Forum for Research into Ice Shelf Processes (FRISP)

15-18 September 2019, The Queen's College, Oxford, UK

Sunday 15 September

17:30-19:00 Oxford walking tour

19:30 Dinner

Monday 16 September

7:45-8:45 Breakfast

8:45-9:00 Introduction

9:00-10:40 Session 1: Circumpolar, Larsen, and Brunt
Chair: Tore Hattermann

9:00-9:20 Michael Dinniman: "Direct and indirect contributions of ice shelves to micronutrient supply to the surface waters around Antarctica"

9:20-9:40 Eva Cougnon: "Realistic Ice-ocean State Estimates (RISE) international collaboration"

9:40-10:00 Lianne Harrison: "Oceanic melting and freezing beneath Larsen C Ice Shelf"

10:00-10:20 Alexander Robel: "A speed limit on ice shelf collapse through hydrofracture"

10:20-10:40 Jan De Rydt: "Calving cycle of the Brunt Ice Shelf, Antarctica, driven by changes in ice-shelf geometry"

10:40-11:10 Morning tea

11:10-12:30 Session 2: Filchner-Ronne
Chair: Elin Darelius

11:10-11:30 Lucie Vignes: "The impact of the seasonality of surface air-ice-sea fluxes on warm water pathway toward the Filchner Ronne Ice Shelf"

11:30-11:50 Stefanie Arndt: "Thickness of the Berkner Island fast-ice tongue: Implications for ISW"

11:50-12:10 Irena Vankova: "Tidal melt and vertical strain observations at the Filchner-Ronne Ice Shelf"

12:10-12:30 Timm Schultz: "Viscoelastic modelling of a subglacial melt channel beneath the Filchner Ronne Ice Shelf near Support Force Glacier, Antarctica"

12:30-14:00 Lunch

14:00-15:40 Session 3: East Antarctica
Chair: Christopher Bull

14:00-14:20 Jim Jordan: "Explaining the recent acceleration of Cook Glacier, East Antarctica"

14:20-14:40 Konstanze Haubner: "Totten glacier, EAIS, under a changing climate"

14:40-15:00 Sue Cook: “Basal melt variability on the Totten Ice Shelf”
15:00-15:20 Emilia Kyung Jin: “Impact of bed geometry on the future projections of ice sheet melting and sea level rise”
15:20-15:40 Shin Sugiyama: “Seasonal variations in temperature, salinity and current under the floating tongue of Langhovde Glacier in East Antarctica”

15:40-16:00 Afternoon tea
Tour of Queens College Library (limited spaces)

16:00-18:00 Posters

19:30 Dinner

Tuesday 17 September

7:45-8:45 Breakfast

9:00-10:40 Session 4: Processes and parameterisations
Chair: Peter Davis
9:00-9:20 Ben Yeager: “A 3D model of ocean circulation near an ice shelf grounding line”
9:20-9:40 Alena Malyarenko: “Ice shelf-ocean ablation: a wide range in observations, a wider range in modelling”
9:40-10:00 Maya Becker: “An overlooked ice-shelf calving process for accelerating Antarctic Ice Sheet loss”
10:00-10:20 Erin C. Pettit: “Melt Dynamics at Ice Cliffs”
10:20-10:40 Nicolas Jourdain: “Uncertainty on future ice-shelf basal melt rates in Antarctica”

10:40-11:10 Morning tea

11:10-12:30 Session 5: Processes and parameterisations (cont’d)
Chair: Catherine Vreugdenhil
11:10-11:30 Ji Sung Na: “Large eddy simulation study of the flow within the mixed layer with water plume under ice shelf”
11:30-11:50 Carolyn Begeman: “Large-eddy simulations of the ice-ocean boundary layer”
11:50-12:10 Louis Couston: “Direct numerical simulation of ice melting in a turbulent ocean”
12:10-12:30 Leo Middleton: “Onset of Double Diffusive Convection in the Ice Shelf Ocean Boundary Layer”

