

Final Program for Workshop on Glacial Isostatic Adjustment and Elastic Deformation September 5-7, 2017, at Grand Hotel Reykjavik, Iceland

Monday (September 4, 2017)

3.00-6.00 pm Registration (Registration will be open all days during the conference)

Tuesday (September 5, 2017)

Session 1: Observations of present-day changes in glaciers, ice caps and ice sheets and the associated Earth deformation. conveners: Ingo Sasgen, Valentina Barletta, Bert Wouters		
Time	Presenter	Title
8:10	Abbas, Matt, Pippa	welcome
8:20	Louise Sandberg Sørensen (Invited)	Ice mass changes in Iceland from GRACE: The importance of glacial isostatic rebound and leakage effects.
8:35	Peter Schmidt	A recent ice history model used in studies of present day GIA in Iceland.
8:50	Finnur Pálsson	Decadal mass balance records of Vatnajökull and Langjökull ice caps, Iceland.
9:05	Jonathan Bamber	Land ice contribution to SLR during the satellite era
9:20	Joaquín Belart	The archives of multi-temporal elevation data in Iceland - mass balance of Mýrdalsjökull and Eyjafjallajökull ice caps, 1945-2015.
9:35	Louise Steffensen Schmidt	Simulating the Specific Mass Balance of Vatnajökull from 1980-2016.
9:50	Etienne Berthier	Glacier mass changes is High Mountain Asia, 2000-2016.
10:05	Kathleen Compton	Using cGPS Uplift Observations to Inform Decadal Ice Cap Thinning Rates and Viscosity Estimates in Iceland
10:20	Coffee break	
10:40	Riccardo Riva (Invited)	The global signature of post-1900 land ice wastage on vertical land motion
10:55	Rene Forsberg	25 year time series of multiple-satellite ice sheet changes: the ESA Climate Change Initiative
11:05	Kristian K Kjeldsen	Impact of 20th century mass balance of the Greenland Ice Sheet on land motion
11:20	Marcin Rajner	Detection of regional ice mass variation using GNSS measurements at Svalbard
11:35	Seyed Mehdi Shafiei Joud	Preliminary results of a combined land uplift model in Fennoscandia using gravimetric and geometric data
11:50	Anneleen Oyen	Revealing high-resolution GIA patterns by means of InSAR. A case study on Crane glacier, Larsen-B embayment, Antarctic Peninsula
12:05	Mirko Scheinert	In-situ GNSS measurements and satellite observations to study glacial-isostatic adjustment, mass balance and dynamics of the Greenland Ice Sheet
12:15	Discussion	
12:30	Lunch	
Session 2: Measurement and Models of Elastic Rebound. conveners: Jeff Freymueller, Mirko Scheinert, Tonie van Dam		
Time	Presenter	Title
13:30	Lin Liu (invited)	The combined use of GPS and GRACE data to study seasonal and transient variations in glacial mass near Greenland outlet glaciers
13:50	Peter J Clarke (invited)	Earth's response to surface mass loads: inferences from ocean tide loading
14:10	Kathleen Compton	Short-Term Variations of Icelandic Ice Cap Mass Inferred from cGPS Coordinate Time Series
14:25	Michael Bevis	The unusual transient displacement of GNET station KBUG in the winter of 2012 – 2013: How much of this can be explained by anomalous mid-winter ice dynamics at Koge Bugt outlet glacier?
14:40	Halldor Geirsson	Uplift in Iceland observed with over 23 years of GPS data: Impact on models of plate motion and volcanic unrest
14:55	Samuel B. Kachuck	Nondimensionalized relaxation method for efficient computation of elastic Love numbers
15:10	Volker Klemann	The influence of mantle anelasticity on load response functions in applications for gravity and deformation corrections
15:25	Coffee break	
Poster session: Short poster presentations conveners: Pippa Whitehouse, Matt King, Shfaqat Abbas Khan		
15:50	Carsten Ankjær Ludwigsen	The long-term contribution of Glacial Isostatic Adjusment from contemporary ice-mass changes to future sea level change.
15:53	Matthias Willen	How to isolate GIA empirically in mass balance studies
15:56	Christopher Harig	Long term ice sheet mass change rates and inter-annual variability from GRACE

