EGSIEM

European Gravity Service for Improved Emergency Management

WP7:
EGSIEM Summer School

Adrian Jäggi/Keith Cann-Guthauser

DLR, Oberpfaffenhofen

8. & 9. June 2017

HORIZON 2020

- Jointly organised by EGSIEM/GFZ (& BfBM)
- Dedicated page on project website (egsiem.eu/autumn-school)
- Announced on Facebook & Twitter in April 2017
- Hard copy posters available
- Emailed announcement to the Geodesy list supplied by Tamara/Akbar (12. May 2017)
- Currently (07.06) waiting on IAG Newsletter publication

Current schedule

DATE	Morning	Afternoon	Evening
Monday (11. September)	*Arrivals*	**GPS & GRACE Introduction** Adrian Jäggi/ Ulrich Meyer	**Ice Breaker** All
Tuesday (12. September)	**GRACE Analysis** Torsten Mayer-Gürr	**Hydrology I** Andreas Güntner	**Hydrology II** Annette Eicker
Wednesday (13. September)	**Ice sheet signals** Martin Horwath	**GIA** Holger Steffen	**GNSS Loading** Tonie van Dam
Thursday (14. September)	**Remote Sensing** Hendrik Zwenzner	**GRACE FO** Frank Flechtner	**Social & Networking Event** All
Friday (15. September)	**EGSIEM Tools** Stéphane Bourgogne / Matthias Weigelt	*Departures*	

2 x Social events kindly sponsored also by GFZ, the second being a cruise.

Current poster as featured on the EGSIEM website

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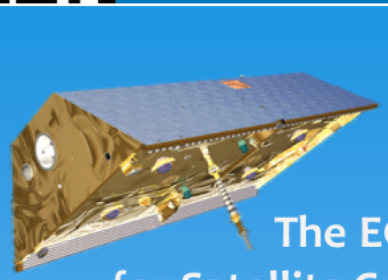

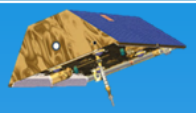

International Autumn School

The EGSIEM Autumn School for Satellite Gravimetry Applications

11 – 15 September 2017

GFZ Helmholtz Centre, Potsdam, Germany

This autumn school, held in the historic surroundings of the Telegrafenberg site, will educate students and young researchers in state of the art Satellite Gravimetry Applications, and prepare them for the usage of those products being developed within the framework of the EGSIEM project. Presentations from key members of the EGSIEM consortium will be augmented by high profile guests giving presentations on selected topics.

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Registration Deadline: 31st July 2017

Organisation of the autumn school is jointly managed by the EGSIEM project and GFZ

For more information please visit www.egsiem.eu/autumn-school

GFZ Helmholtz Centre Potsdam

Bundesministerium für Bildung und Forschung

This event has received support from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 637010

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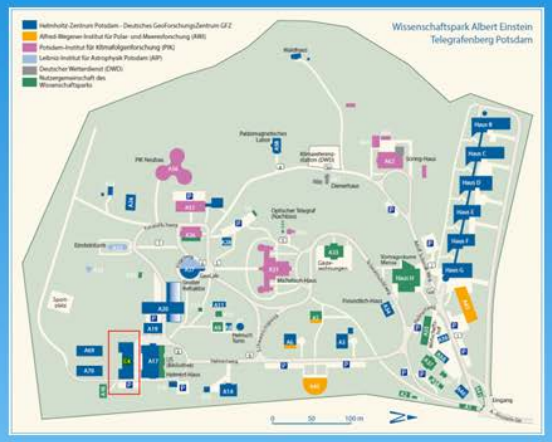

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The European Gravity Service for Improved Emergency Management (EGSIEM) Project consists of the following partners:

- Universität Bern
- Université du Luxembourg
- Helmholtz-Zentrum Potsdam Deutsches GeoForschungsZentrum
- Technische Universität Graz
- Leibniz Universität Hannover
- Deutsches Zentrum für Luft-und Raumfahrt
- Centre national d'études Spatieles
- géode & cie

