GRACE Science Data System Monthly Report
February 2006

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Satellite Science Relevant Events:

- As it has turned out that GPS PRN 17 had still been disabled to be tracked by the IPU (Instrument Processing Unit) on GRACE-2 (only), although on January 26 at 01:51 the IPU has been commanded to enable tracking to PRN 17, this command has been repeated on February 6. Unfortunately follow-up telemetry data showed no success.
- On February 17 at 11:47 and one orbit later the GRACE-2 IPU has been rebooted in order to make tracking to PRN 17 working. This resulted in an intermediate Attitude Hold Mode (AHM). After auto-transition to Science Mode (SM) it could be confirmed from the telemetry that PRN 17 was included into the GPS solution.
- On February 21 the long radio occultation test on GRACE-1 (since January 12) has been completed. The occultation measurements have been disabled and the antenna has been switched off. Preliminary analysis showed no influence on gravity field determination.
- In order to verify the analysis of the January 26 COM (Center of Mass) calibration maneuver, additional center of mass (CoM) calibrations were performed on February 23 simultaneously on both satellites. Therefore a switch from Science Mode (SM) to Attitude Hold Mode (AHM) has been executed at 02:10. The wiggles were performed in the sunlight, at about 20 resp. 80 degrees North: 04:11 (yaw), 05:30 (pitch), 07:19 (yaw), 08:38 (roll), 10:27 (pitch), 13:20 (roll), 15:09 (pitch). The calibrations ended with the switch from AHM to SM at 16:08.
- The GRACE-1 Brouwer mean orbital elements on March 01, 2006 00:00:00 are as follows:

  A [m] = 6843001.202

  E [-] = 0.001883

  I [°] = 89.039599

  The satellites separation was 210 km on March 1, 2006 with a rate of 0.7 km/d. Next maintenance maneuver is needed in more than 2 months.

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:	99.9 %
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.

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_2006-01-27_X_01.dat	24.0	17266	1.38	-4.7	4.3	2
KBR1B_2006-01-28_X_01.dat	24.0	17251	1.31	-4.5	3.8	2
KBR1B_2006-01-29_X_01.dat	23.9	17205	1.26	-5.5	2.9	2
KBR1B_2006-01-30_X_01.dat	24.0	17280	1.34	-3.7	2.7	1
KBR1B_2006-01-31_X_01.dat	23.9	17205	1.50	-6.1	4.4	2
KBR1B_2006-02-01_X_01.dat	23.8	17130	1.52	-4.7	4.3	3
KBR1B_2006-02-02_X_01.dat	24.0	17258	1.46	-6.1	4.2	2
KBR1B_2006-02-03_X_01.dat	24.0	17280	1.16	-4.2	2.5	1
KBR1B_2006-02-04_X_01.dat	23.8	17145	1.43	-3.0	4.5	2
KBR1B_2006-02-05_X_01.dat	24.0	17280	1.18	-3.6	2.6	1
KBR1B_2006-02-06_X_01.dat	23.9	17205	1.48	-5.4	3.7	2
KBR1B_2006-02-07_X_01.dat	24.0	17280	1.55	-6.0	4.3	1
KBR1B_2006-02-08_X_01.dat	23.8	17145	1.38	-5.2	3.5	2
KBR1B_2006-02-09_X_01.dat	24.0	17150	1.48	-5.0	4.4	2

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KBR1B_2006-02-10_X_01.dat  23.9  17165  1.62    -4.5    4.3  3
KBR1B_2006-02-11_X_01.dat  24.0  17261  1.66    -4.4    4.2  2
KBR1B_2006-02-12_X_01.dat  23.8  17096  1.39    -3.0    4.0  4
KBR1B_2006-02-13_X_01.dat  23.9  17224  1.22    -3.9    3.0  3
KBR1B_2006-02-14_X_01.dat  24.0  17260  1.31    -4.2    4.1  1
KBR1B_2006-02-15_X_01.dat  23.8  17096  1.45    -4.5    3.6  4
KBR1B_2006-02-16_X_01.dat  23.8  17101  1.48    -4.0    3.6  3
KBR1B_2006-02-17_X_01.dat  not yet distributed
…
KBR1B_2006-02-28_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 February 28, 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 January 2006 generated, processing of February 2006 will be started soon.

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.
- Investigations ongoing, if and how slopes over land, which are due to the non-mass-conserving OMCT model output in AOD1B RL03 (used in JPL and GFZ L2 products), can be corrected. A note is under preparation.

GRACE Product Distribution:

- No new products have been archived.

Miscellaneous:

- GRACE Science Team Meeting (GSTM) proceedings are available online (http://www.csr.utexas.edu/grace/GSTM).
- 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.