



# IGETS Station Report: BH WE MC LP

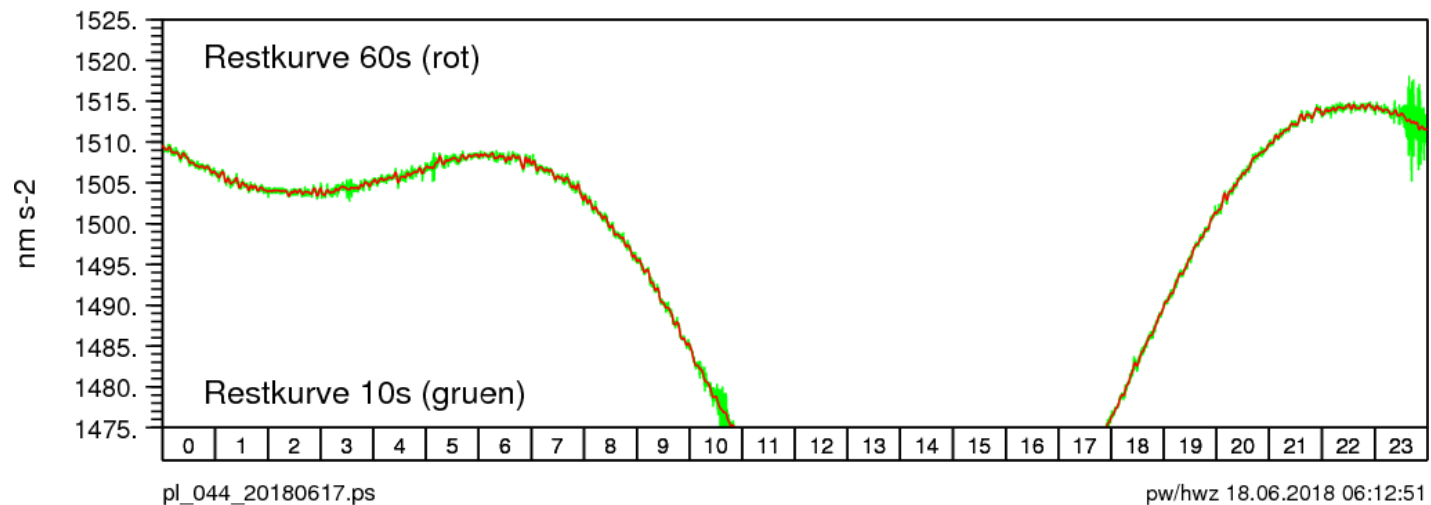
**Hartmut Wziontek**

Bundesamt für Kartographie und Geodäsie (BKG),  
Germany

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# Station Bad Homburg (BH)

- SG044 still not fully operational after damage caused by flooding after heavy rain event on March 19<sup>th</sup> 2017
- Gravity and tilt-Y card replaced in Oct 2017
- Sensor re-initialized in Oct 2017
- Gravity signal back, but scale factor deviation of about 10%, tilt-desensitization not possible
- Remote re-initialization planned
- IGETS status:  
Level1: MIN / STATLOG: until 03/2017  
Level2: CORMIN/HOUR: until 04/2016



# Station Wettzell (WE)

- Operation of SG030 in New Gravity Lab, data send to IGETS
- Operation of SG029 in Old Gravity Lab since Aug 2013,  
**data sent to IGETS in Apr 2018**
- Extensive hydrological monitoring by GFZ / Section Hydrology
- Installation of 4 g-phones by GFZ / Section Hydrology in June 2018 at old gravity lab for testing
- IGETS status:  
Level1: MIN / STATLOG: until 03/2018  
Level2: CORMIN/HOUR: until 04/2016



