Geodesy Division Meeting

Michael Schmidt

Vienna, Wednesday 20.4.2016

European Geosciences Union

Agenda

- Statistics 2016
- Geodesy Sessions 2016
- Call for sessions 2017
- Medals and Awards
  - Vening-Meinesz Medal
  - Outstanding Young Scientist Award (including presentation)
  - EGU Outstanding Student Poster Award in Geodesy
- Structure of the Geodesy Division
- Early Career Scientist Representation
- Other items
- Report of the Early Career Scientist Representative
- AOB

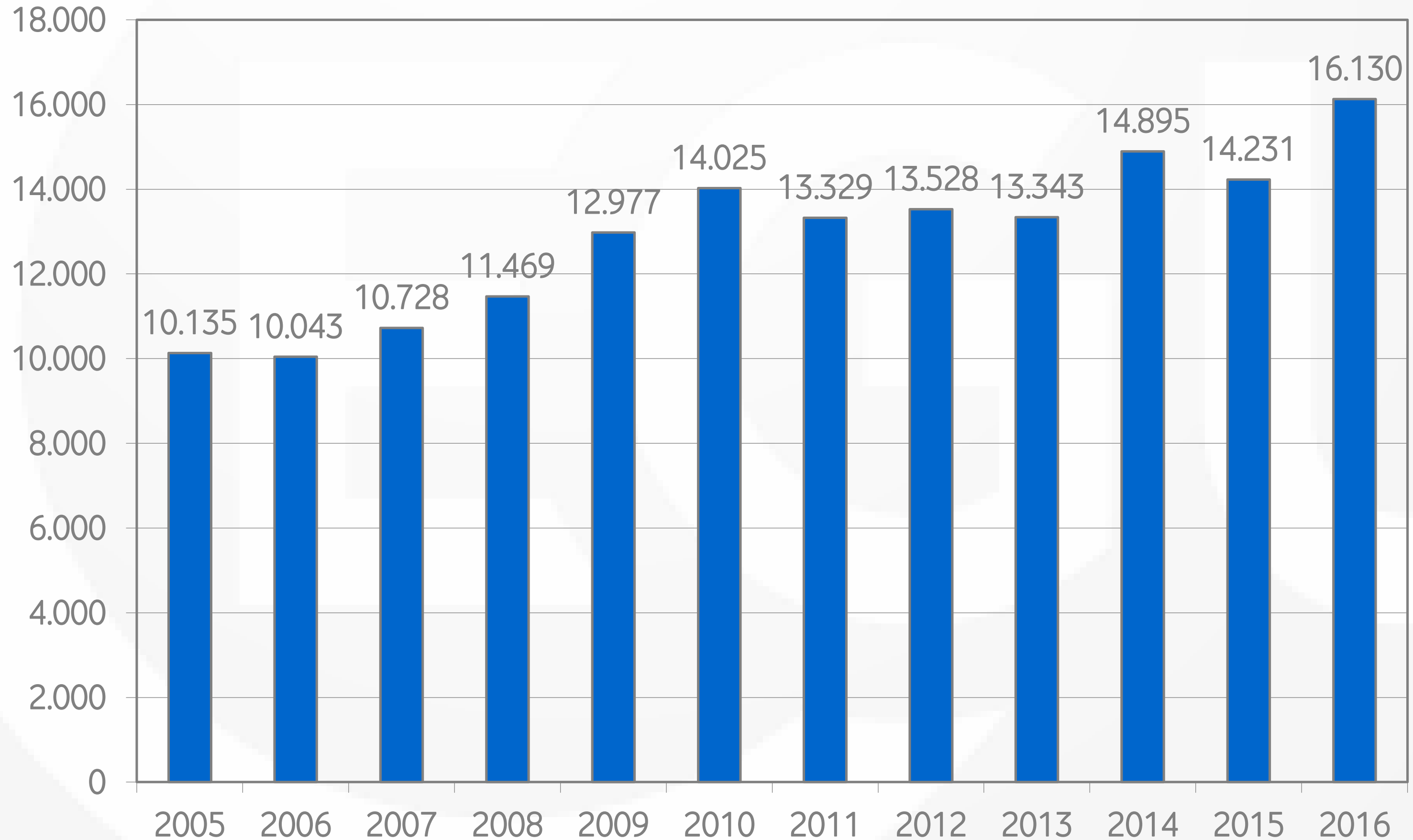
Statistics 2016

As of 14 April, the Assembly 2016 provides:

- **16,130 papers in programme** | +13.34% (2015)
- 4,863 orals | 10,320 posters | 974 PICOs | ratio 30 / 64 / 6
- 619 unique scientific sessions | 321 side events
- **10,988 registrations in advance** (10,943 already paid) | +23.68% (2015)