15:59	Enze Zhang	Transient variations in ice mass near Jakobshavn Isbræ (west Greenland) detected by the combined use of GPS and GRACE data
16:02	Emil Nielsen	Absolute gravity in Greenland for studying geodynamics.
16:05	Reyaz A Dar	Glacial-geomorphology of the Upper Indus Basin, Kashmir Himalayas, India
16:08	William J. Durkin	Elastic Uplift Rates in Southeast Alaska Constrained with Space Geodesy
16:11	Maaria Nordman	How to detect atmospheric and Baltic Sea loading in GNSS time series in Fennoscandia
16:14	Luce Fleitout	Exploring the limits of validity of elasticity: observations and models for various solicitations of the Earth
16:17	Meike Bagge	Quantifying the sensitivity of earth-deformation and sea-level reconstruction on earth structure during the last glacial cycle
16:20	Folker Pappa	An integrated 3D model of Antarctica's lithosphere as a basis for cryospheric modelling
16:23	David Al-Attar	On the applicability of viscoelastic normal mode theory
16:26	Rebekka Steffen	Fault reactivation due to glacially induced stresses
16:29	Katarina Vardic	Testing and comparing 1D and 3D GIA models against the ITRF velocity field
16:32	Ingo Sasgen	A new glacial-isostatic adjustment model for Greenland constrained by GPS uplift rates and relative sea-level data
16:35	Wouter van der Wal	Effect of laterally varying bedrock relaxation time on ice sheet growth
16:38	Wouter van der Wal	Benchmarking the Sea level equation in GIA modelling
16:41	Mark Pittard	Developing a new ice loading history for Antarctica using a dynamic ice sheet model
16:44	Takeshige Ishiwa	GIA response during the Last Glacial Maximum inferred from newly obtained observations in the Bonaparte Gulf, northwestern Australia.
16:47	Näränen Jyri	Observations of gravity change at five Antarctic research stations in Western Dronning Maud Land, Antarctica
16:50	Hélène Rouby	Constraints on North-American GIA models from analyses of GPS-measured crustal rebound
16:53	Elizabeth Petrie	Documenting GNSS sites to facilitate future processing advances and understanding of GNSS timeseries
16:56	End of session	
17:00-18:00	Icebreaker/poster viewing	

Wednesday (September 6, 2017)

Session 3a: GIA on heterogeneous Earth - Theory and Modelling		
Conveners: Wouter van der Wal , Natalya Gomez, Tom James		
Time	Presenter	Title
8:30	Shijie Zhong (Invited)	Building reference GIA models with 3-D mantle and lithospheric viscosity
9:00	Ophelia Crawford	Adjoint-based sensitivity kernels for glacial isostatic adjustment in a laterally varying Earth
9:15	Kurt Lambeck	Unresolved issues in GIA modelling: the elephants in the room.
9:30	Holger Steffen	Constraints on lateral variations of lithospheric thickness and mantle viscosity in Fennoscandia from the recent GNSS velocity field of the BIFROST project
9:45	Discussion	
10:00	Coffee break	
Session 3b: GIA on a heterogeneous Earth - Theory and Modelling		
Conveners: Wouter van der Wal , Natalya Gomez, Tom James		
10:20	Jacqueline Austermann (Invited)	Probing lateral variations in Earth's viscosity across timescales
10:50	Patrick Wu	Laterally heterogeneous viscosity models of Glacial Isostatic Adjustment in support of the global ICE-6G_C ice history model
11:05	Rebekka Steffen	Glacial isostatic adjustment model for Greenland with laterally varying lithospheric thickness determined from geophysical data
11:20	Glenn A. Milne	The Influence of Lateral Earth Structure on Glacial Isostatic Adjustment in Greenland
11:35	Peter Schmidt	Sensitivity of the ISNET GPS data to 3D variations in elastic thickness and viscosity in GIA models of Iceland
11:50	Discussion	
12:05	Lunch	
Session 3c: Investigations of Earth structure and GIA in Antarctica		
Conveners: Wouter van der Wal , Natalya Gomez, Tom James		