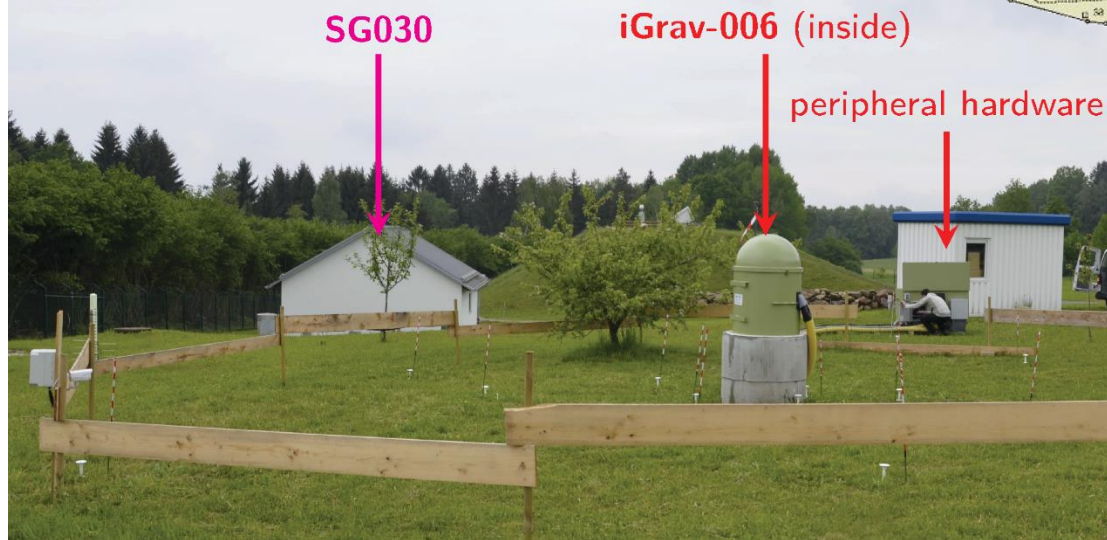
# Station Wettzell (WE)

- Continuation operation of tow dual sphere OSG (SG029 und SG030)
- Field-Installation iGrav-006 of GFZ: Hydrology Feb 2015 - Mar 2017



Distance between iGrav-006 and SG030  $\sim 40$  m

Distance between iGrav-006 and SG029  $\sim 200$  m

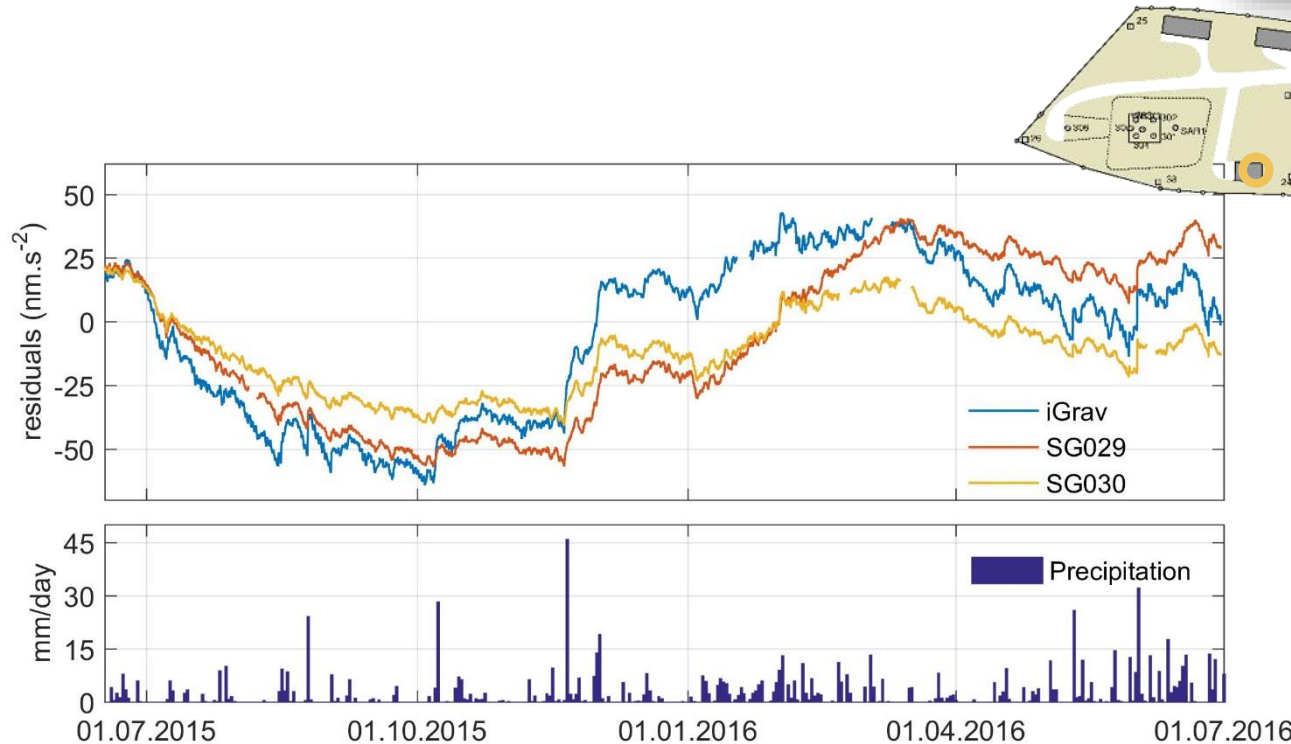


SG locations :

