

Federal Agency for Cartography and Geodesy

IGETS Station Report: BH WE MC TC/LP

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Station Bad Homburg (BH)

- Operation of SG044 interrupted due to damage caused by flooding after heavy rain event on March 19th
- Cooling system in operation again, but no gravity signal due to seriously damaged Temperature control and Tilt card
- Reference level most likely lost due to missing temperature control of the sensor (large jumps!)
- Waiting for support by GWR

Wanted! Any spare GEP 3 electronics parts available?

IGETS status:

- ggp-00 / log: until 12/2016
- aux until 04/2016 (until 01/2017 in preparation)



Station Wettzell (WE)

- Operation of SG030 in New Gravity Lab, data send to IGETS
- Operation of SG029 in Old Gravity Lat since Aug 2013, data not sent to IGETS
- Extensive hydrological monitoring by GFZ / Section Hydrology
- iGrav 006 (GFZ Potsdam) outdoor installation from Feb 2015 to Mar 2017

IGETS Status:

- repair code 00 / log: until 12/2016 (SG030)
- aux: until 03/2016





Present hydro-gravimetric instrumentation in Wettzell

Gravimeters:

iGrav-006: GFZ, since 02/2015
SG029: BKG, since 04/2007 (1998)
SG030: BKG, since 06/2010

Hydro-meteo. instrumentation:

- groundwater wells
- lysimeter
- soil moisture clusters
- snow and meteo station





Station Medicina (MC)

- Cooling system stable now since old equipment from TIGO (SG 038 before update to OSG) is used, mainly compressor (APD) improved reliability
- Gap due to failure of the registration system (DAC-3 / Remote Card) from Dec 22 2016 to Jan 23 2017; Reason: Drained backup battery on TERN (CR 2032)

IGETS status

- repair code 00 / log: until 12/2016
- aux: until 10/2016





TIGO /Concepcion (TC)

Registration of SG 038 stopped on Apr 8 2015 due to move of the whole station to La Plata / Argentina





Overland Transportation to La Plata

First ground transportation of an SG over 3100 km cooled down with floating sphere!

Pros:

- No cool-down of the dewar with liquid Nitrogen
- No need in liquid Helium
- No complete initialization, just re-centering, possibility to keep sensor characteristics

Cons:

- Possible changes of the drift behavior due to shocks and vibrations during transport
- Jime limit: 3 weeks hold-time of the Dewar





Success!

- 57 % liquid Helium remained, after 13 days without active cooling!
- Operation at AGGO since Dec. 16th 2015
- No changes of the *main* magnetic field, just centering (extra coil)





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First results after 100 days:



IGETS status repair code 00 / log: until 12/2016

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- SG running stable
- Only short non-linear drift after re-centering
- Low linear trend in residuals indicates low instrumental drift
- No obvious negative impact due to transportation with floating sphere and re-centering
- Non-tidal variations detected by sequential search using interval algebra (Mautz and Petrovic 2005).

period	magnitude	phase
[days]	[nm/s^2]	[hours]
2.0	1.6	13.2
3.5	2.0	13.5
4.4	2.7	20.3
4.8	2.4	17.9
6.1	1.9	20.8
7.3	2.0	10.6
15.3	1.9	19.1
18.5	3.3	21.4
26.8	4.1	15.1
52.3	5.1	20.3