



# GGP Business Meeting

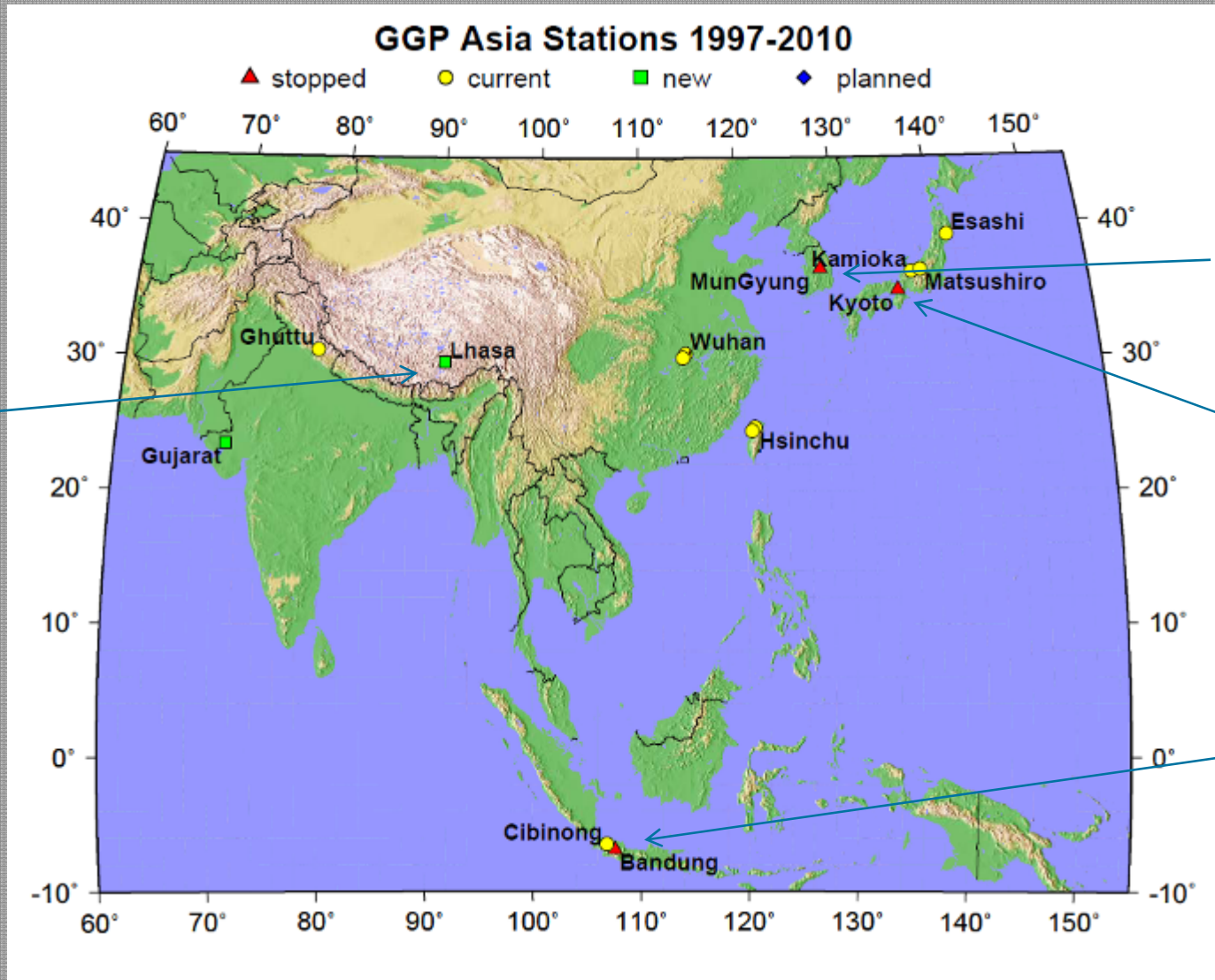
EGU, Vienna, Thursday May 6 2010

David Crossley, Corinna Kroner & Jacques Hinderer

# Agenda

1. Station review – local (Europe) - other (Crossley)
2. Status of ICET data
3. Status of Chile earthquake data
4. ICET database (Barriot)
5. Database support from GFZ (Ritschel)
6. New proposal for GGP data treatment (Palinkas)
7. Improving data distribution models
8. Other Issues
  - a) GGP as IAG service (GGOS)
  - b) AGRV database
  - c) Instrument calibration (scale) factors and history
9. Small Issues:
  - a) BIM back issues on website
  - b) New maps and decimation filters on GGP website
10. Next meeting – 2<sup>nd</sup> Asian SG Workshop – Taipei June 20-22
  1. 2<sup>nd</sup> General Assembly IGFS Fairbanks September 20-22 (abstracts June 1<sup>st</sup>)