- Inside
- Outdoor (iGrav)

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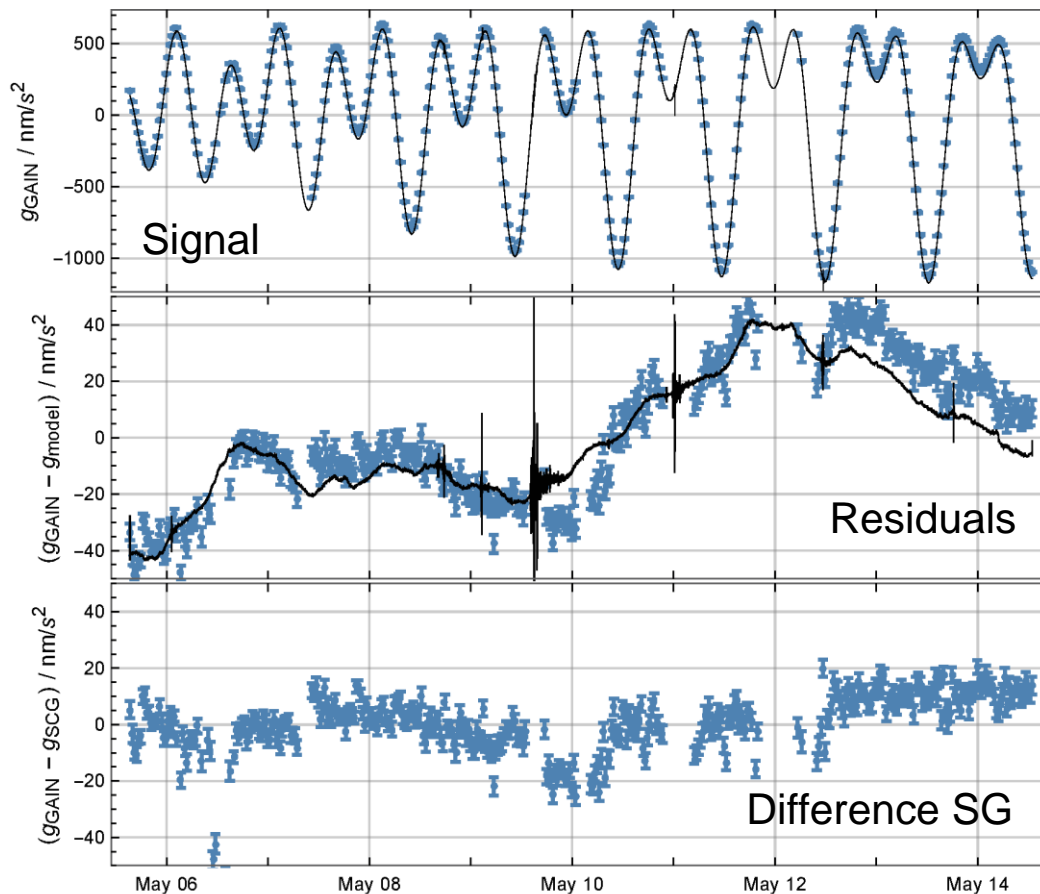


SG locations :

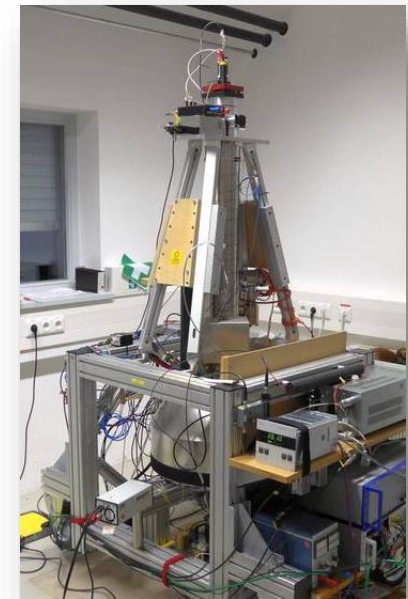
- Inside
- Outdoor (iGrav)



# Atom-Interferometry: GAIN of HU Berlin / QOM



- Campaign in May 2017:
- High stability / repeatability
- Potential for optimizations
- Continuation in Aug 2018 after upgrades/improvements



