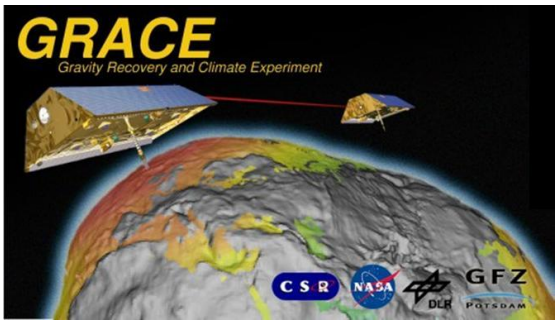
GRACE Science Data System Monthly Report August 2010



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Highlights:

- JPL has generated and delivered RL04 Level-2 products for July 2010. The corresponding CSR and GFZ products for July 2010 will be available in the very next days. Please check the archives for updates.
- Online registration and abstract submission for the next Grace Science Team Meeting at GFZ in Potsdam on 11/12 November 2010 is now possible at http://www.gfz-potsdam.de/portal/gfz/Neuestes/Veranstaltungen/Tagungen+und+Konferenzen/2010-Conferences/GSTM-2010. There you can also find information on the coarse session program and schedule or help on accommodation.

  Some important information on abstract submission:
  - Deadline is October 24 as we need time to prepare the final program
  - You need first to register yourself!
  - Please note that you have to provide the surname, e-mail and password exactly as provided in the registration confirmation. In case of technical problems please contact Hartmut Pflug (pflug@gfz-potsdam.de).
  - Please provide the requested Session Number (A.1-A.3 or B.1-B.6, see Session Program) in front of your title, e.g.
    - A.1 Simulation Study for a Future Gravity Mission or
    - B.5 Estimating groundwater storage changes in large River basins using GRACE data
  - Type of presentation is <Poster> or <Talk>. The type <Other> and the field behind are obsolete.
  - As the program will be very dense and we have also reserved in each session time for

open-floor discussion, it is very likely that we cannot accept each presentation as oral presentation and instead we will have to shift several to posters on day 1. You will be informed on our decision by October 31.

Please continue to visit the GSTM2010 site regularly for updated information.

Satellite Science Relevant Events:

- Operations in Science Mode throughout the month except for the periods highlighted in the L1B Data Processing section below.
- The GRACE-1 Brouwer mean orbital elements on September, 2010 00:00:00 are as follows:

  A [m] = 6836177.069

  E [-] = 0.001596

  I [º] = 89.014477
- The satellites separation was 236 km on September 1, 2010 with a rate of 0.21 km/d. Next orbit maintenance maneuver won't be necessary for some months.

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

GRACE-A Housekeeping:	100.0 %	GRACE-B Housekeeping:	100.0 %
GRACE-A Science:	100.0 %	GRACE-B 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. Please refer to the statistics below.
- Notes:
  - On 03-AUG-2010 14:07:16.0390 an ACC bias jump occurred on GRACE-B in the Science Reference Frame linear Y-axis and in the angular Z-axis. The ACC1B data was corrected by adding a bias of $-5.22241919932044e^{-9}$ m/sec^2 prior to 3-AUG-2010 14:07:16.0390. The angular Z-axis was not corrected. The linear ACC1B data are considered nominal and should be used in the level-2 gravity field determination processing.
  - 2010-08-12 09:00 a long GRACE-B IPU reboot after a software upload resulted in coarse pointing mode. In total 22 minutes of KBR1B data was lost.

- **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_2010-08-01_X_01.dat	24.0	17280	0.31	-1.0	1.5	1
KBR1B_2010-08-02_X_01.dat	24.0	17280	0.27	-0.8	0.9	1
KBR1B_2010-08-03_X_01.dat	24.0	17280	0.41	-1.4	1.4	1
KBR1B_2010-08-04_X_01.dat	24.0	17280	0.57	-2.0	2.5	1
KBR1B_2010-08-05_X_01.dat	24.0	17280	0.34	-1.2	1.5	1
KBR1B_2010-08-06_X_01.dat	23.8	17124	0.27	-0.6	1.1	3
KBR1B_2010-08-07_X_01.dat	24.0	17280	0.25	-0.9	0.9	1
KBR1B_2010-08-08_X_01.dat	23.8	17145	0.49	-1.1	3.6	2
KBR1B_2010-08-09_X_01.dat	24.0	17280	0.29	-0.9	1.4	1
KBR1B_2010-08-10_X_01.dat	24.0	17280	0.27	-1.0	0.8	1
KBR1B_2010-08-11_X_01.dat	24.0	17280	0.42	-1.7	1.6	1
KBR1B_2010-08-12_X_01.dat	23.5	16938	0.64	-2.3	3.7	3
KBR1B_2010-08-13_X_01.dat	24.0	17280	0.32	-0.9	1.1	1
KBR1B_2010-08-14_X_01.dat	23.8	17145	0.32	-1.1	1.0	2
KBR1B_2010-08-15_X_01.dat	23.8	17124	0.41	-2.3	1.4	2
KBR1B_2010-08-16_X_01.dat	24.0	17280	0.25	-0.7	1.0	1
KBR1B_2010-08-17_X_01.dat	23.9	17233	0.33	-0.8	1.6	3
KBR1B_2010-08-18_X_01.dat	24.0	17280	0.31	-0.8	1.3	1
KBR1B_2010-08-19_X_01.dat	24.0	17280	0.38	-1.4	1.6	1
KBR1B_2010-08-20_X_01.dat	24.0	17280	0.32	-1.3	0.8	1
KBR1B_2010-08-21_X_01.dat	23.9	17201	0.29	-0.7	1.0	2
KBR1B_2010-08-22_X_01.dat	24.0	17258	0.28	-1.2	0.9	2
KBR1B_2010-08-23_X_01.dat	24.0	17280	0.30	-0.9	1.4	1
KBR1B_2010-08-24_X_01.dat	23.9	17205	0.35	-1.4	1.2	2
KBR1B_2010-08-25_X_01.dat	24.0	17280	0.30	-1.1	0.8	1
KBR1B_2010-08-26_X_01.dat	23.9	17205	0.44	-0.8	2.2	2
KBR1B_2010-08-27_X_01.dat	24.0	17280	0.33	-1.1	1.5	1