# Station review - other (Crossley)



MunGyung  
stopped

Kyoto  
stopped

Cibinong  
new

Lhasa new

# Cibinong, Indonesia - Nov 2008



# Lhasa, China - Dec 2009



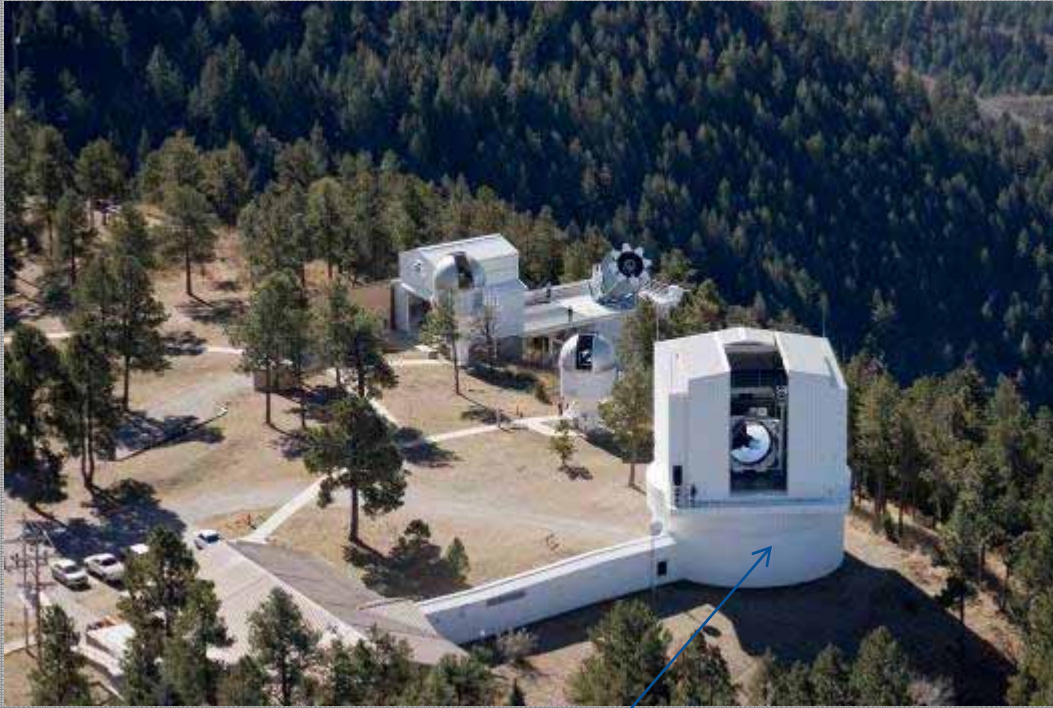


TMGO  
Boulder

Apache  
Point,  
New  
Mexico

Djougou, Sept 2010

# Apache Point – Feb 2009



LLR telescope, aiming for 1 mm precision in lunar distance



# Yebes, Spain – May 2010





# Sutherland South Africa

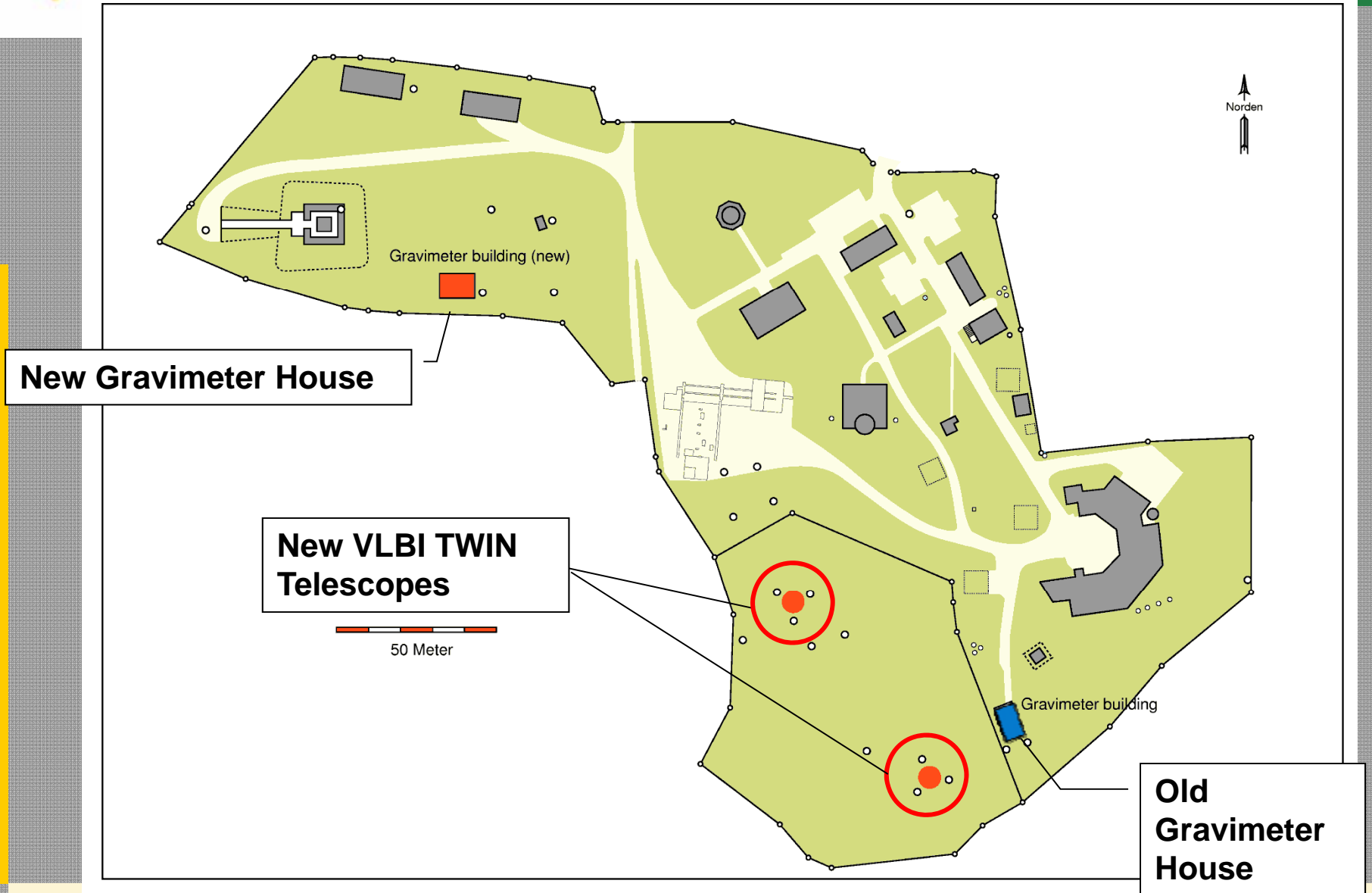


# Sutherland South Africa



## **Wettzell** (Geodetic Observatory):

- Establishment of a new VLBI Twin Radio Telescope, one of which placed near to the Gravimeter House (distance ~25m)
- Construction of a new Gravimeter House to ensure undisturbed gravity observation
- SG030 planned to be moved to new building in Wettzell, parallel observation with SG029 at old site
  