# Comparison of Absolute Gravimeters at Wettzell

## EURAMET.M.G-K3 Key Comparison and Pilot Study

- First EURAMET comparison at Wettzell
- Pilot laboratory:  
VÚGTK/RIGTC (Czech Republic)
- Establishing a link to CCM.G-K2.2017  
(October 2017 at NIM China) for European  
absolute gravimeters
- Interest of Participation by ~20 teams
- Comparison based on SG over a period of 5  
weeks: 16.04. - 18.05.2018
- Session 4 cancelled - week June 11-15,  
2018 added

Consultative Committee on Mass and Related Quantities  
(CCM)  
*Working Group on Gravimetry  
(WGG)*

**Comparison of Absolute Gravimeters  
EURAMET.M.G-K3 Key Comparison and Pilot Study**

Geodetic Observatory Wettzell (GOW)  
Federal Agency for Cartography and Geodesy (BKG), Germany

**Pilot laboratory**  
VÚGTK/RIGTC (Czech Republic)

**Technical Protocol**  
**Version 3.0**  
**5 April 2018**



# Station Medicina (MC), Italy

- Continuous operation of SG023
- Reconstruction work to stabilize gravity hut with steel beams finalized mid of April
- IGETS status:  
Level1: MIN / STATLOG:  
until 03/2018  
Level2: CORMIN/HOUR:  
until 01/2017

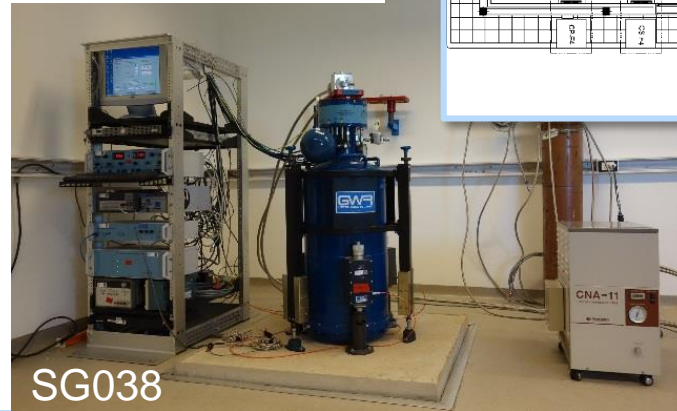
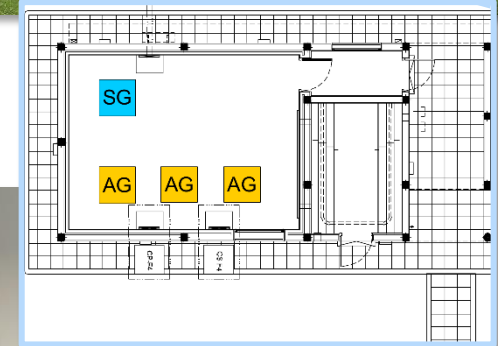
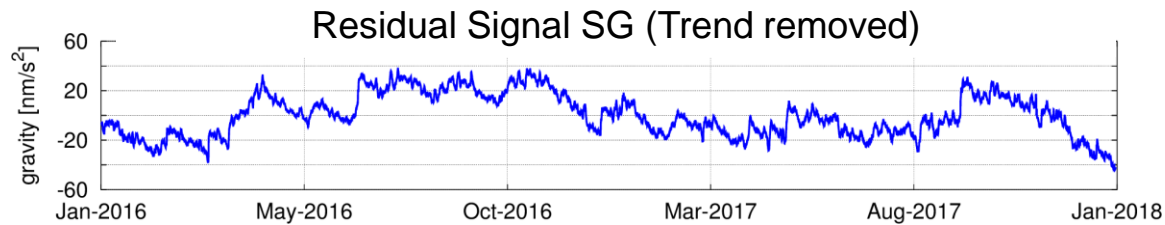




