Session Information

Oral Sessions
Sessions are being held in the Convention Center (CC) and Marriott Marquis (MM)

Poster Sessions
Posters are on display in the following venue throughout the week: Hall A-C (Poster Hall)

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Session & Paper Numbering

Paper Numbers - A paper number designates the section, or other sponsoring group, and chronology of the presentation.
Example: A21A-01 = Atmospheric Sciences, Tuesday, AM, concurrent session A, first paper in that session.

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The program is current as of 06 December 2018. An omitted abstract ID number in the presentation order indicates that the abstract has been withdrawn by the presenter from the session. Please refer to the online program at https://agu.confex.com/agu/fm18/meetingapp.cgi/Home for updates.

Monday A.M.

C11A (CC) Salon H

Monday 0800h

Advances in Ice Sheet–Ocean Interactions: From Measurements to Climate Impacts I (joint with GC, OS)

Presiding: Thomas Armitage, Jet Propulsion Laboratory; Anna Hogg, University of Leeds; Paul Holland, British Antarctic Survey; Fiammetta Straneo, Scripps Institution of Oceanography;

0800h C11A-01 Seaglider and Float Observations Beneath Dotson Ice Shelf, West Antarctica: P Dutrieux, K A Christianson, C Lee, L Rainville, J B Girton, T W Kim, S Lee
Cryosphere: AGU Fall Meeting 2018

0815h C11A-02 Heightened Summer Melting of Petermann Gletscher’s ice shelf, Greenland: P Washam, A Muenchow, K W Nicholls, L Padman

0830h C11A-03 Observations of tidally-varying ocean bottom pressure near the grounding zone of the Ross Ice Shelf: C B Begeman, H M Dailey, M A King, S M Tulaczyk

0845h C11A-04 Ice Shelf Vulnerability to Increased Seasonal Upper Ocean Warming: L Padman, R E Bell, I Das, C Mosbeux, D F Porter, C S Siddoway, M R Siegfried, S R Springer, K J Tinto

0900h C11A-05 High-resolution Surface and Upper Fjord Circulation of Greenland Fjords from Optical Remote Sensing: B Altena, A Kääb

0915h C11A-06 The canary in Wilkes Land: Observations of unexpected marine-terminating glacier change in East Antarctica in response to the changing ocean: C C Walker, A S Gardner, F Paolo, J Nilsson

0930h C11A-07 Interannual to Sub-Daily Fluctuations in Thwaites Glacier Speed Associated with Ocean Forcing and Calving: A O Hoffman, K A Christianson, H J Horgan, S Anandakrishnan, R B Alley, K M Larson

0945h C11A-08 Role of melt forcing in diurnal velocity fluctuations of Helheim Glacier, East Greenland: L A Stevens, M Nettles, J L Davis, T T Creyts, J Kingslake

C11B (CC) Salon G

Monday 0800h

Remote Sensing of Seasonal Snow I (joint with GC, H)

Presiding: McKenzie Skiles, University of Utah; Kathryn Bormann, JPL/NASA/Caltech; Andrew Hedrick, USDA Agricultural Research Service; Oliver Wigmore, University of Colorado at Boulder;

0800h C11B-01 Estimation of Seasonal Snow Water Equivalent Using Landsat Observations: M Girotto, L Huning, S A Margulis, G Cortés, M T Durand

0815h C11B-02 Monitoring the seasonal snow in mountain regions using Sentinel-2: S Gascoin, M Grizzonnet, M Dumont, O Hagolle, G Picard

0830h C11B-03 Optical satellite retrievals of snow physical properties in complex terrain: M Lamare, C Delcourt, F Dumont, L Arnaud, G Picard, M Dumont

0845h C11B-04 Canopy and terrain interactions on spatial distributions of snowpack in the Sierra Nevada: R C Bales, Z Zheng, Q Ma, S Jin, Y Su, Q Guo

0900h C11B-05 Advances in Operational Monitoring of Snow in the Alps using Airborne LiDAR Data: T Jonas, A H Winstral, J Deems, K J Bormann, T H Painter

0915h C11B-06 Snow Depth Changes Over the Alps Using Polarimetric Synthetic Aperture Radar Data: S Manickam, M Braun, A P Barros

0930h C11B-07 Mapping snow mass in the Northern Hemisphere mountains with Sentinel-1: H Lievens, M Demuuzere, G De Lannoy, H P Marshall

