

IAG Joint Working Group 2.1
“Relativistic Geodesy: First steps towards
a new geodetic technique”

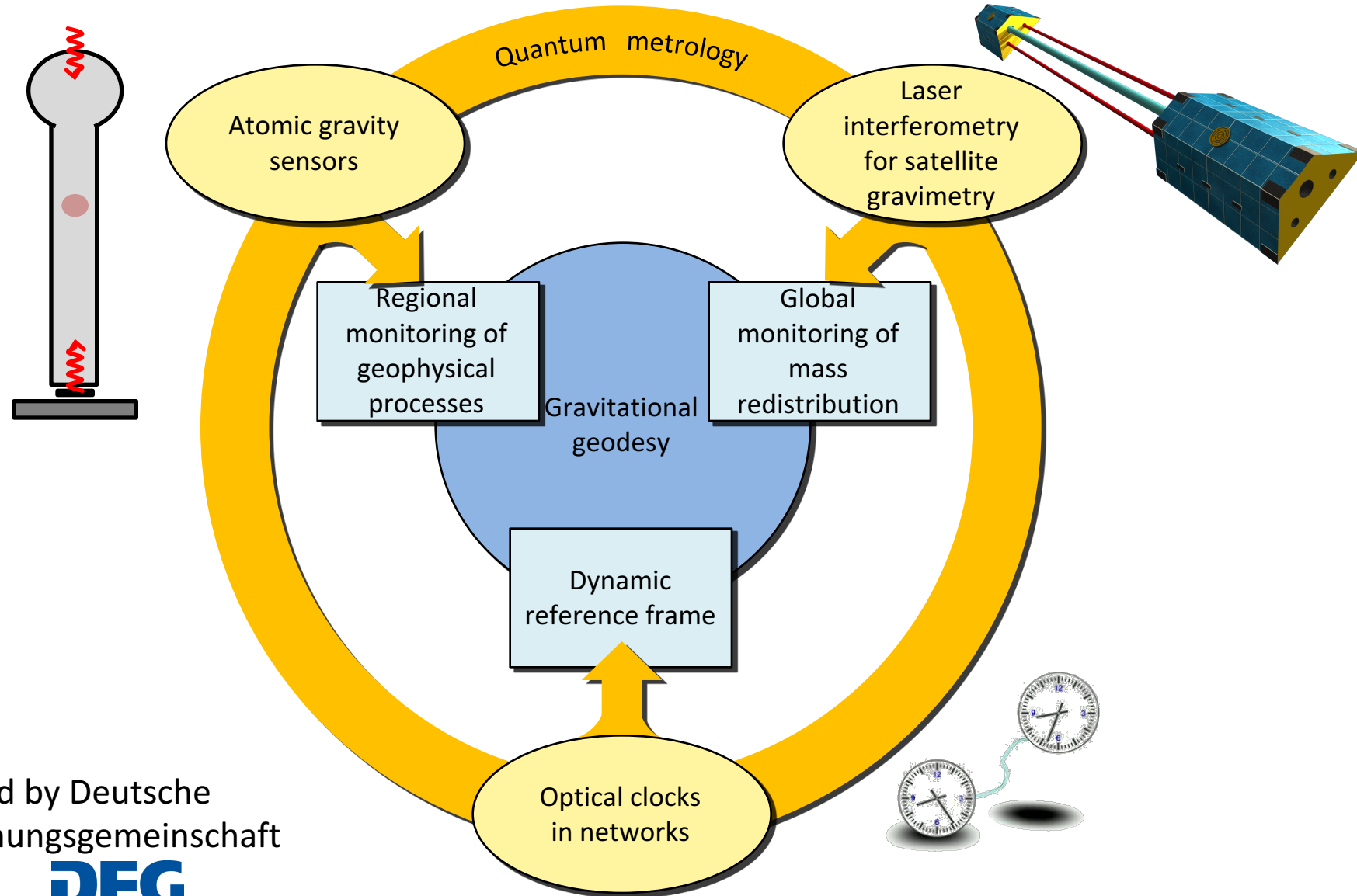
1. Meeting and Workshop

May 15-16, 2017

Leibniz Universität Hannover, Germany



Hannover Collaborative Research Center "Relativistic Geodesy and Gravimetry with Quantum Sensors (geo-Q)"