12:30-14:00 Lunch

14:00-15:40 Session 6: Ross and Greenland
Chair: Natalie Robinson
14:00-14:20 Indrani Das (remotely via Zoom): “Multi-decadal basal melt rates of Ross Ice Shelf, Antarctica from airborne ice penetrating radar”
14:20-14:40 Craig Stevens: “A year under ice: observations of thermohaline temporal

variability in the central Ross Ice Shelf ocean cavity”

14:40-15:00 Britney Schmidt: “Grounded Ice-Ocean Interactions in McMurdo Sound”

15:00-15:20 Joe Todd: “Calving style and environmental sensitivity of a Greenland outlet glacier from discrete & finite element modelling”

15:20-15:40 Julia Christmann: “Tidally induced variation of horizontal displacements at the 79°N Glacier, Greenland”

15:40-16:00 Afternoon tea
Tour of Queens College Library (limited spaces)

16:00-18:00 Posters

19:30 Conference dinner

Wednesday 18 September

7:45-8:45 Breakfast

9:00-10:40 Session 7: Circumpolar and Amundsen
Chair: Xylar Asay-Davis

9:00-9:20 Chad A. Greene: “Satellite observations of Antarctic ice velocity variability”

9:20-9:40 Helen Amanda Fricker: “A new view of Antarctica's ice shelves from ICESat-2”

9:40-10:00 Susheel Adusumilli: “Partitioning meltwater fluxes from Antarctica's large ice shelves into the intermediate and upper ocean”

10:00-10:20 David Bett: “The effect of the Amundsen Sea freshwater balance on ocean melting of the West Antarctic Ice Sheet”

10:20-10:40 Paul Holland: “Climate Forcing of the West Antarctic Ice Sheet: Anthropogenic Trends and Internal Climate Variability”

10:40-11:10 Morning tea

11:10-12:30 Session 8: Amundsen (cont’d)
Chair: Kaitlin Naughten

11:10-11:30 Pierre Dutrieux: “Seaglider and Float Observations Beneath Dotson Ice Shelf, West Antarctica”

11:30-11:50 Yixi Zheng: “Winter distribution of meltwater in front of Pine Island Bay revealed by seals”

11:50-12:10 Yoshihiro Nakayama: “Pathways of ocean heat towards Pine Island and Thwaites grounding lines”

12:10-12:30 J. Paul Winberry: “Precursory Seismicity and Glacial Earthquakes during Thwaites Glacier calving”

12:30 Lunch and close of conference

Posters

Sridhar Anandakrishnan	Bathymetry at the Thwaites Grounding Zone
Shigeru Aoki	Glacial meltwater fraction in the Antarctic shelf waters derived from stable oxygen isotope
Jan Erik Arndt	Past pinning points of Pine Island Glacier and the Brunt Ice Shelf mapped by swath bathymetry
Xylar Asay-Davis	Regional and global impacts of Antarctic ice-shelf melt fluxes in Energy Exascale Earth System Model (E3SM) preindustrial and historical simulations
Jowan Barnes	Assessment of plume routing methods for calculating basal melt in an ice flow model
Louise Biddle	The effect of glacial meltwater on the stability of the water column in the Amundsen Sea
Guilherme A. Bortolotto	How CTD-tagged seals are helping to monitor the Amundsen sea
Christopher Bull	Remote control of Ronne Filchner melt rates by the Antarctic Slope Current
Anna Crawford (presented by Doug Benn)	Towards a Physically Based Rate Law for Marine Ice-cliff Instability
Kjersti Daae	Seasonal variability over the southern Weddell Sea continental shelf and slope
Elin Darelius	APRES observation from the Fimbull ice shelf, East Antarctica
Peter Davis	Turbulence beneath the Larsen-C Ice Shelf, Antarctica
Jan De Rydt	Úa-MITgcm: a toolkit for coupled ice-ocean simulations
Vår Dundas	Oceanic heat transport towards Getz ice shelf, Amundsen Sea, Antarctica
Roberto Grilli	Subsea Water Isotope Sensors: A novel tool for continuous and in-situ analysis
Damien Guihen	Trials of an Autonomous Underwater Vehicle at the Sørsdal Glacier, and the toolboxes in development to support future missions
Jingxue Guo	Physical characterization of Amery Ice Shelf and the subglacial environment using recently-acquired CHINARE airborne survey data
Tore Hattermann	Modelling the effects of small-scale topography on ocean/ice shelf interactions
Karen Heywood	Thwaites Glacier and the Amundsen Sea Embayment: The TARSAN Project
Emily Hill	Quantifying uncertainty in future projections of ice loss from the Filchner-Ronne Ice Shelf System
Coen Hofstede	Tracking an ice shelf channel of Support Force Glacier (West Antarctica) using refection seismics: consequences for the ice dynamics and subglacial sedimentation.
Hannes Hollmann	High complexity in the structure of the firn; seismic observations