0945h C11B-08 Mapping Snow Depth From Ka-band Interferometry: D Moller, B Pollard, K Andreidis, J Carswell, K J Bormann, T H Painter

C11C (CC) Hall A-C (Poster Hall)

Monday 0800h

Glacier Processes from Large-Scale Remote Sensing Posters

Presiding: William Armstrong, Appalachian State University; Twila Moon, University of Colorado at Boulder; Bas Altena, University of Oslo; Amaury Dehecq, California Institute of Technology;

0800h C11C-1125 POSTER Advancements with SpATiA: Semi-Automatic glacier Terminus Inventory from Landsat: S A Goliber, G A Catania

0800h C11C-1126 POSTER Analysis of Seasonal and Regional Variation of the Flow Velocity on Campbell Glacier, East Antarctica, by using DDInSAR Technique.: H Lin, H Han, H Lee

0800h C11C-1127 POSTER Automated Extraction of Alaskan Proglacial Lake Growth Trends Using an Object-based Image Processing Routine: A M Hengst, W H Armstrong Jr

0800h C11C-1128 POSTER Changes in Greenland firn from dual-frequency radar altimetry - A precursor for combined Cryosat-2 and ICESat-2 data exploration: S Simonsen, L Sandberg Sorensen, L Stenseng, R Forsberg

0800h C11C-1129 POSTER Ice Flow Variations at Polar Record Glacier, East Antarctica: Q Liang, C Zhou, I Howat, S Jeong

0800h C11C-1130 POSTER Ice Surface Elevation Changes in the Amundsen Sea Embayment, Antarctica from High-Resolution Satellite Derived Digital Elevation Models: J S Hansen, M J Willis

0800h C11C-1131 POSTER Impact and Improvements of Satellite-based Continent-Wide Monitoring in Antarctica: B Scheuchl, E J Rignot, S Jeong, J Mougnot, M Morlighem
1000h C11C-1132 POSTER Inferring the Three-Component Tidally Induced Variations of Flow Rates at Evans Ice Stream from Systematic SAR Observations: M Simons, M Zhong, L Zhu, F Cigna, E Flamini

1000h C11C-1133 POSTER A new velocity-based method to estimate glacier thickness: Z Sun, H Lee, D Farinotti, C K Shum, A Braun


1000h C11C-1136 POSTER Mass Balance of the Russian High Arctic Archipelago Between 2002 and 2017: E Ciraci, I Velicogna

1000h C11C-1137 POSTER Multidecadal Climate Response of Outlet Glaciers in Northwestern and West Central Greenland: T E Black, I R Joughin

1000h C11C-1138 POSTER Parameterizing Glacier Retreat and Thinning: A Case Study in High Mountain Asia: P K Takata-Glushkoff, D Rounce, R Hock, D E Shean

1000h C11C-1139 POSTER The evolution of a large glacier surge of Vavilov Ice Cap, Severnaya Zemlya, since 2013: W Zheng, M E Pritchard, M J Willis, W J Durkin IV, L A Stearns

1000h C11C-1140 POSTER Time Series Frontal Line Extracting in Amery Ice shelf Using Sentinel-1 SAR Imagery: Y Zhang, T Zhu

1000h C11C-1141 POSTER Towards Long-term Grounding Line Monitoring in Antarctica: S Jeong, B Scheuchl, E J Rignot, J Mouginot, P Milillo

1000h C11C-1142 POSTER Variations in Ice Speed at a Rapidly Retreating Glacier: Yakutat Glacier, Alaska: J Elliott, J Spinolo, M Truffer, M E Pritchard, R J Motyka

1020h C12A-02 Retrieval of Snow Water Equivalent from active and passive ground-based and airborne observations during the NoSREx campaign: J Lemmetyinen, C Derksen, H Rott, G Macelloni, J M King, M Schneebeli, A Wiesmann, L Leppänen, A Kontu, J Pulliainen

1020h C12A-03 Quantification of Snow Water Equivalent Using Buried Low Cost GPS Antennas in Alpine Terrain: L Steiner, M Meindl, A Geiger


1020h C12A-06 A Combined Active and Passive SWE Retrieval Algorithm Using SnowEx 2017 and Finland NoSREx datasets: J Zhu, S Tan, L Tsang, E J Kim, D H D Kang