- Hydrological investigations in cooperation with GFZ Potsdam (Güntner, Creutzfeldt)
- Parallel observation at both points intended to verify the local hydrological models



**New Gravimeter House**

**New VLBI TWIN  
Telescopes**

50 Meter

**Old  
Gravimeter  
House**



# New Gravimeter Building in Wettzell



- Separate rooms for AG and SG
- 4 AG pillars
- Groundwater well next to building
- Continuation of hydrology experiment in cooperation with GFZ:
  - TDR-cluster in vicinity
  - Soil moisture sensors installed around SG pier (inside foundation)
- Absolute comparison planned: AG groups are invited to participate



## Medicina (Italy):

- **SG023:** Registration continued, uninterrupted time series since 1997



# Station Conception



TIGO observatory in Concepcion, Chile



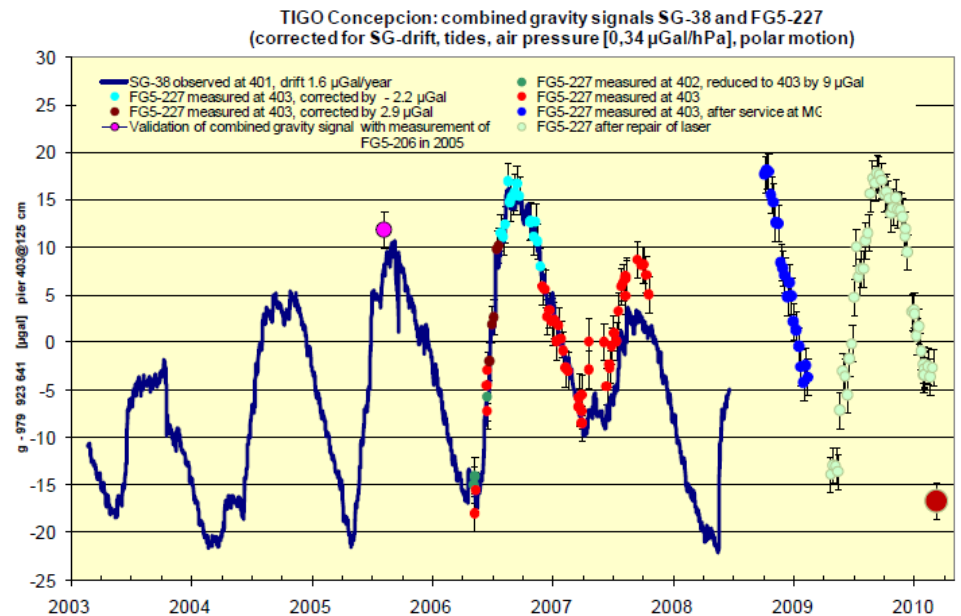
SG038 after re-installation



Fallen-down dropping chamber of FG5-227

## Concepcion (Chile), SG038:

- SG038 re-installed in Dec. 18, 2009 after cooling system upgrade
- Feb 27, 2010 **earthquake** magn. 8,8
- SG tilted, UPS and solar panels kept the SG alive
- Registration continued after sensor re-centering
- AG was dropped to ground
- AG reference measurements in Concepcion, April / May 2010





