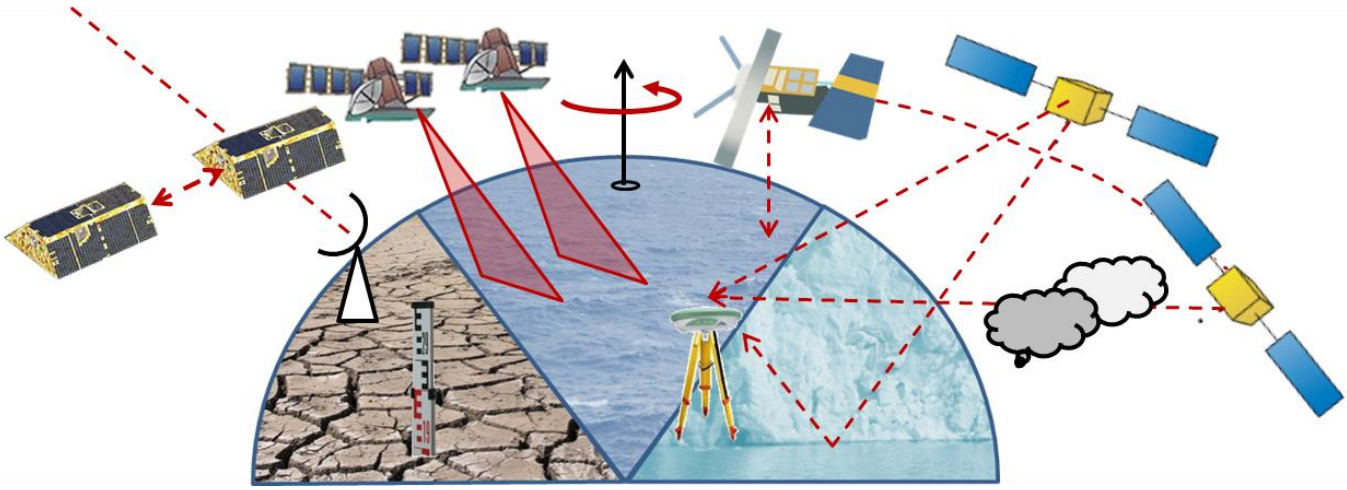
2. ICCC Workshop

„Geodesy for Climate Research“

March 28-29, 2023

- online –

Program



Organized by the Inter-Commission Committee on “Geodesy for Climate Research” of the International Association of Geodesy (IAG)

International Association of Geodesy

Programme committee:

Annette Eicker, Carmen Blackwood, Balaji Devaraju, Henryk Dobslaw, Anna Klos, Jürgen Kusche, Roland Pail, Roelof Rietbroek, Susanna Werth, Bert Wouters.

General Information:

- The workshop is a mixture of **live sessions** and **online content** that can be viewed and discussed at any time.
- All presentations (orals and posters) should **be available for download** (see below) to allow asynchronous viewing.
- A **chat platform** (Zulip) will allow communication between participants throughout the workshop.

Program:

- **Live Sessions**:
    - **2x2h of live session on Zoom per day:** 2h in the "morning" at 8.a.m Central European Summer time (CEST = UTC+2) and 2h in the "afternoon" at 5 p.m. (17:00) CEST.
    - The live sessions will consist of introductory overview lectures, oral presentations, poster breakout sessions, and discussions.
- **Orals:** Each presentation will be **8 + 2 minutes** for talk and discussion.
- **Posters**: We will have a ~1.5h poster sessions (Tuesday p.m.).
    - Each presenter will have the chance to use their **individual Zoom breakout room** to discuss the poster and to show additional content.

Live video meetings:

The live meetings will be held on Zoom. The login details will be sent to presenters and all registered participants a few days prior to the workshop.

Presentation material:

Presentation material will be provided for download prior to the meeting. All presenters are asked to upload their presentation by March 26th, information on the upload will be provided by email.

Communication:

We have established a chat on the **chat platform Zulip** to enable communication among participants and to asynchronously ask questions on presentations. The invitation link will be provided to registered participants prior to the workshop.

Program overview:

CEST (UTC+2)	**Tuesday** (28.03.2023)	**Wednesday** (29.03.23)
08:00 – 10:00	**Session 1:** Welcome Altimetry Ocean Misc	**Session 4:** GRACE Hydrology Ice mass balance
17:00 – 17:40	**Session 2:** GNSS	**Session 5:** GNSS Loading Atmosphere Misc
17:40 – 19:00	**Session 3:** Posters	