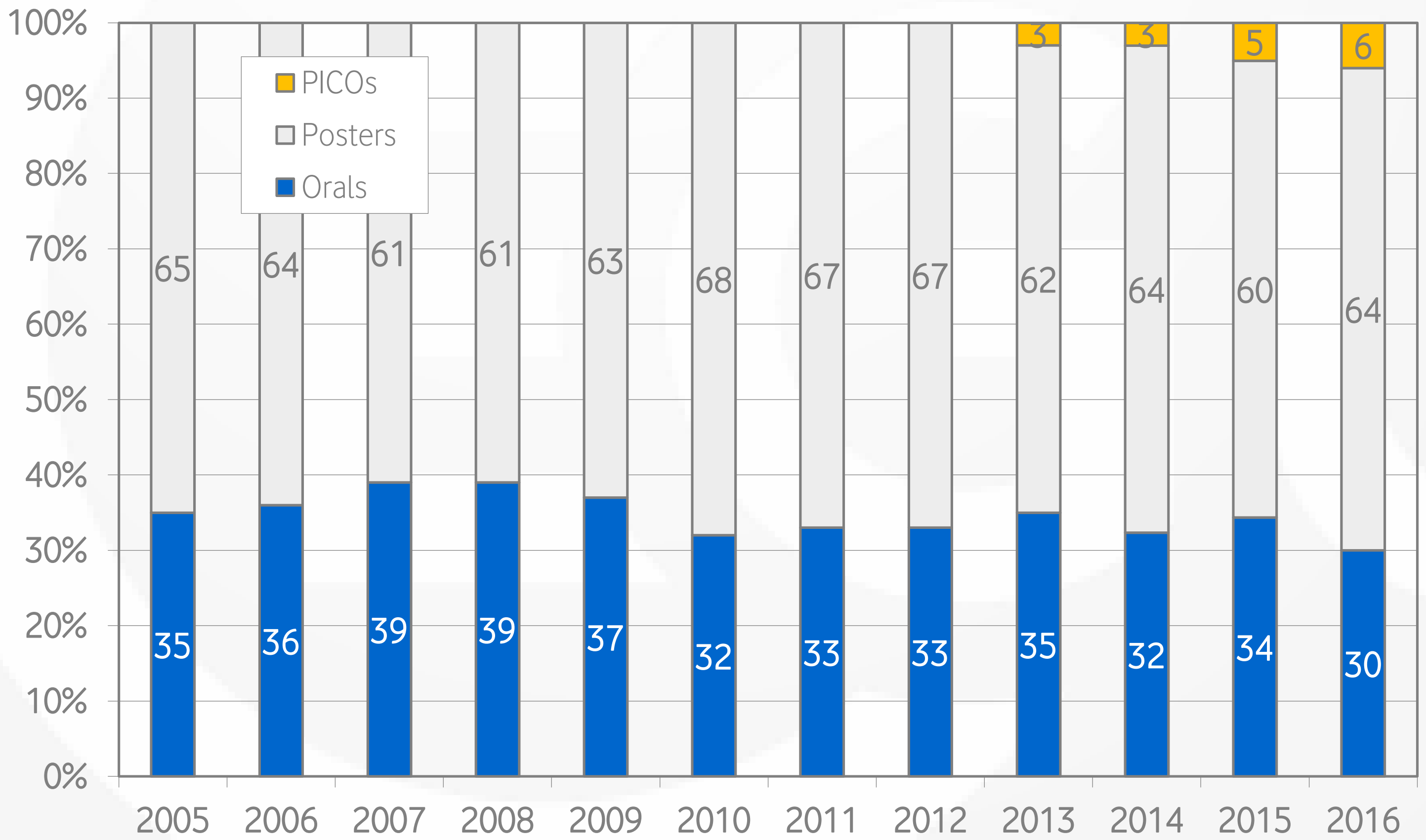
Statistics 2016

Papers in programme 2005–2016



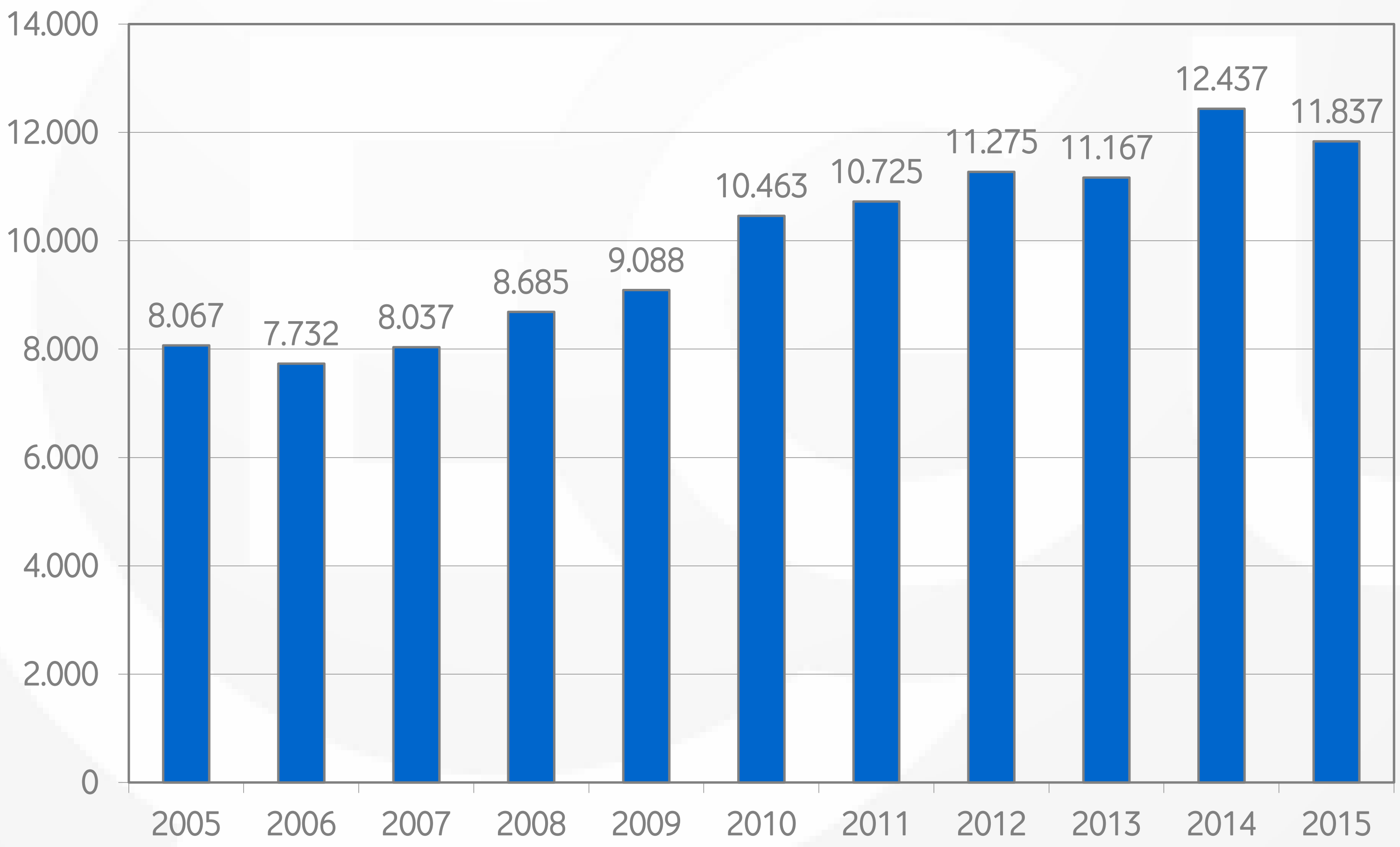
Statistics 2016

Presentation ratio 2005–2016



Statistics 2016

Participants at EGU Assemblies 2005–2014



Geodesy Sessions 2016

G1.1: Recent Developments in Geodetic Theory

G1.2: Mathematical methods for the analysis of potential field data and …

G1.3: High-Precision GNSS Algorithms and Applications in Geosciences

G2.1: The Global Geodetic Observing System: Monitoring Geohazards

G2.2: The International Terrestrial Reference Frame: Elaboration, Usage …

G3.1: Glacial isostatic adjustment: Theory, modelling, observations and related …