	from the Amery Ice Shelf, East Antarctica
Robert Larter	Influence of bathymetry on Thwaites Glacier ice shelf thinning, calving and grounding line retreat from new high-resolution data
Justin Lawrence	Ice-ocean interactions influence microbial diversity under ice
Seung Hyun Lee	Effect of localized high basal melting on transient subglacial water flow evolution beneath Campbell Glacier, Antarctica
Shelley MacDonell	The impact of liquid water on ice shelf dynamics
Stefanie Mack	Coupled ice sheet-ocean modeling: shareable and reproducible with containerization software
Oliver Marsh	Observations of Fracture on the Brunt Ice Shelf
Andrew Mullen	Development Of A Submersible Water Sampling & Microbial Imaging System For The Icefin ROV
Kaitlin Naughten	Coupled ice sheet-ocean modelling of the Filchner-Ronne Ice Shelf cavity
Kaitlin Naughten	Gender equality at FRISP: How are we doing?
Svein Østerhus	Weddell Watch
Petra Langebroek	Tipping Points in Antarctic Climate Components (TiPACCs)
Ryan Patmore	Modelling the ice shelf-ocean boundary layer in a general circulation model framework
Charles Pelletier	Investigating the ice shelf melt impact on the upper Southern Ocean heat content and sea ice extent using coupled Antarctic-wide numerical models
Ronja Reese	Antarctic Ice Sheet model simulations with PISM+PICO
Natalie Robinson	Dynamic processes in a supercooled ISW plume: tales from the Victoria Land Coast Current
Sebastian Rosier	Exploring mechanisms responsible for tidal modulation in flow of the Filchner-Ronne Ice Shelf
Alessandro Silvano	Seasonality of warm water intrusions onto the continental shelf near the Totten Glacier
Nadine Steiger	Oceanic processes at an ice shelf front
David Sutherland (presented by Mike Dinniman)	Grounding zone depth modulates oceanic control on glacier terminus retreat along the west Antarctic Peninsula
Xueyuan Tang	Airborne geophysical survey in Princess Elizabeth's Land, East Antarctica
Ralph Timmermann	Coupled ocean-ice simulation of the Weddell Sea Basin
Guillian Van Achter	A high resolution NEMO-LIM local configuration over Totten area for assessing decadal variability and predictability.
Catherine Vreugdenhil	The effect of tides on the basal-melting of an ice shelf: large-eddy simulations with a near-wall model
Peter Washam	Observations of Subglacial Runoff-Enhanced Basal Melt beneath Petermann Gletscher Ice Shelf, Greenland
Andrew Wells	Ice-shelf rippling and internal layer dynamics from temporally varying melt and ice discharge
C. Rosie Williams	Century-long probabilistic forecasts of sea-level contribution from

	the Amundsen Sea Sector of West Antarctica, constrained by mass balance data.
Ole Zeising	Difficulties of estimating large basal melt rates by pRES measurements at 79°N Glacier, Greenland

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