Tuesday, March 28, 2023

Tuesday morning: 8 a.m. CEST (UTC+2)			
Session 01			
Conveners: Roelof Rietbroek, Roland Pail			
08:00-08:10		A. Eicker & C. Böning (and orga team)	Welcome & Introduction
08:10-08:20	S01C01	M. Passaro (DGFI), M.A. Hemer, G.D. Quartly, C. Schwatke, D. Dettmering, F. Seitz,	Global coastal attenuation of wind-waves observed with radar altimetry
08:20-08:30	S01C02	L. Jiang (SUSTech), K. Nielsen, O. B. Andersen	Monitoring mountain lake variation from satellite altimetry: improvements during the last decades (1992 - 2021)
08:30-08:40	S01C03	L. Fenoglio (Univ. Bonn), H. Uyanik, J. Chen, J. Staneva, Hereon B. Jacob, J. Pein, J. Kusche	Estuarine water level change from high resolution altimetry
08:40-08:50	S01C04	S. Esselborn (GFZ Potsdam), T. Schöne	Differences between sea level measured by conventional and SAR altimeters in the Southeastern North Sea
08:50-09:00	S01C05	J. Kusche (Univ. Bonn), S. Stolzenberger, C. Wekerle, R. Rietbroek, B. Uebbing	Signatures of Greenland melting in the North Atlantic: Model simulations vs. Argo, GRACE, radar altimetry and ocean reanalysis
09:00-09:10	S01C06	C. Strohmenger (Univ. Bonn), Z. Liu, B. Uebbing, J. Kusche, L. Reißner, Y. Shen, W. Feng, Q. Chen	Investigating the sea level budget in the East China Sea
09:10-09:20	S01C07	J. Liu (GFZ Postdam), L. Shihora, K. Balidakis, H. Dobslaw	Intrinsic Ocean Bottom Pressure Variability from MPIOM Ocean Circulation Ensemble Simulations
09:20-09:30	S01C08	J.A. Vargas-Alemañy (Univ. of Alicante), M. I. Vigo, D. García-García, F. Zid	A geodetic approach to volume transport estimation in the Southern Ocean from satellite data

09:30-09:40	S01C09	S. Akande (FUTA, Nigeria)	Space-based Geodetic Technology for Integrated Coastal Vulnerability Mapping along the West Africa
09:40-09:50	S01C10	O. Memarian Sorkhabi (Univ. College Dublin), O. Boydell	Investigating Recent Irish Flood Events with Satellite Radar Imagery
09:50-10:00	S01C11	J.Wang (Beijing University), X. Liu	Detecting the Great Wall dynamic response under thunder loading with GNSS and MEMS accelerometers

Tuesday afternoon: 5 p.m. CEST (UTC+2)			
Session 02 (Orals) + Session 03 (Poster session)			
Conveners: Annette Eicker, Henryk Dobsalw			
Orals (17:00-17:40)			
17:00-17:10	S02C01	K. Larson (Univ. Bonn), S.D.P. Williams, F.elipe Geremia-Nievinski, K. Enloe, T. Dittmann, M. Karegan, D. Purnell	GNSS interferometric reflectometry (GNSS-IR): current status of open source software for environmental sensing
17:10-17:20	S02C02	M. Aichinger-Rosenberger (UCAR), J. Braun, T. Vanhove, Y.-H. Kuo	GNSS-based observational analysis of an extreme Atmospheric River event: Signatures in GNSS-RO and ground-based troposphere products
17:20-17:30	S02C03	V. Humphrey (ETH Zürich), C. Frankenberg	Continuous observation of canopy water content changes with GNSS sensors
17:30-17:40	S02C04	M. Santos (Univ. New Brunswick), J. Rees, K. Balidakis, A. Klos, R. Pacione	Discussing long-term ground-based GNSS-derived ZTD trends for climate
Poster session (17:40-19:00)			
S03C01	Ayelen Pereira (Univ. de Rosario), C. Cornero, A. C. O. C. de Matos, C. Pacino	Identifying water storage changes in the Parana river basin from GRACE/FO and its connection with ENSO events	
S03C02	M.F. Camisay (Centro de Ingeniería Mendoza), M.V. Mackern, M. L. Mateo, P.A. Rosell	Integrated Water Vapor from SIRGAS troposferic products, meteorological and ERA5 data.	
S03C03	B. Gankhuyag (MAS, Mongolia), A. Sharav, N. Baasan	Machine Learning approaches for troposphere delays	
S03C04	B.N.R. Komali (Indian Inst. of Techn. Kanpur), B. Devaraju	Insights into the feedback of vegetation health and growth to the changes in different water storage compartments	
S03C05	A.K. Boulahia (Univ. of Alicante), D. Garcia-Garcia, I. Vigo, M. Trottini, J.-M. Sayol	The Water Cycle of the Baltic Sea Region From GRACE/GRACE-FO Missions and ERA5 Data	
S03C06	O. Abedi Khorasgani (Univ. of Isfahan), S. Iran-Pour, A. Klos, A. Amiri-Simkooei	Use of an iterative SSA-based algorithm for GNSS data gap-filling with application to monitoring of hydrological loading	
S03C07	J. Nastula (Polskiej Akademii Nauk),Tomasz Kur, J. Śliwińska, M. Wińska, A. Partyka	Exploiting grouped CMIP6 models to determine hydrological excitation of polar motion	
S03C08	M. Birylo (Univ. of Warmia and Mazury), Z. Rzepecka	Attempts to determine ocean tides velocities based on GRACE solutions	