G3.2: Spaceborne geodetic sensor observations: From high-frequency …

G3.4: Earth Rotation: Theoretical aspects, observation of temporal …

G3.5: Monitoring and modelling of geodynamics and crustal deformation: …

G4.1: Acquisition and processing of gravity and magnetic field data and …

G4.2: Satellite Gravimetry: Data Analysis, Results and Future Concepts

G4.3: Frontiers of ultra-high degree gravity field modeling, height system unification, …

G5.1: Observation-based modeling of the ionosphere - from Sun to Earth

G5.2: Atmospheric Remote Sensing with Space Geodetic Techniques

G6.1: Open session on geodesy

Geodesy Sessions 2016

G1.1: Recent Developments in Geodetic Theory

G1.2: Mathematical methods for the analysis of potential field data and …

G1.3: High-Precision GNSS Algorithms and Applications in Geosciences

G2.1: The (

G2.2: The I

G3.1: Glaci … ed …

G3.2: Spac

G3.4: Earth

G3.5: Moni

G4.1: Acqu

G4.2: Satel

G4.3: Front … ication, …

G5.1: Observation-based modeling of the ionosphere - from Sun to Earth

G5.2: Atmospheric Remote Sensing with Space Geodetic Techniques

G6.1: Open session on geodesy

Altogether 15 (14) **sessions**

Among them are:

- **7** (6) **co-organized sessions with geodesy lead**
- (5 (4) session with lead by other division)
- **1** (2) **PICO session**

Geodesy Sessions 2016

	Session Title	co-org.	all abstracts 2016	all abstracts 2015	abstracts 2014	differences w.r.t. 2015	oral slots	orals	pico	post.	ratio
G1.1	Recent developments		29	18	27	11	1	6	0	23	0.21
G1.2	Math methods		16	17	21	-1		0	16	0	0
G1.3	GNSS algorithms		45	30	42	15	3	18	0	27	0,40
G2.1	GGOS	x	11	24	25	-13		0	0	11	0,00
G2.2	ITRF		34	32	30	2	2	12	0	22	0,35
G3.1	GIA and related processes	x	25	16	32	9	1	6	0	19	0,24
G3.2	Hydro, ocean, cryo, high-freq.	x	33	32	30	1	2	12	0	21	0,36
G3.4	Earth rotation		19	18	23	1	1	6	0	13	0,32
G3.5	Wegener	x	30	21	0	9	1	6	0	24	0,20
G4.1	Gravity and magnetic field	x	34	29	49	5	2	12	0	22	0,35
G4.2	Satellite gravimetry		43	45	51	-2	2	12	0	31	0,28
G4.3	Ultra-high gravity,relativity		16	0	0	16	1	6	0	10	0,37
G5.1	Ionosphere modelling	x	24	19	16	5	1	6	0	18	0,25
G5.2	Atmosphere remote sensing	x	25	27	30	-2	1	6	0	19	0,24
G6.1	Open session in geodesy		19	5	4	14	1	6	0	13	0,32
			403	333	380	70	19	114	16	273	0,28

Rules for oral slots in 2016, #abstracts around February, 14th:

- 16 (15) abstracts: 1 oral slot,
- 32 (30) abstracts: 2 oral slots,
- 45 (45) abstracts: 3 oral slots

Geodesy Sessions 2016

Conclusions

- Dramatic increase of abstracts w.r.t. the previous years
  - 2015: 21%
  - 2014: 6%
- The number of oral slots (19) does not reflect this evolution sufficiently (only 12% more than 2015). Main reasons are:
  - Limited capacity of the building
  - Extension of security restrictions (mostly because of fire protection)
- Some sessions suffer more from this development as others; the ratio is with an average of 0.28 significantly less than 0.33.
- This year we have
  - one poster only session (also not enough abstracts (15!) for a PICO session)
  - 19 contributions in the Open Session (some people feel that their topics are not covered by the other sessions ⇒ gaps in the session programme?)

Geodesy Session Plan 2016

Time Block	Mo		Tu	We	Th		Fr
1: 08:30-10:00	3.1		1.3	4.2	5.1		3.5
2: 10:30-12:00	3.4		1.3	4.2	5.2	1.2	6.1
12:15-13:15				DM			
3: 13:30-15:00	3.2		2.2	4.1	1.1		*3.5, 6.1*
4: 15:30-17:00	3.2		2.2	4.1	4.3		
5: 17:30-19:00	*3.1, 3.2, 3.4*	1.3	*1.3, 2.1, 2.2*	*4.1, 4.2*	*1.1, 4.3, 5.1, 5.2*		
6: 19:00-20:00				AC	VM		

(light blue)	Room L8 (100 seats, green level)	VM = VM medal lecture (Room L3, 260 seats)
(yellow)	Room 2.20 (130 seats, red level)	DM = Geodesy division meeting (Room 2.20)
(orange)	Room -2.50 (86 seats, brown level)	AC = Awards Celebration (will be announced)
(green)	Room M1 (116 seats, green level)	
(dark blue)	PICO Spot 4 (75 seats)	
(light pink)	Posters	

Call for Sessions 2017

- Skeleton **could** be based on successful sessions at EGU 2016
- **Important**: each EGU member can
  - **propose new** sessions,
  - **modify existing** sessions.
- Proposals send by **mid of September** 2016:
  - no overlapping or similar topics; these should or will be merged
  - **up-to-date** topics
  - **realistic** topics to attract enough contributions
  - **number of sessions** reasonable? (**not too much**: it is always better to have a less number of strong session than a larger number of small session which have to ‘fight’ for an oral slot)
  - are **all important** up-to-date geodetic **topics represented**?
  - is the **title** of a session **general** and **attractive enough** to appeal enough people?