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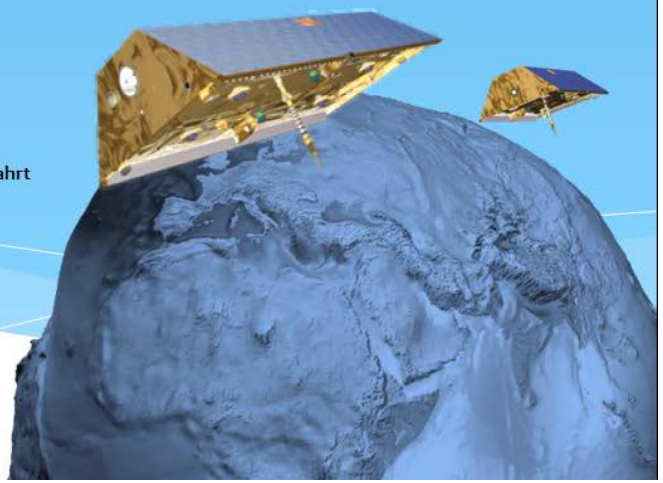

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Adrian Jäggi
Universität Bern

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Annete Eickert
HCU Hamburg
Assimilation of GRACE data into hydrological models

Data assimilation represents a tool for integrating observations into numerical models in order to provide more realistic model results. We will introduce the concept of data assimilation for integrating GRACE observations into hydrological models. The approach does not only allow us to improve the model results, but it is also suitable for disintegrating the GRACE observations into individual hydrological storage compartments and to increase the spatial and temporal resolution of the water storage estimates. The methodological concept of the ensemble Kalman filter method for data assimilation will be introduced and specific challenges for assimilating GRACE data will be discussed.

Hendrik Zwenzner
DLR-ZKI
Remote Sensing

An overview of different space-based earth observation techniques and mechanisms will be given. Special focus will be on the application of SAR satellite data for flood mapping. Examples from the rapid mapping service of DLR's Center for satellite-based Crisis Information are presented and discussed during this session.

Ulrich Meyer
Universität Bern

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Martin Horwath
TU Dresden

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Frank Flechtner
GFZ
GRACE Follow On Mission

The GRACE (Gravity Recovery and Climate Experiment) FO mission, due for launch early 2018, will continue providing time-variable estimates of the Earth's gravity field for a period of up to five years at a precision and temporal sampling equivalent to that achieved with GRACE. GRACE-FO will also provide quick look (<24h) products for enhanced operational use for water resource management and will demonstrate satellite-to-satellite interferometry in LEO for future gravity missions. The presentation will focus on the status of the mission and will also give an outlook on potential Next Generation Gravity Missions.

Torsten Mayer-Gürr
TU Graz

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Matthias Weigelt
LU Hannover

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Andreas Güntner
GFZ
Modelling the hydrological cycle

This lecture will give an overview of the components of the global water cycle and an introduction into the concepts of hydrological modelling. Focus is given to illustrating different water storage compartments and the value of time-variable gravity data to quantify their dynamics. In the practicals, using a simple hydrological model, the participants will experience the interplay of water fluxes and water storage dynamics as influenced by model parameterization. The basic principles of model calibration as a strategy of tuning the model structure and model parameters in a way that simulation results correspond to observations will be conveyed within a calibration exercise.

Tonie van Dam
Uni du Luxembourg
GNSS Loading

The Earth responds elastically to surface mass loading. Many publications have demonstrated that GNSS is capable of observing these displacements. GNSS combined with GRACE observations allows us to refine the mass load at a finer scale in regions where GNSS is sufficiently spatially dense, and by analysing the horizontal motions, we can determine where the load is located. In this session, we will review elastic loading theory. We will demonstrate the theory that allows us to compare GRACE and GNSS observations. We will also review the literature that compares GNSS and GRACE to outline the limitations and the benefits of these comparisons.

Stéphane Bourgogne
géode & Cie

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