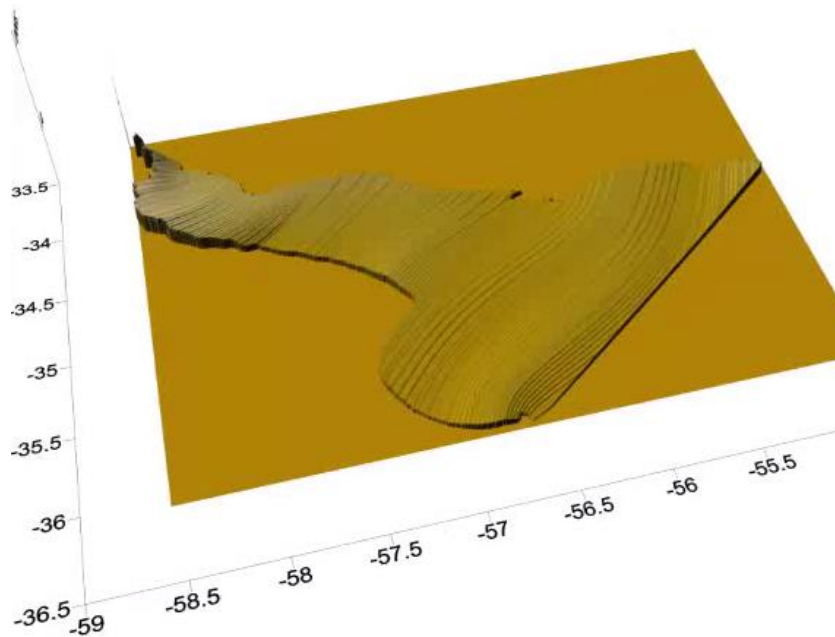


# Station LP (AGGO), La Plata, Argentina

- Continuous operation of SG038: since Dec 2015, coldhead change Nov 2017, unexpected performance drop already in May 2018!
- Absolute gravimeter FG5-227: since Jan 2018
- Development as gravimetric reference station
- IGETS status: Level1: MIN / STATLOG: until 03/2018

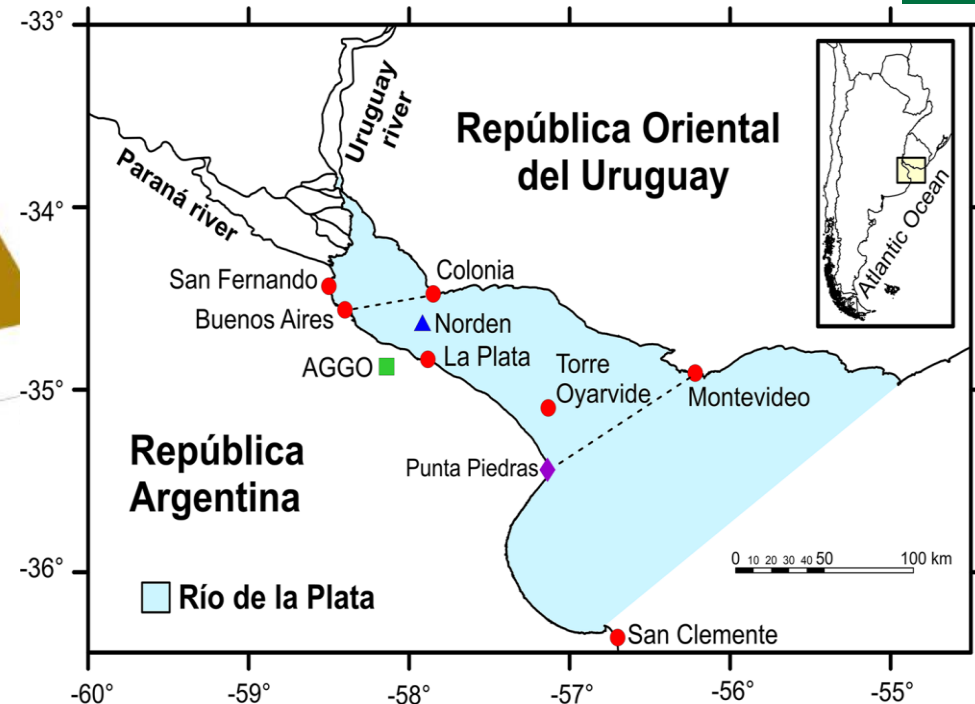


# Loading effects from Río de La Plata



Cooperation with Servicio de Hidrografía Naval Buenos Aires

- Water levels varies up to 3 m
- Forcing by wind
- Modeling based on 7 tide gauges (temporal resolution : 1h)