Call for Sessions 2017

Geodesy Programme Committee:

- Division president,
- Deputy presidents,
- Early Career Scientist Representative,
- Possibly other selected geodesists to cover the whole field of geodesy (e.g. former division presidents)

EGU Programme Committee chair: amongst others responsible for the EGU session programme.

Call for Sessions 2017

Additional Remarks

- Think again about proposing **co-organized** sessions – this is the way to strengthen the **interdisciplinary character** of EGU.
- In such a case there should be at least **one co-convener** from the co-organizing sessions/divisions; e.g.:

  A session with Geodesy lead and Hydrological Sciences (HS) as co-organizing division should have the main convener from geodesy and at least one co-convener from HS.
- Consider for the **choice of conveners**:
  - **gender diversity** (i.e. are there female conveners included?),
  - **diversity in countries/institutes**,
  - **inclusion of young (early career) scientists** (especially the established sessions should include young (co-)conveners into the conveners group!!!),
  - a minimum of **three conveners** is desirable.

Medal and Awards

Vening Meinesz Medal

- This medal has been established by the Division on Geodesy in recognition of the scientific achievements of **Vening Meinesz**
- It will be awarded by the EGU for distinguished research in Geodesy, i.e. it is an award on **Union Level**

EGU European Geosciences Union

Medal and Awards

Previous Vening Meinesz Medallists

2016

See next slide!

2015

Geoffrey Blewitt

2014

Reinhard Dietrich

2013

Zuheir Altamimi

2012

Che-Kwan Shum

2011

Harald Schuh

2010

Philip L. Woodworth

2009

Susanna Zerbini

2008

Carl-Christian Tscherning

Medal and Awards

2016 Vening Meinesz Medallist:

Srinivas Bettadpur

The 2016 Vening-Meinesz Medal is awarded to Srinivas Bettadpur in recognition of his outstanding contributions to precise orbit determination and ocean-tide modelling, and his pioneering developments in the field of time-variable gravity field determination from satellite-to-satellite tracking data.

Division Medal Ceremony and the Medal Lecture will be on Thursday, 20.4.2016, 19:00-20:00, Room L3 (green level)

WELCOME

Title: **From GRACE to GRACE Follow-On and Beyond**

Medal and Awards

Division Outstanding Young Scientists Award

- The Division Outstanding Young Scientist Award recognizes scientific achievements in the field covered by the related Division, made by a young scientist.

- It will be awarded by the Division, i.e. it is an award on **Division Level**

Medal and Awards

Division Outstanding Young Scientists Award

The 2016 Division Outstanding Young Scientists Award is awarded to Witold Rohm for his innovative contributions in Global Navigation Satellite System (GNSS) meteorology research, advancing our understanding of meteorological processes that impact on GNSS signals.

Presentation is given now

Title: **GNSS and meteorology where we are heading**

Medal and Awards

Call for Nominations

- Nominations for all the medals and Union Service Award are to be sent to the e-mail address awards.medals@egu.eu by **15 June** of each year (absolute deadline) in pdf format. Only EGU members can submit nominations.
- Nominations for the Outstanding Young Scientist Award are to be sent to the e-mail address awards.medals@egu.eu by **15 June** of each year (absolute deadline).
- See http://www.egu.eu/awards-medals/proposal-and-selection-of-candidates.html for more details
- (reminder will be send by me end of May)

Medal and Awards

Call for Nominations

Additional Information

- “If only one nomination is received for a … Division medal, the … Medals Committee will assess the merits of the candidate and may seek the help of external peers to ensure that the candidate is high profile and deserving.”
- **“The EGU reserve the right to not confer the medal when there is only one nomination.”**
- See http://www.egu.eu/awards-medals/proposal-and-selection-of-candidates.html for more details.

I strongly recommend - as it happened in the last 3 years - to submit more than one nomination for the Vening-Meinesz Medal and the Outstanding Young Scientist Award.

Medal and Awards

Outstanding Student Poster and PICO (OSPP) Award

"In relation with its General Assemblies, the Union presents a number of special awards, such as the Outstanding Student Poster and PICO (OSPP) Awards to further improve the overall quality of poster and PICO presentations and most importantly, to foster the excitement of younger colleagues in presenting their work in form of a poster and/or PICO."

Awarded in the Divisions, based on evaluation of Judges during the poster sessions.

The **awardees receive**

- a conference fee waiver for the next EGU General Assembly and
- are invited to submit a paper free of publication costs to one of the EGU journals.

At the Division meeting of the respective division held at the next General Assembly, each awardee receives an award certificate.

Medal and Awards

2015 OSP Winners

Christoph Bamann

The 2015 Outstanding Student Poster (OSP) Award is given to Christoph Bamann for his poster entitled:

Detector Data Simulation and Filtering Strategy for the European Laser Timing (ELT) Experiment On-board ACES

(Bamann, C.; Schlicht, A.; Hugentobler, U.; Pühl, M.)

Detector Data Simulation and Filtering for the European Laser Timing (ELT) Experiment On-board ACES

Christoph Bamann, Anja Schlicht, Urs Hugentobler, Magdalena Pühl
Fachgebiet Satellitengeodäsie, Technische Universität München

1. BACKGROUND

- Accuracy requirements on frequency and time transfer are continuously increasing.
- Most present satellite based clock comparison systems work in the microwave domain and are based on GPS and TWSTFT (Two-Way Satellite Time and Frequency Transfer).
- Recently, systems such as LASSO (LAser Synchronization from a Stationary Orbit) and T2L2 (Time Transfer by Laser Link) promised even better performance in the optical domain.
- In 2017 the ESA mission ACES (Atomic Clock Ensemble in Space) will bring a new generation of atomic clocks into the microgravity environment of the ISS, which will distribute a stable and accurate time base. In the frame of this mission the European Laser Timing Experiment (ELT) will be conducted.