**TIGO gravity building**

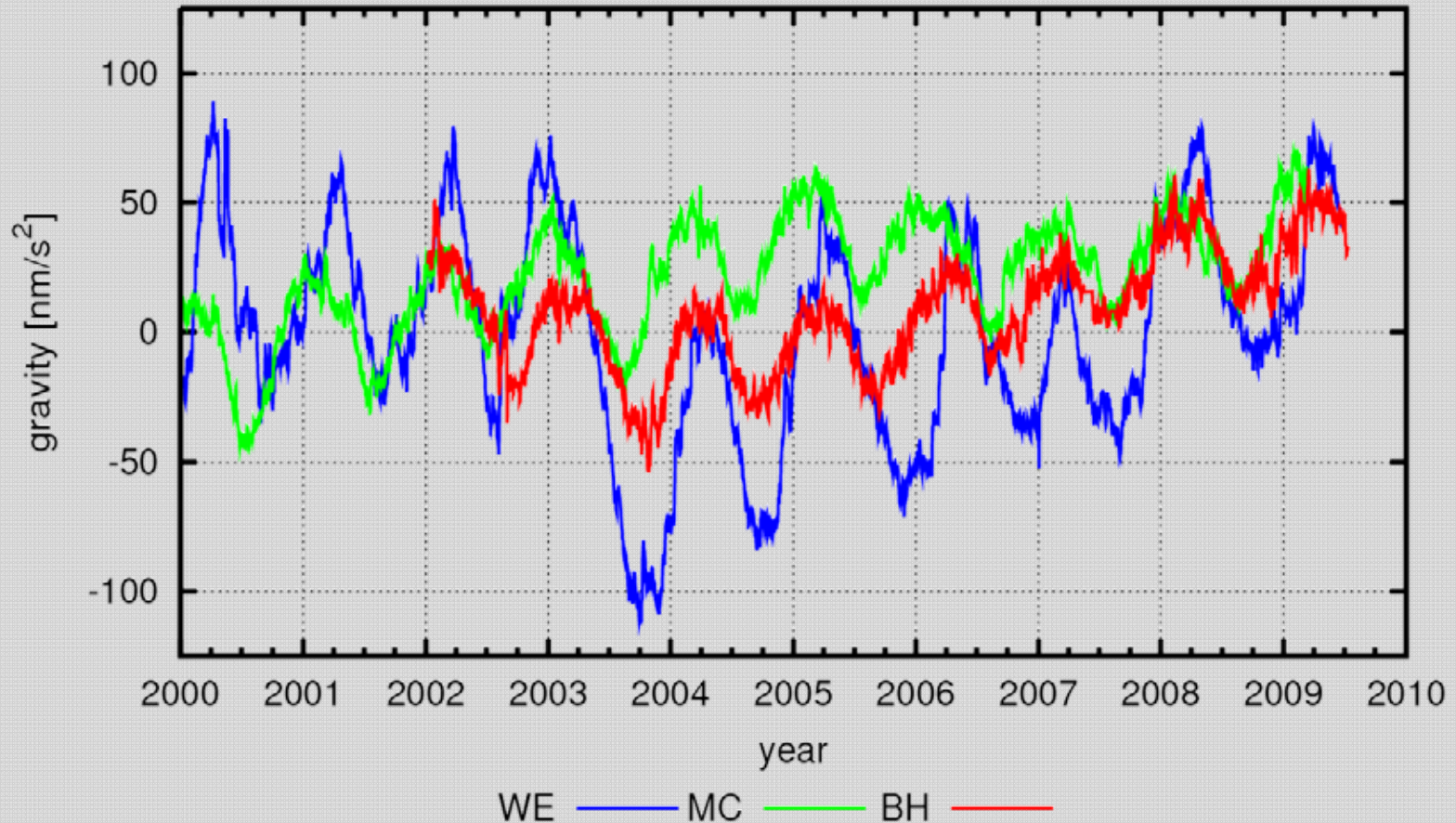
**AG reference measurements in Chile, 28 April, 2010  
SG038, FG5-227, FG5-101**





# Residual Gravity Time Series

SG residual curves



Residual curves for Bad Homburg, Wetzell and MC:

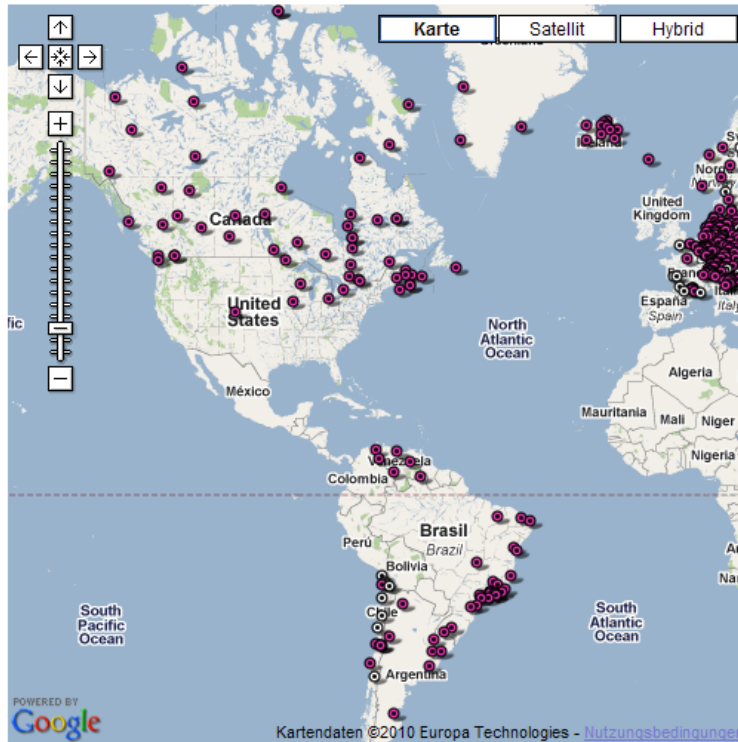
- remarkable similarity of seasonal patterns for MC and BH,
- significantly larger annual and inter-annual variations at station WE.





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[Full Access](#)  
 (login required)  
[BGI Mirror at BGI](#)  
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[agrav@bkg.bund.de](mailto:agrav@bkg.bund.de)  
[bgi@cnes.fr](mailto:bgi@cnes.fr)

## AGrav: Absolute Gravity Database - Meta-Data



### Legend:

-  Station with meta data (station location)
-  Station with gravity information

<http://bgi.dtp.obs-mip.fr>  
<http://agrav.bkg.bund.de>

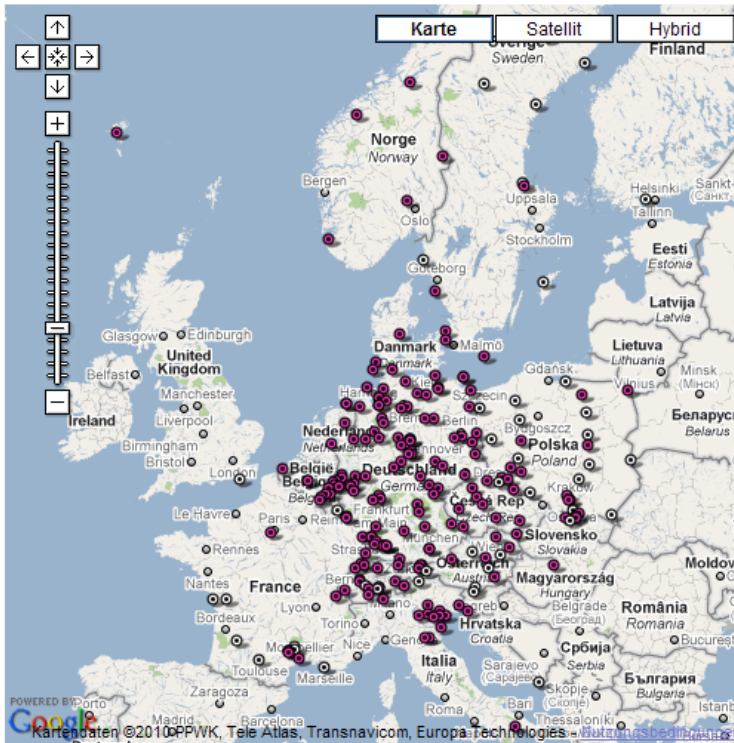
- Official IAG database at BGI for AG data
- Mirrored servers at BKG (Germany) and BGI (France)
- Map based web-interface to access meta-data and/or processing results
- More than 400 stations (Apr. 2010)
- More than 1300 observations (Apr. 2010)
- Two “views” to data:
  - meta-data: free access
  - complete data: restricted to contributing groups