Wednesday, March 29, 2023

Wednesday morning: 8 a.m. CEST (UTC+2)			
Session 04			
Conveners: Balaji Devaraju, Bert Wouters			
08:00-08:10	S04C01	M. Tourian (Univ. Stuttgart), F. Papa, O. Elmi, N. Sneeuw, B. Kitambo, R. M. Tshimanga, A. Paris, S. Calmant	Current availability and distribution of Congo Basin's freshwater resources
08:10-08:20	S04C02	J. Nicolas (Cnam / GeF), J. Verdun, J.-P. Boy F. Durand, A. Koulali, P. Clarke	Inference of river signal in hydrological loading effects in South America from space geodesy
08:20-08:30	S04C03	P. Ditmar (TU Delft)	Assessment of level-2 data products from GRACE Follow-On satellite mission using water mass variations in lakes
08:30-08:40	S04C04	A. Klemme (Univ. of Bremen), T. Warneke, H. Bovensmann, M. Weigelt, J. Müller	Sediment transport in Indian rivers high enough to impact satellite gravimetry
08:40-08:50	S04C05	R. Hohensinn (ISSI Bern), U. Meyer, M. Lasser, M. Rast	Towards separating temporally-correlated noise from residual gravity signals in GRACE TWS time series data
08:50-09:00	S04C06	U.Meyer (Univ. Bern), M. Lasser, C. Dahle, C. Förste, S. Behzadpour, I. Koch, A. Jäggi,	The second release of COST-G GRACE-FO combined monthly gravity fields
09:00-09:10	S04C07	O. Gunes (Yildiz TU), A. Klos, A. Lenczuk, C. Aydin, J. Bogusz	Redefining the Deterministic Model for the GRACE Total Water Storage Time Series
09:10-09:20	S04C08	M. Schlaak (TU Munich), M. Graf, R. Pail	Long-term Trend Estimation of Climate Related Mass Transport in Satellite Gravity Simulations
09:20-09:30	S04C09	M. King (Univ. of Tasmania), K. Lyu, X. Zhang	Climate variability as a major forcing of recent Antarctic ice-mass change
09:30-09:40	S04C10	M. Graf (TU Munich), M. Schlaak, R.	Time series of Mass Trends for the Greenland Ice Sheet and Peripheral Glaciers
09:40-09:50	S04C11	M. Willen (TU Dresden), M. Horwath, TU Dresden A. Groh, V. Helm, B. Uebbing, J. Kusche	Spatially resolved glacial isostatic adjustment and ice sheet mass changes within a global inversion framework: feasibility proven by experiments with simulated satellite data
09:50-10:00	S04C12	M. Negusini (INAF – IRA), L. Alfonsi, N. Bergeot	AGATA – A new SCAR Programme Planning Group

Wednesday afternoon: 5 p.m. CEST (UTC+2)			
Session 05			
Conveners: Anna Klos, Carmen Blackwood			
17:00-17:10	S05C01	K. Ghobadi-Far (Virginia Tech), S. Werth, M. Shirzaei	Quantifying impact of drought and groundwater management on the Santa Clara Valley aquifer-system using InSAR deformation timeseries over 2017-2022
17:10-17:20	S05C02	D. Argus (JPL), H. Martens, A. Borsa, D. Wiese, M. Swarr, N. Lau, Q. Cao, M..ing Pan, F. Landerer, P. Gardner	2023 Winter Rain and Snow Replenishes Subsurface Water in California, Beginning to Break the Prior Three Years of Drought
17:20-17:30	S05C03	S. Werth (Virginia Tech), M. Shirzaei, G. Carlson, R. Bürgmann	The Importance of High Sierra Nevada Snowpack for Recharging the Central Valley Aquifers

17:30-17:40	S05C04	M. Razeghi (ANU), P. Tregoning, M. Shirzaei, K. Ghobadi-Far, S. McClusky, L. Renzullo	Characterization of changes in groundwater storage in the Lachlan Catchment, Australia, derived from observations of surface deformation and groundwater level data
17:40-17:50	S05C05	M. Khorrami (Virginia Tech), M. Shirzaei	Climate Change and Anthropogenic Impacts on Disappearing Water Sources (Lake Urmia)
17:50-18:00	S05C06	P. Yuan (KIT), R. Van Malderen, X. Yin, H. Kutterer	Analysis of diurnal IWV cycle and evaluation of artificial mismatches in ERA5 over Europe by using GNSS
18:00-18:10	S05C07	Z. Baldysz (Nat. Res. Inst., Poland), G. Nykiel, B. Latos, D.B. Baranowski	Various climate phenomena reflected in precipitable water vapour derived from GNSS observations
18:10-18:20	S05C08	N. Kablak (Warsaw Univ. of Tech.), S. Savchuk	On the approach to GNSS tomography of the troposphere based on multi-GNSS observations from single station
18:20-18:30	S05C09	N. Nguyen (IPG Paris), O. Bock, E. Lebarbier	A statistical method for the attribution of change-points in segmentation of IWV difference time series
18:30-18:40	S05C10	V. Kumar	DORIS-based Precise Orbit Determination and its geodetic applications
18:40-18:50	S05C11	L. Zotov (SAI MSU), C. Bizouard, N. Sidorenkov, C.K. Shum, S. Denisenko	Regularized Kalman Filter in application to the Chandler wobble of the pole