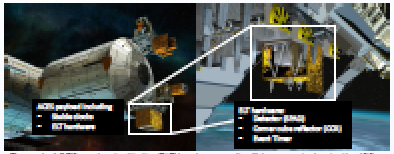


Figure 1: ACES payload with the ELT hardware as it will be mounted onto the ISS. (Courtesy of ESA)

- Clock comparisons and time transfer with picosecond accuracy
- Space-to-ground and ground-to-ground clock synchronization
- Common-view and non-common view modes

2. TIME TRANSFER PRINCIPLE & SIGNIFICANCE OF DATA FILTERING

- In the ELT scenario **temporal information is carried by ultra-short laser pulses**: The SPAD detects laser pulses fired from a satellite laser ranging (SLR) station towards ACES and the CCR reflects these pulses back to the ground station. The detection dates of the SPAD are recorded in the ACES time scale, while the two-way time-of-flight is used for precise ranging.
- **Time transfer and clock analysis is performed based on data triplets** comprising the time of transmission t_{start} of a laser pulse, its time of reception $t_{detector}$ at the ELT detector and its time of reception t_{return} back at the station detector. Accordingly, the synchronization χ_{AS} between the ground clock A and the satellite clock S is

$$\chi_{AS} = \frac{t_{start} + t_{return}}{2} - t_{detector} + \tau_{relativity} + \tau_{atmosphere} + \tau_{geometry},$$

where $\tau_{relativity}$, $\tau_{atmosphere}$, and $\tau_{geometry}$ are correction terms for relativistic effects, atmosphere and the geometrical offset between the CCR and the SPAD, which depends on the position and attitude of the ISS.

- In common-view configuration (figure 2, top) the ISS visibility times at two SLR sites A and B overlap so that time transfer χ_{AB} between the clocks of A and B is given by $\chi_{AB} = \chi_{AS} - \chi_{BS}$. In non-common view mode (figure 2, bottom) temporal information is carried by the ACES oscillator over the distance where the ISS is neither visible for station A nor for station B, i.e. clock stability becomes relevant.
- Apart from the actual signal detection times $t_{detector}$ and t_{return}, which are triggered by the laser photons, **a large amount of noise data is recorded**. This data primarily results from other sources of illumination and detector dark counts.
- Filtering the actual signal detection events is one of the main data processing challenges of the ELT data center, which is hosted by our institution. **The present work focusses on ELT detector data filtering**, as filtering two-way data is a standard task in SLR.

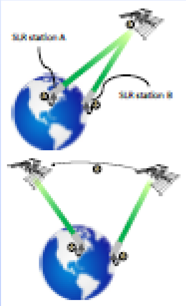
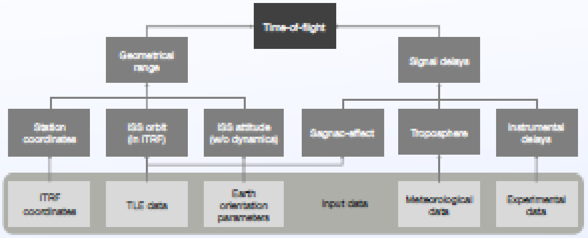


Figure 2: Time transfer principle in common-view (top) and non-common view mode (bottom).

3. DETECTOR GATING & LASER PULSE ARRIVAL TIMES

- To allow for high precision time transfer the ELT detector works in **single photon mode**. This mitigates detector time-walk effects facilitating higher timing precision.
- **Gating the detector and applying a suitable data processing strategy** is necessary to cope with the high noise levels in single photon mode. The ELT detector is periodically activated (gate open) w.r.t. the local ACES time scale. The gates are opened shortly before periodic time events to account for detector dead time and too early arriving laser pulses.
- SLR stations must adjust the transmission times of the laser pulses so that they arrive at the detector when the gate is open. Initially, **pulse propagation times are computed using comparatively inaccurate orbit predictions**. These predictions will be available as CPF files with errors of less than one hundred meters.
- During an ISS pass the imprecise orbit predictions can be improved in real-time using the precise two-way ranging data. We model the time-of-flight of a laser pulse as follows:



4. DETECTOR DATA SIMULATION

- **The detector noise statistics are derived from external data of an indoor experiment**, which used one of the ELT detector package breadboard versions to precisely measure the time delays between detector activation and registration of signal or noise photons.
- We fit exponential functions to the histograms of the noise delay data to obtain **analytical noise probability densities**. These are used to simulate the random noise events of the ELT detector. The decision whether **a signal or a noise detection is simulated** is made randomly according to a Bernoulli distribution.
- Ideally, the laser pulses should arrive exactly at the periodic time events about which the detector gates are centered. **Deviations of the actual from the ideal pulse transmission times** (e.g. due to inaccurate knowledge of the ISS orbit) **and the pulse width itself cause deviations from these ideal times of arrival**, which are also considered in our simulations.
- Figures 3 and 4 show simulated detector data for different background noise levels and orbit prediction errors (time and range bias) broadening and shifting the signal peak.

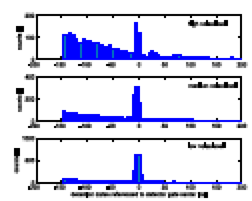


Figure 3: Simulated detection dates of one ISS pass for a small orbit error and different noise levels.

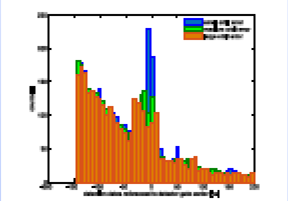


Figure 4: Simulated detection dates of one ISS pass for a high noise level and different orbit errors.

5. DETECTOR DATA FILTERING STRATEGY

- Detector data filtering refers to identifying the ELT detection dates, which originate from laser photons, among extensive noise. In a first step, we reference the recorded ELT detection dates to UTC.
- The **detection date residuals** (observed detection date minus computed detection date) serve as the basis upon which we decide whether a detection date belongs to a signal or noise detection event. To compute the detection date of a laser pulse its time-of-flight must be determined. Therefore, **we improve the orbit data by fitting corrections** that are quadratic in time in the along-track and radial directions based on the precise two-way ranging data (see figure 5). The association of transmit times and signal generated detection times is unambiguous.
- To remove most of the noise we **fit an exponential curve to the histogram of the residuals**. Prior to that, we "dilute" the histogram using wider bins and rescale it to reduce the impact of the signal peak on the fit. We only keep residuals with original histogram bars that are above that curve, as the rest is most likely noise data.
- Finally, we **iteratively remove residuals that deviate more than 2.3 times the standard deviation from the histogram mean value.** After each iteration we remove the linear trend from the remaining residuals to keep the resulting histograms Gaussian-like.