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[agrav@bkg.bund.de](mailto:agrav@bkg.bund.de)  
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<http://agrav.bkg.bund.de>

- Cooperation with GGP foreseen
  - for SG drift determination and SG calibration
  - to determine AG/SG-combined gravity signals
- Database provides the capability to store also AG set results and detailed AG drop data

# Submission Status for BKG Stations

- Delay in data submission caused by changes in electronics and registration system:  
⇒ GWR-Registration; GGP-Filter resulting changes in calibration parameters;
- Wetzell and Bad Homburg up to date now!

	<b>Raw data</b>	<b>Corrected 1</b>	<b>Corrected 2</b>		
	<b>Minutes</b>	<b>Minutes</b>	<b>Minutes</b>		
	<b>GGP-00</b>	<b>GGP-01</b>	<b>GGP-02</b>	<b>LOG</b>	<b>AUX</b>
<b>Wetzell</b>					
<b>SG29-1 Lower</b>	9811-1003			0103-1002	
<b>SG29-2 Upper</b>	9811-1003			0103-1002	
					9810-0909
<b>Bad Homburg</b>					
<b>SG30-1 Lower</b>	0102-0704		0102-0604	0102-0706	
<b>SG30-2 Upper</b>	0102-0704		0102-0604	0102-0706	
					0402-1001
<b>SG44</b>	0702-1003			0702-0908	
<b>Medicina</b>					
<b>SG-23</b>	9801-0312	9801-0903		9801-1002	9801-0909
	0605-1003				
<b>Concepcion</b>					
<b>RT-38</b>	0212-0806		0212-0505	0301-0806	0212-0806

# Status of ICET Data

## Stations up to date:

Strasbourg, Wetzell, Bad Homburg, Moxa, Medicina, Cantley, Pecny, Membach, Metsahovi