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KBR1B_2010-08-28_X_01.dat   24.0   17280   0.35     -1.8     1.0   1
KBR1B_2010-08-29_X_01.dat   24.0   17256   0.25     -1.0     0.7   2
KBR1B_2010-08-30_X_01.dat   24.0   17280   0.26     -0.8     0.9   1
KBR1B_2010-08-31_X_01.dat   24.0   17280   0.25     -0.8     0.9   1
```

- Following JPL RL00 (yellow) and RL01 (green) L1B products are publicly available. June and July 2002 (red) are not provided due to accelerometer problems.

L1B data	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2002												
2003												
2004												
2005												
2006												
2007												
2008												
2009												
2010												

- The L1B Read software has been updated to accommodate 64-bit machines but the software will also work on 32 bit machines. Please change RELEASE_2008-03-20 to RELEASE_2010-03-31 available at http://podaac.jpl.nasa.gov/grace/data_access.html.
- L1B De-aliasing Products Status (for details see AOD1B Product Description Document):
  - Release 01: Generation has been stopped June 30, 2007.
  - Release 03: Generation has been stopped January 31, 2007.
  - Release 04: Generated until September 3, 2010 and extended to 1976-2000 (see newsletter for December 2008). Quality statistics for Release 04 products are online available at http://www-app2.gfz-potsdam.de/pb1/op/grace/results (follow link "GRACE Atmosphere and Ocean De-aliasing Statistics).
  - Following AOD1B products are publicly available (yellow: RL01, RL03 and RL04; green: RL01 and RL04, blue: RL04 only):

AOD1B	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1976												
…												
1999												
2000												
2001												
2002												
2003												
2004												
2005												
2006												
2007												
2008												

2009												
2010												

Level-2 Product Generation and Distribution:

- Besides historical CSR RL01, GFZ RL03 and JPL RL02 time-series (see below) and more experimental releases which are only available to the GRACE Science Team the following RL04 L2 products are presently available to the public (green: available, yellow: in preparation; red: missing due to accelerometer data problems):

  - **GFZ:** GSM solutions are available for August 2002 until June 2010. July 2004 until October 2004 and December 2006 are also available as constrained solutions (*GK2-*, reason is GRACE 4d repeat orbit and GPS anomaly on GRACE-B, respectively). October 2008 until April 2010 are also available as unconstrained solutions up to degree and order 60 (*GM60*, reason is GRACE 7d repeat orbit). Corresponding background GAA, GAB, GAC and GAD products and calibrated errors (GSM*.txt) have been provided too. Details are listed in the GFZ L2 Release Notes.

GFZ RL04	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2002												
2003												
2004							**GK2**	**GK2**	**GK2**	**GK2**		
2005												
2006												**GK2**
2007												
2008										**M60**	**M60**	**M60**
2009	**M60**	**M60**	**M60**	**M60**	**M60**	**M60**	**M60**	**M60**	**M60**	**M60**	**M60**	**M60**
2010	**M60**	**M60**	**M60**	**M60**	**M60**	**M60**						

  - **CSR:** GSM solutions along with the GAC and GAD background model files and calibrated errors (GSM*.txt) are available for the period April 2002 until June 2010. Details are listed in the CSR L2 Release Notes.

CSR RL04	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2002												
2003												
2004												
2005												
2006												
2007												
2008												
2009												
2010												

- **JPL:** GSM version 4.1 labeled "*JPLEM_0001_0004" along with the GAA, GAB, GAC and GAD background model files and calibrated errors (GSM*.txt) are available for the period April 2002 until July 2010. Details are listed in the JPL L2 Release Notes.

JPL RL04	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2002												
2003												
2004												
2005												
2006												
2007												
2008												
2009												
2010												

- GFZ has stopped RL03 processing (Feb 2003 until Jan 2007 available at the archives. For further details refer to the GFZ RL03 release notes for Level-2 products).
- CSR has stopped RL01 processing. (Apr. 2002 until Dec 2006 available at the archives. For further details refer to the CSR RL01 release notes for Level-2 products).
- JPL has stopped RL02 processing (January 2003 until November 2005 available at the archives. For further details refer to the JPL RL02 release notes for Level-2 products).
- TN05 containing C20 estimates derived from SLR and using GRACE RL04 standards is periodically updated.

Miscellaneous:

- The following acknowledgement shall be added to any new GRACE related publication (paper, poster etc.): *Acknowledgement: We would like to thank the German Space Operations Center (GSOC) of the German Aerospace Center (DLR) for providing continuously and nearly 100% of the raw telemetry data of the twin GRACE satellites.*
- 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" (current status: 519 papers). This list is regularly updated and maybe incomplete. If you are missing a publication please send an e-mail to Frank Flechtner (flechtne@gfz-potsdam.de).
- 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.