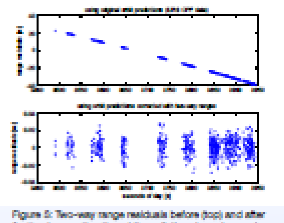


Figure 5: Two-way range residuals before (top) and after (bottom) correcting the orbit predictions based on real two-way ranging data from T2L2.

6. VALIDATION OF THE FILTERING STRATEGY

- The presented filtering strategy worked well for our simulated data.
- For validation we tested our algorithms with real T2L2 data.
- Orbit predictions were used to see how our strategy performs in quick-look analyses.
- Figure 6 shows the filtered one-way residuals.

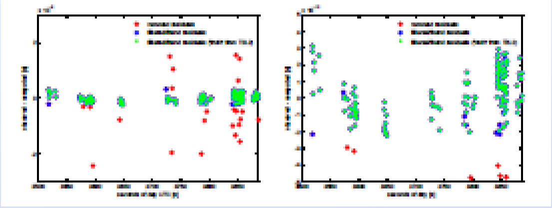


Figure 6: Results of filtering T2L2 detector residuals using the presented filtering scheme. The right plot shows details of the results indicating how well our strategy works.

7. CONCLUSION

Identifying the time triplets "ground-transmission", "space-detection", and "ground-reception" is crucial for time transfer based on ultra-short laser pulses. The identification of two-way time stamps among extensive noise is a standard task in SLR as opposed to identifying one-way time stamps of the new ELT space detector. Working in single photon mode in presence of strong background illumination is challenging. Hence, we simulated data for the ELT space detector based on experimentally derived noise statistics and TLE orbits. We presented a strategy for ELT detector data filtering, which can cope with our simulated detector data as well as real data from the T2L2 experiment.

EGU European Geosciences Union

Medal and Awards

2015 OSP Winners

Wolfgang Szwillus

The 2015 Outstanding Student Poster (OSP) Award is given to Wolfgang Szwillus for his poster entitled:

Depth sensitivity of satellite gravity gradients inferred from a density model of North America

(Szwillus, W.; Ebbing, J.)

Depth sensitivity of satellite gravity gradients inferred from a density model of North America

Wolfgang Szwillus (szwillus@geophysik.uni-kiel.de) and Jörg Ebbing
Kiel University, Department of Geosciences, Germany.

C | A | U
Christian-Albrechts-Universität zu Kiel
Mathematisch-Naturwissenschaftliche Fakultät

This poster participates in OSP
Outstanding Student Poster Contest

Introduction

Surface topography can be compensated isostatically (by the lithosphere) or by dynamic topography (viscous flow below the lithosphere). In both cases compensation is ultimately caused by density anomalies. Thus, information about the deep density structure of the earth is crucial.

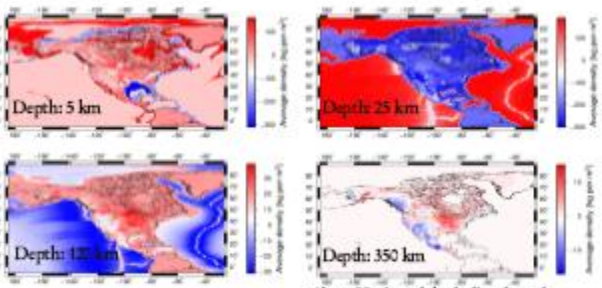
Using a model of lithospheric density, observed gravity can be stripped of the lithospheric contribution. However, the residual gravity field after stripping reflects not only sub-lithospheric sources, but also any errors in the model. Since both errors and sub-lithospheric sources can have long wavelengths, they can not be separated by filtering.

We investigate if the components of satellite gravity gradients differ with respect to their depth sensitivity. This would open up a new way of separating sources from different depths.

Density model

We constructed a density model of the North American continent and surrounding oceans (see tables)

Model property	Value
Horizontal resolution	1 ° (about 110 km)
Vertical resolution	5 km
Max depth	500 km



Above: Horizontal depth slices through the density model at four different depths

Below: Table of data used to construct the density model

Data	Source	Conversion to density
Crustal model NACr14	Tesauro et al. 2014	$\rho = a(z)\, v_p(z) + b(z)$ (Zoback and Mooney 2003)
Sediments	Kaban (pers. comm.)	$\rho(z)$ from in-situ measurements
Ocean floor age	Müller et al. 2008	$\rho(z) = (1 - \alpha\, T(z))\rho_0$, T from plate-cooling model
P-wave tomography	Burdick et al. 2014	$\delta\rho_{rel} = 0.4\, \delta v_{rel}$. Use reference model ak135 (Kennett et al. 1995): $\rho = (1 + \delta\rho_{rel})\, \rho_{ak135}(z)$

Forward calculation

We calculated the gravity response of the density model

- on a 1°x1° degree grid
- at a height of 225 km (GOCE satellite).

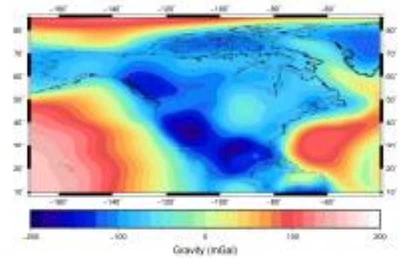
The model geometry is represented using tesseroids.

Gravity effect of each tesseroid is calculated using adaptive numerical integration.