## Stations behind a little:

Wuhan, Sutherland, Tigo Concepcion, Hsinchu, Conrad

## Stations behind a lot:

Esashi, Canberra, Ny Alesund, Kamioka, Syowa

## Stations with no data:

MunGyung, Walferdange, Ghuttu, Gujarat, Cibinong

## Stations just started:

Onsala, Schiltach (BFO), Lhasa

# GGP data from Chile earthquake 1s .ggs files

## thank you all – but we would like more!

station name	id	months	status/source
Onsala, Sweden	OS	Feb, March	Hans-Georg Scherneck ( <a href="mailto:hans-georg.scherneck@chalmers.se">hans-georg.scherneck@chalmers.se</a> )
Texas	TX		in prep (crossley - from C. Wilson)
Apache Point, USA	AP	Feb, March	Tom Murphy ( <a href="mailto:tmurphy@physics.ucsd.edu">tmurphy@physics.ucsd.edu</a> )
Bad Homburg, Germany	BH*	Feb, March	2 sensors - H1, H2; separate instrument - H3 / P. Wolf ( <a href="mailto:peter.wolf@bkg.bund.de">peter.wolf@bkg.bund.de</a> )
Wettzell, Germany	WE*	Feb, March	2 sensors W1, W2 / P. Wolf ( <a href="mailto:peter.wolf@bkg.bund.de">peter.wolf@bkg.bund.de</a> )
Medicina, Italy	MC	Feb, March	P. Wolf ( <a href="mailto:peter.wolf@bkg.bund.de">peter.wolf@bkg.bund.de</a> )
Pecny, Czech Republic	PE	Feb, March	<a href="mailto:vojtech.palinkas@pecny.cz">vojtech.palinkas@pecny.cz</a>
Strasbourg, France	ST	Feb	<a href="mailto:jhinderer@eost.u-strasbg.fr">jhinderer@eost.u-strasbg.fr</a>
Metsahovi, Finland	ME	Feb, March	<a href="mailto:heikki.virtanen@fgi.fi">heikki.virtanen@fgi.fi</a>
Conrad, Austria	CO	Feb, March	<a href="mailto:bruno.meurers@univie.ac.at">bruno.meurers@univie.ac.at</a>
Cantley, Canada	CA	Feb, March	<a href="mailto:jacques.liard@nrcan.gc.ca">jacques.liard@nrcan.gc.ca</a>
Wuhan, China	WU	Feb	He-ping SUN ( <a href="mailto:heping@asch.whigg.ac.cn">heping@asch.whigg.ac.cn</a> )

We will request also April, because  ${}_0S_0$  was still active!

# Database Support

GFZ (Bernd Ritschel)

Anything to Report?

Who is registering new stations and contacting Station Managers?

ICET (Jean-Pierre Barriot)

A prototype database interface has been shown, but not distributed

Where is 2<sup>nd</sup> BIM Issue from Jena ETC Meeting 2008?

Progress in providing corrected 1 minute data suitable for tidal analysis has been promised for the 2<sup>nd</sup> Asian SG Workshop in June

Note that Internet connection to UFP is very slow

# Improving GGP Data Distribution

(suggestions for discussion)

## Current Model

Up to 6-month delay for stations to send monthly data to ICET

Up to 1 year delay for open release of GGP 1 minute data

There are major problems with data not being sent

## Improved Distribution

Some data can be released immediately upon receipt

Can we shorten the official delay (by mutual agreement) to a maximum of 6 months before open release?



# Other Topics (suggested discussion)

## GGP as an IAG Service

No progress since IAG Meeting in Argentina – general support but where do we go from here?

Is GGP healthy enough (in terms of receiving enough data) to warrant this step?

## AGRAV Database

What is the current status – any change of policies?

## Calibration constants (scale factors) and instrument history:

How should we document calibration constants for each instrument?

Is the latest calibration constant (scale factor) the definitive one?

should the last one be used on all past data with that instrument?

# Small Points

## Maps:

New maps are available on the GGP website

<http://www.eas.slu.edu/GGP/ggpmaps.html>

## Decimation Filters

Double precision version of filters from 1s to 1 min etc. now on GGP website

## BIM back issues:

Thanks to Michel Van Ruymbeke, All BIM past issues have been scanned to .pdf files

[http://www.eas.slu.edu/GGP/BIM\\_Past\\_Issues/readme.html](http://www.eas.slu.edu/GGP/BIM_Past_Issues/readme.html)

# Next GGP Meetings

**Second Asian SG Workshop, June 20-22, 2010, Taipei, Taiwan.** Organized by C. Hwang. *Abstract submission is now closed.*

[http://space.cv.nctu.edu.tw/SG2/second\\_asia\\_workshop.html](http://space.cv.nctu.edu.tw/SG2/second_asia_workshop.html).

**Western Pacific Geophysics Meeting, June 22-25, Taipei, Taiwan.** *Abstract submission is now closed.* <http://www.agu.org/meetings/wp10/>

**Second International Symposium of the International Gravity Field Service, 20-22 September 2010, Fairbanks, Alaska, USA.** Emphasis on Gravity Field and Gravity Change of the Arctic. *Abstract submission deadline is 1 May (tentative).* <http://www.gps.alaska.edu/IGFS2/>

***Further Business ...?***