13:15	Douglas A. Wiens	Seismic Constraints on Lithospheric thickness and Mantle Viscosity Structure beneath Antarctica.
13:30	Terry Wilson	Investigating Ice Sheet – Solid Earth Feedbacks in West Antarctica: Results from the POLENET-ANET Project
13:45	Pippa Whitehouse	Which periods of ice history dominate the contemporary GIA signal across Antarctica?
14:00	Matt King	Geodetic evidence for predominance of a low viscosity upper mantle in West Antarctica
14:15	Grace. A. Nield	The sensitivity of Glacial Isostatic Adjustment in the Antarctic Peninsula to variations in lithospheric thickness
14:30	Tim H.J. Hermans	The Effect of Heterogeneous Mantle Viscosity on Horizontal Velocities in Antarctica
14:45	Discussion	
15:05	Coffee break	
Session 4: Reconciling models and observations of GIA Conveners: Pippa Whitehouse, Bas de Boer, Terry Wilson		
15:30	Alba Martin (invited)	An assessment of forward and inverse GIA solutions for Antarctica
16:00	Natalya Gomez	The influence of 3-D Earth structure on ice-sheet evolution and GIA in Antarctica: insights from coupled ice-Earth-sea level modeling
16:20	Ingo Sasgen	Joint inversion estimate of regional glacial isostatic adjustment in Antarctica considering a lateral varying Earth structure (ESA STSE Project REGINA)
16:40	Peter Busch	GNSS measurements in West Antarctica to reconcile glacial-isostatic adjustment
17:00	Valentina R. Barletta	Non-linear effect of lowering the viscosity in the solid Earth feedback for short-term applications (mass balance from GRACE and ice/Earth coupling)
17:20	Break	
18:30-20:30	Dinner at Restaurant Reykjavik Vesturgata 2 101 Reykjavik Iceland http://www.restaurantreykjavik.is/ For vegetarian and allergy dishes, please inform Maria Tammelin Gleerup (email: matag@space.dtu.dk)	

Thursday (September 7, 2017)

Session 4: Reconciling models and observations of GIA Conveners: Pippa Whitehouse, Bas de Boer, Terry Wilson		
Time	Presenter	Title
8:30	Keven Roy	Insight on the GIA process from high-quality constraints: specific examples from North America and from the Mediterranean basin
8:50	Karen M. Simon	Evaluating the ability of geodetic data to constrain contemporary GIA signals in Scandinavia and North America
9:10	Maike Schumacher	A novel global GPS data set for GIA modelling and validation
9:30	Marc Rovira-Navarro	Investigating GIA in the Kara and Barents Sea using GRACE
9:50	Freysteinn Sigmundsson (Invited)	Interplay of surface loading and glacial isostatic adjustment in Iceland
10:20	Coffee break	
10:40	Catherine M.I. Robin	A hybrid crustal velocity model for Canada: combining GPS data with GIA models
11:00	Laurent Métivier	Glacial Isostatic Adjustment and gravity gradients anomalies: what implications on mantle viscosity?
11:20	Holger Steffen	The improved semi-empirical Fennoscandian postglacial land uplift model NKG2016LU
11:40	Paul Bierman	Directly dating post-glacial emergence in western and southern Greenland at high resolution using <i>in situ</i> ¹⁰ Be
12:00	Discussion	
12:30	Lunch	
13:30-18:30	Afternoon tour by bus to the Golden Circle The tour will start and end at Grand hotel! See attached document for details.	
18:30	Afternoon on your own	

Dinner at Restaurant Reykjavík on September 6, 2017 from 18:30 to 20:30

Vesturgata 2

101 Reykjavík

Iceland

<http://www.restaurantreykjavik.is/>

*For vegetarian and allergy dishes, please inform Maria Tammelin Glerup
(email: matag@space.dtu.dk)*

Menu:

CREAMY LOBSTER SOUP

With smoked shellfish and lobster oil

SIRLOIN STEAK

& SLOW COOKED BEEF CHEEK

With baby potatoes, spinach and wild mushroom vinegar sauce

WHITE CHOCOLATE BROWNIE

With skyr, raspberries and pear purée