Below: The Goce Satellite (ESA)

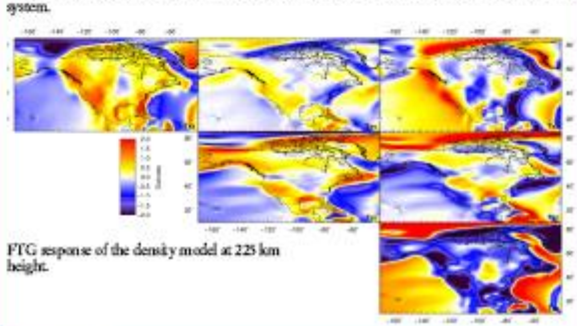
Above: Tesseroids arise naturally, when a model is given as a regular grid in geographic coordinates.

Right: Gravity response of the density model at 225 km height.



FTG calculation

The full gravity gradient tensor was calculated. We use an East-North-Up (ENU) coordinate system.



FTG response of the density model at 225 km height.

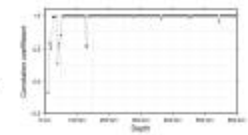
Sensitivity estimation

Idea

- Use density model to determine how much signal comes from each depth
- Compare the different amounts of signal for the different gravity (gradient) components

Merging

- Successive depth layers with similar gravity effect should be merged into one for sensitivity estimation.
- The correlation coefficient can be used to assess the coherency of successive layers.
- Layers with correlation > 0.99 will be merged into one layer



Above: Correlation coefficient of vertical gravity effect of successive layers

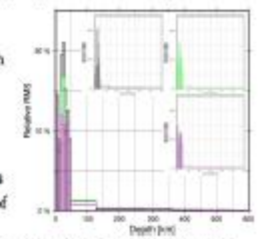
Sensitivity calculation

For each gravity (gradient) component

1.) calculate RMS of gravity from each depth layer k, P_k
2.) calculate total RMS P
3.) divide P_k by P, to get *relative RMS amplitude*

Results for selected components

- > 95 % of the signal comes from depths of less than 50 km
- Vertical gravity (black) and vertical gravity gradient (green) are very sensitive to crust-mantle boundary
- xy-gradient (pink) has increased sensitivity to structures within the crust



Above: Depth sensitivity of vertical gravity (black), vertical gravity gradient g_{zz} (green) and xy-gradient (pink)

Conclusions

Do satellite gravity gradients components differ with respect to their depth sensitivity?

» Yes: The purely horizontal gradient components are most sensitive to shallow structures. The vertical gravity gradient (gzz) behaves more like vertical gravity. Remaining gradient components fall somewhere between these end-members.

How strong is the gravity field predicted by mantle tomography?

» About 1% of total signal response comes from mantle density anomalies.

Next steps?

» Optimize density model with respect to gravity gradients
» Include petrology of upper mantle for velocity to density conversion

References

M. Tesauro, M. K. Kaban, W. D. Mooney & Cloetingh (2014) NACr14: A 3D model for the crustal structure of the North American Continent, Tectonophysics.
B. Burdick, [illegible] (2014) Model Update January 2013: Upper Mantle Heterogeneity beneath North America from Travel-Time Tomography with Global and USArray Transportable Array Data, Seismological Research Letters, January/February 2014.
R.D. Müller, M. Sdrolias, C. Gaina, W.R. Roest (2008) Age, spreading rates and spreading asymmetry of the world's ocean crust, Geochem. Geophys. Geosyst.
M. L. Zoback, W. D. Mooney (2003) Lithospheric Buoyancy and Continental Intraplate Stresses, International Geology Review

Structure of Geodesy Division and upcoming elections

President:

Michael Schmidt (2013-2017)

- my second 2-years **term will end** with the EGU GA 2017
- a second **re-election** is **not possible**
- thus, we search for **candidates** (if you are interested please contact me)
- the **nomination** will be in **September 2016** and the **election** of the next EGU division presidents will be in **November 2016**

Deputy presidents:

Johannes Böhm (2013-2017), Adrian Jäggi (2015-2017)

- Johannes Böhm's **term** of 4 years will **end** with the EGU GA 2017
- **next appointments** during the EGU GA 2017 by the **next Division president**

Structure of Geodesy Division

Early Career Scientist (ECS) Representative: was appointed for a term of 2 years, i.e. the period 2014-2016

- Roelof Rietbroek was appointed for 1 further year (2016-2017)
- It is desirable to build up a **team of early career scientists** within the geodesy division
- The role of the ECS Representative is to build the link to EGU
- Please let me and Roelof know if you are interested in joining the team
- You must fulfill the requirements for Early Career Scientists, namely:
  - An Early Career Scientists (ECS) is an undergraduate or postgraduate (Masters/PhD) student or a scientist who has received his or her highest degree (BSc, MSc, or PhD) within the past seven years,

Structure of Geodesy Division

According to §7.5: Besides Division President and Deputy Presidents each division may have other **division officers**.

Currently we have (see our geodesy webpage http://g.egu.eu, has to be updated urgently)

- Programme committee
- Officers for Awards & Medals
- Members of the OSPP committee
- Early Career Scientist Representative

We further need:

- Webmaster

Approval of the Medal and Award committees

Vening-Meinesz Medal committee:

- four past medalists + *ex officio* Geodesy Division President and EGU Award committee chair (both non-voting). Second-year medalist is chairing the committee
- 2017 committee members:
  - *Srinivas Bettadpur* (1),
  - *Geoff Blewitt* (2, chair),
  - *Reinhard Dietrich* (3),
  - *Zuheir Altamimi* (4),
  - ex officio: *Michael Schmidt*, Award committee chair

Committees approved unanimously by the Division meeting

Outstanding Young Scientist Award:

- Division president + deputy presidents + latest medalist

Outstanding Student Poster and PICO Award:

- Division president + deputy presidents

Other items

EGU Theme 2016: Active planet

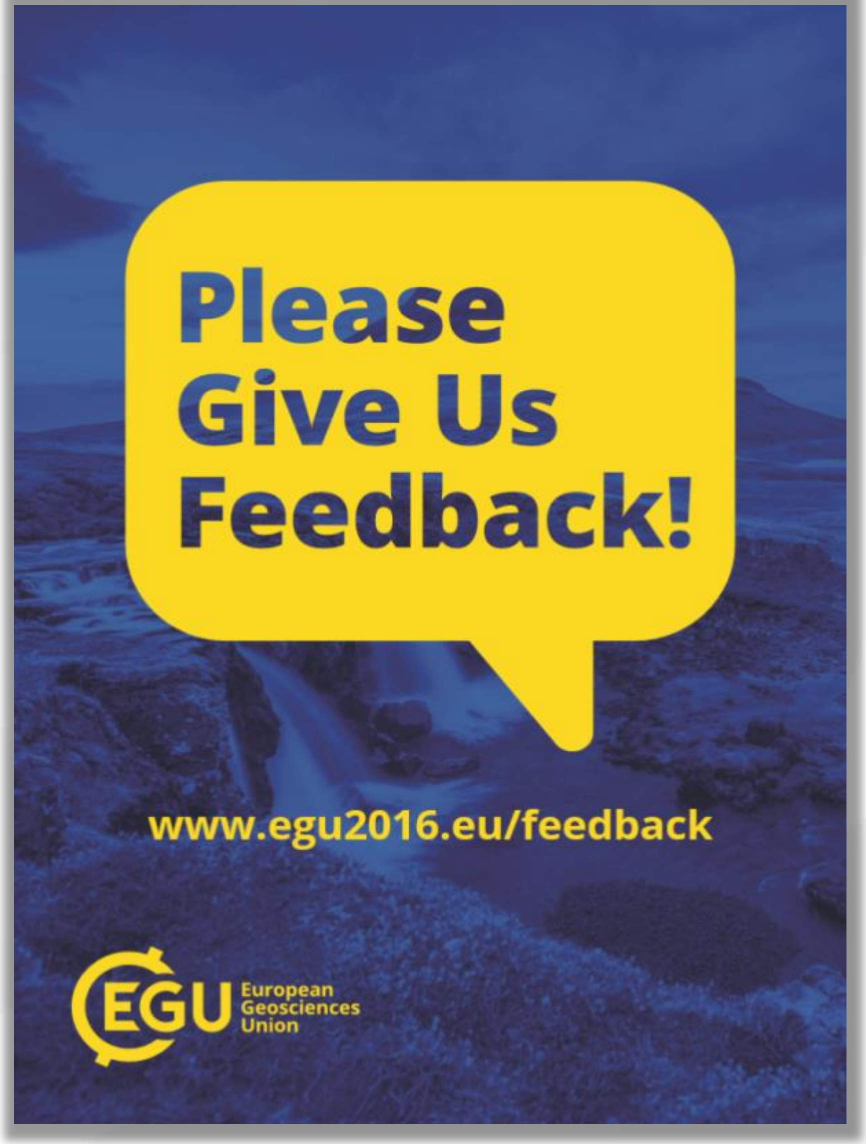
Special events:

- dedicated lectures,
- join-in activities,
- photo competitions,
- movies presented in the Geo Cinema.

Question which has to be answered from the Geodesy EGU members: **Do we want to have a theme for the EGU 2017?**

Other items

- Conveners should complain about the **sizes of the lecture rooms** (if necessary).



Communication Activities at the General Assembly

EGU Today

- EGU Today is a daily newsletter highlighting interesting workshops, lectures and GeoCinema screenings, amongst activities at the Assembly
- Paper copies will be distributed daily and are available to download at **www.egu2016.eu/egu_today**

Blogs

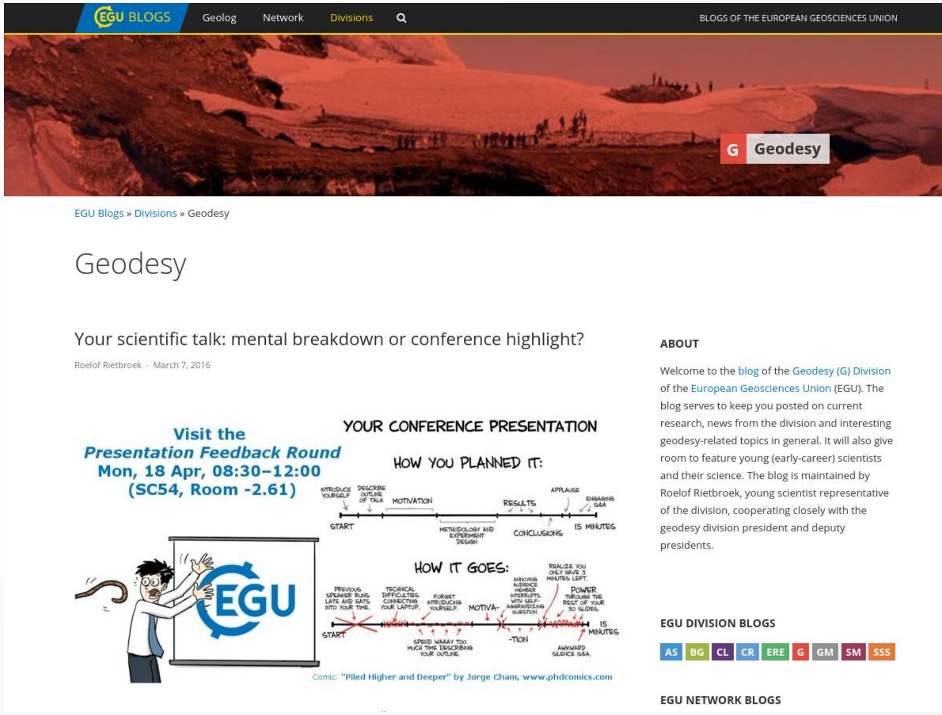
- GeoLog, the EGU Blog Network & EGU Division Blogs will be sharing great sessions, research, interviews and more throughout the Assembly
- Follow them at **geolog.egu.eu** and **blogs.egu.eu**

Social Media

- Sessions will be advertised on Twitter (**@EuroGeosciences**) and Facebook (**European Geosciences Union**)
- Participants can ask questions & keep updated by following **#EGU16**

Report of the ECS Representative

- Need new ECS rep in 2017!
  - Regular skype meetings
  - Topics: promotion of ECS & events, awards, ECS definition, blogs, evaluating feedback, reach out to AGU
- ECS activities as team effort:
  - EGU blog
    - http://blogs.egu.eu/divisions/g/
    - Contributions welcome
  - Organization of events
    - Short course on presentation feedback last Monday
  - Do you want to get involved?



Any other business