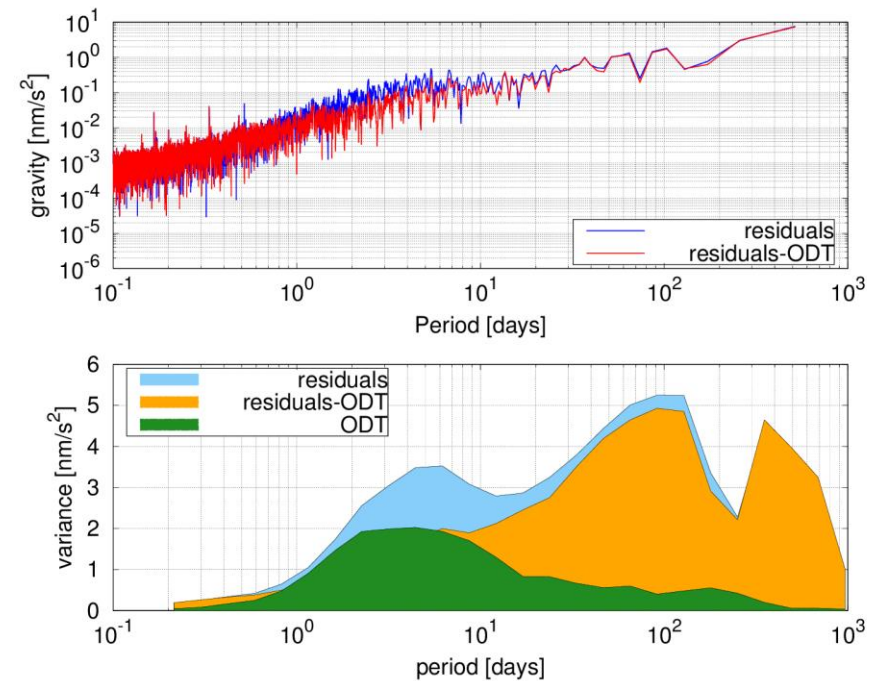
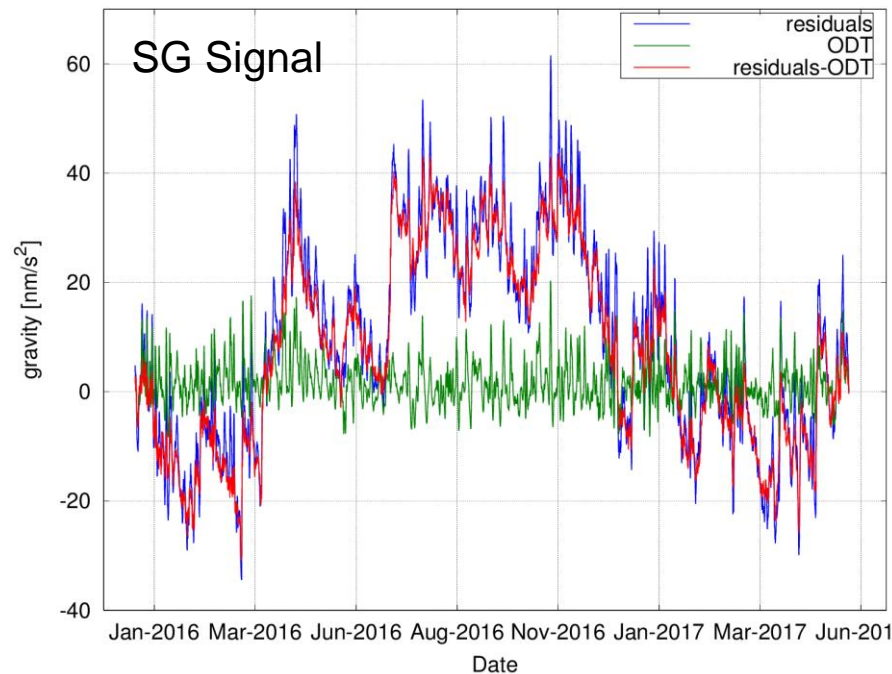
Referenz:

Oreiro F.A., Wziontek H., Fiore M.M.E., D'Onofrio E.E., Brunini C.:

Non-tidal ocean loading correction for the Argentinean-German Geodetic Observatory using an empirical model of storm surge for the Río de la Plata, Pure Appl. Geophys. (2017)

<https://doi.org/10.1007/s00024-017-1651-6>

# Loading effects from Río de La Plata



Efficient reduction - basis for investigation of local water storage changes

- gravity: bis zu 2  $\mu\text{Gal}$
- vertical displacements: up to 1 cm

# Contact

- Peter Wolf was retired by beginning of June
- Contact email address from file header not existing anymore!  
~~peter.wolf@bkg.bund.de~~
- Please use new email address:  
**igets@bkg.bund.de**