º] = 89.015011

  The satellites separation was 201 km on December 1, 2006 with a rate of -0.72 km/d. Next orbit maintenance maneuver will be performed on January 4, 2007.

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

GRACE-1 Housekeeping:	99.9 %
GRACE-1 Science:	100.0 %
GRACE-2 Housekeeping:	99.3 %
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.

- KBR statistics:
  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_2006-11-01_X_01.dat	24.0	17280	1.24	-4.0	3.0	1
KBR1B_2006-11-02_X_01.dat	24.0	17280	1.85	-6.3	5.1	1
KBR1B_2006-11-03_X_01.dat	24.0	17280	1.35	-4.0	4.3	1
KBR1B_2006-11-04_X_01.dat	24.0	17280	1.62	-4.8	5.5	1
KBR1B_2006-11-05_X_01.dat	24.0	17280	1.57	-4.9	6.2	1
KBR1B_2006-11-06_X_01.dat	24.0	17280	1.85	-5.1	5.2	1
KBR1B_2006-11-07_X_01.dat	24.0	17280	1.58	-4.5	4.4	1
KBR1B_2006-11-08_X_01.dat	24.0	17280	1.81	-5.5	5.4	1
KBR1B_2006-11-09_X_01.dat	24.0	17280	1.38	-3.3	3.5	1
KBR1B_2006-11-10_X_01.dat	24.0	17280	1.51	-6.3	4.3	1
KBR1B_2006-11-11_X_01.dat	24.0	17280	1.67	-5.5	4.1	1
KBR1B_2006-11-12_X_01.dat	24.0	17280	1.73	-4.5	4.5	1
KBR1B_2006-11-13_X_01.dat	24.0	17280	1.55	-4.6	3.7	1

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KBR1B_2006-11-14_X_01.dat  24.0  17280  1.25    -4.4    3.2  1
KBR1B_2006-11-15_X_01.dat  24.0  17280  1.53    -4.8    3.7  1
KBR1B_2006-11-16_X_01.dat  24.0  17280  1.49    -3.8    5.7  1
KBR1B_2006-11-17_X_01.dat  24.0  17280  1.49    -5.2    4.6  1
KBR1B_2006-11-18_X_01.dat  24.0  17280  1.44    -4.1    3.0  1
KBR1B_2006-11-19_X_01.dat  24.0  17280  1.61    -5.9    5.2  1
KBR1B_2006-11-20_X_01.dat  24.0  17280  1.49    -3.8    4.2  1
KBR1B_2006-11-21_X_01.dat  24.0  17280  1.82    -6.8    4.6  1
KBR1B_2006-11-22_X_01.dat  24.0  17280  1.69    -6.0    4.2  1
KBR1B_2006-11-23_X_01.dat  24.0  17280  1.67    -4.7    5.6  1
KBR1B_2006-11-24_X_01.dat  24.0  17280  1.91    -4.5    6.0  1
KBR1B_2006-11-25_X_01.dat  23.9  17205  1.87    -5.0    6.8  2
KBR1B_2006-11-26_X_01.dat  23.8  17145  1.71    -4.7    4.8  2
KBR1B_2006-11-27_X_01.dat  24.0  17280  1.67    -4.3    4.0  1
KBR1B_2006-11-28_X_01.dat  24.0  17280  1.75    -3.7    4.7  1
KBR1B_2006-11-29_X_01.dat  23.9  17239  1.86    -5.9    4.5  3
KBR1B_2006-11-30_X_01.dat  24.0  17280  1.92    -4.9    5.9  1
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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, 2006 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 has been derived for October 2006.
- Release 04 Level 1B de-aliasing products (AOD1B) based on improved OMCT (updated thermodynamic sea ice model and new data set for surface salinity relaxation), mass-conserving approach and harmonized land/water masks has been processed for January 2001 until July 2006 and made available to the SDS processing centers for L2 reprocessing (see below).

Level-2 Data Processing:

- All 3 L2 centers at CSR, JPL and GFZ continued processing of release 01 (CSR), release 02 (JPL) and release 03 (GFZ) products.
- TN05 containing C20 estimates derived from SLR is periodically updated (maybe used to substitute C20 values of CSR RL01 products).
- Spurious slopes over land, which are due to the non-mass-conserving OMCT model output in AOD1B RL03 (used in JPL RL02 and GFZ RL03 L2 products), can and have to be corrected

by re-adding the GAB product over land. A technical note TN04 was prepared and is available since May 10, 2006.

GRACE Product Distribution:

Besides more experimental releases which are only available to the GRACE Science Team the following L2 products are available to the public:

- GFZ RL03 L2 products are available for February 2003 until September 2006. Missing months are June 2003 and January 2004. July 2004 until October 2004 are also available as constrained solutions (*GK2-*). Corresponding background GAA, GAB and GAC products and calibrated errors (GSM*.txt) have been provided too. Details are listed in the GFZ L2 Release Notes.
- CSR RL01 unconstrained GSM solutions along with the GAC background model files and calibrated errors (GSM*.txt) are available for the period August 2002 – October 2006 (only June 2003 is missing due to accelerometer data problems). Details are listed in the CSR L2 Release Notes.
- JPL RL02 L2 products along with the GAB and GAC background model files and calibrated errors (GSM*.txt) are available for February 2003 until November 2005 except for June 2003 and August to October 2004. Details are listed in the JPL L2 Release Notes.

Miscellaneous:

- GRACE Science Team Meeting was held in San Francisco at the Holiday Inn Golden Gateway on December 8/9, 2006.
- Last GRACE Science Team Meeting (GSTM) proceedings (October 2005) are available online (http://www.csr.utexas.edu/grace/GSTM).
- It was decided by the PI/Co-PI that papers from the Potsdam Joint CHAMP/GRACE Science Meeting in July 2004 shall be provided on the CHAMP and GRACE web pages if the authors agree. A corresponding questionnaire was circulated and evaluated. Corresponding papers will be available soon.
- A list of GRACE related publications which can be sorted by author or date is available at http://www.gfz-potsdam.de/pb1/op/grace/index_GRACE.html under item “Publications”. This list will be regularly updated and maybe incomplete. If you are missing a publication please send an e-mail to Frank Flechtner.
- 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.