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Forschungsgemeinschaft
DFG

AGENDA

Monday, May 15, 2017

10:00	Welcome, organizational matters	Flury, Petit
	Theory	Lämmerzahl, Kopeikin , others, e.g., Müller, Mazurova, Hackmann
	Reference frames, geoid, mean sea level, height networks, time	Defraigne, Hughes , others, e.g. Petit, Kopeikin, Flury
13:00	Lunch	
14:00	Reference frames, geoid, mean sea level, height networks, time <i>cont'd</i>	Defraigne, Hughes , others, e.g. Petit, Kopeikin, Flury
	Classical gravity potential determination	Müller / Denker , others, e.g. Flury, Hughes
15:30	Coffee Break	
16:00	Classical gravity potential determination	Müller / Denker , others, e.g. Flury, Hughes
	Frequency transfer, fiber links, campaigns	Grosche, Pottie, Calonico , others, e.g. Lisdat, Schmidt
18:00	Adjourn	
19:00	Dinner	

Tuesday, May 16, 2017

08:30	Optical clocks, calibration and comparisons	Lisdat, Schmidt, Petit (for frequency standards WG), others, e.g. Pottie
	Use of accurate clocks for gravity potential determination	Visser, Flury , others, e.g., Müller

10:00	Coffee Break	
10:30	Use of accurate clocks for gravity potential determination <i>cont'd</i>	Visser, Flury , others, e.g., Müller
	Links to other associations / commissions / groups, joint projects and opportunities	Petit, all
12:00	Lunch	
13:00	Plans and perspectives of the group	all
	Plans for next meeting, adjourn	Flury, Petit
15:00	End of meeting	

in addition (Tuesday) U Schreiber (Wetzell)
on IAG WG 1.1.1: Co-location using clocks
and new sensors

a personal start

- getting to know each other
- first exchange
- very dynamic field
- long term goals such as:
 - advancing continental networks of optical atomic clocks, relativistic determination of gravity potential
 - why, what, how, when, ...
- strengthening gravimetric (dynamic) and geometric reference frames
- many other topics, see Terms of Reference
- output: e.g., report, ...

role within IAG

- JWG 2.1 reports to IAG Commission 2 (Gravity Field, president Roland Pail)
 - current period: 2015 - 2019
 - 1. report due May 31, 2017
 - joint with IAG Commission 1 (Reference Frames, Geoff Blewitt)

related IAG activities (selection)

- Sub-commissions in Commission 2
 - SC 2.2: Methodology for Geoid and Physical Height Systems (Ågren)
 - SC 2.4: Regional Geoid Determination (Pacino)
 - SC 2.4a: Gravity and Geoid in Europe (Denker)
- (Joint) Study Groups in Commission 2
 - SG 2.1.1: Techniques and metrology in terrestrial (land, marine, airborne) gravimetry (van Westrum)
 - JSG 0.11: Multiresolutional aspects of the potential field theory (Tsoulis)
 - JSG 0.12: Advanced computational methods for recovery of high-resolution gravity field models (Cunderlík)
 - JSG 0.13: Integral equations of potential theory for continuation and transformation of classical and new gravitational observables (Šprlák)
 - JSG 0.15: Regional geoid/quasi-geoid modelling – Theoretical framework for the sub-centimetre accuracy (Huang)
 - JSG 0.18: High resolution harmonic analysis and synthesis of potential fields (Claessens)
 - JSG 0.21: Geophysical modelling of time variations in deformation and gravity (Tanaka)

related IAG activities (selection)

- (Joint) Working Groups in Commission 2
 - JWG 0.1.2: Strategy for the Realization of the International Height Reference System (IHRIS) (Sanchez)
 - IAG Resolution for the definition and realization of an International Height Reference System (IHRIS) (2015)
 - JWG 2.1: Relativistic Geodesy: First steps towards a new geodetic technique (Flury/Petit)
 - JWG 2.2.1: Integration and validation of local geoid estimates (Reguzzoni)
 - JWG 2.2.2: The 1 cm geoid experiment (Wang)
- Global Geodetic Observing System (GGOS)
 - Focus Area 1: Unified Height System
- complete overview: see IAG website

general topics

- theory
- reference frames, geoid, mean sea level, height networks, time
- classical gravity potential determination
- frequency transfer, fiber links, campaigns
- optical atomic clocks, calibration, comparisons
- use of accurate clocks for gravity potential determination
- joint projects, opportunities
- links to other associations, commissions, groups
- ***to be reviewed at / after workshop***

membership

J. Flury
G. Petit
C. Boucher
J. Müller
C. Lisdat
P. Schmidt
G. Grosche
C. Lämmerzahl
P. Delva
P.E. Pottie
M.F. Lalancette
P. Visser
N. Pavlis

B. Patla
P. Defraigne
G. Blewitt
P. Novak
S. Kopeikin
D. Calonico
C. Hughes
(20)

- changes?
- earlier changes and suggestions
- tbc: representation of reference frames

guests

- ... are welcome
- Mazurova, Perlick, Hackmann, Schreiber
- liaisons: Collilieux, ...
- further interest (NPL, Poland, ...)

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