1020h C12A-07 Polarimetric and interferometric analysis of L-Band airborne data over Western United States during the NASA SnowEx 2017 field campaign: E J Deeb, H P Marshall, R R Forster, C E Jones, M Lavalle

1020h C12A-08 Using Low Cost Commercial UAVs to Measure Snow Depth and Surface Change: M Salgado, A G Klein

C12B (CC) Salon H

Monday 1020h

Advances in Ice Sheet–Ocean Interactions: From Measurements to Climate Impacts II (joint with GC, OS)

Presiding: Thomas Armitage, Jet Propulsion Laboratory; Anna Hogg, University of Leeds; Paul Holland, British Antarctic Survey; Fiammetta Straneo, Scripps Institution of Oceanography;

1020h C12B-01 Topographic controls on marine-terminating glacier dynamic response in Greenland: G A Catania, D Felistone, T C Bartholomau, M Morlighem, L A Stearns

1035h C12B-02 Grounding zone depth modulates oceanic control on glacier terminus retreat along the west Antarctic Peninsula: K L Riverman, D A Sutherland, R Obermeyer, B Aguilar-González, C F Moffat, M S Dinniman, J M Klinck II
1050h **C12B-03** Concentrated basal melt under Antarctic Ice Shelves: **N Gourmelen**, D Goldberg, J S Greenbaum, S Kimura, K Snow

1105h **C12B-04** Ice shelf shear margins and sub-ice-shelf channels: Investigating stability impacts on Pine Island Glacier: **K E Alley**, T Scambos, N D Holschuh, R B Alley, S F Child, M Willis, J S Hansen, D E Shean

1120h **C12B-05** Elevated ambient melting and large melt intrusions at a tidewater glacier: **R H Jackson**, J D Nash, J M Amundson, D A Sutherland, C Kienholz, E D Skyllingstad, R J Motyka

1135h **C12B-06** Estimating submarine melting around the Greenland Ice Sheet: **D Slater**, F Straneo

1150h **C12B-07** High-resolution numerical ocean model illustrates how ice-sheet ocean interactions impact the biological pump of an Antarctic coastal polynya: **P L Yager**, P St-Laurent, H Oliver, R M Sherrell, S E Stammerjohn, M S Dinniman

1205h **C12B-08** Time-varying freshwater fluxes from Antarctic ice shelves: **S Adusumilli**, H A Fricker, L Padman, M R Siegfried
Monday P.M.

C13A  (CC) Salon H

Monday  1340h

Glacier Front Dynamics and the Fate of Icebergs I  (joint with GC, OS)

Presiding:  Till Wagner, University of California San Diego; Ian Fenty, NASA Jet Propulsion Laboratory; Ellyn Enderlin, Climate Change Institute; Ala Khazendar, NASA Jet Propulsion Laboratory;

1340h  C13A-01  Greenland freshwater production and the iceberg environment: T A Moon, D A Sutherland, K L Laidre, K M Schild

1355h  C13A-02  Linking the atmosphere and ice dynamics in Greenland: A Boghosian, B M Csatho, M Tedesco, R E Bell, D F Porter, P M Alexander, N Schlegel

1425h  C13A-04  Flow driven fracture: controls on the location, timing, and rate of ice shelf rift propagation: B P Lipovsky, D R MacAyeal, C L Hulbe

1440h  C13A-05  Assessing the role of ocean warming in the widespread retreat of Greenland’s marine-terminating glaciers over the past three decades: M Wood, E J Rignot, I G Fenty, D Menemenlis, R Millan, J Mouginot, M Morlighem

1455h  C13A-06  Hydraulic Link between Glacier-dammed Lake and Meltwater Plume Revealed by Seismic Tremor, Time-lapse Imagery, Radar and Mooring: E Podolsky, S Sugiyama, N Kanna, F Walter, R Genco, M Funk


1525h  C13A-08  Moving Beyond the Tip of the Iceberg: What We Can Learn from Subsurface Imagery: D Sutherland, K M Schild, E Eidam, J M Amundson, D Carroll, D Duncan, P Elosegui, R H Jackson, C Kienholz, R J Motyka, J D Nash


C13B  (CC) Hall A-C (Poster Hall)

Monday  1340h

Altimetry of the Cryosphere and Polar Oceans Posters  (joint with G, OS)

Presiding: Anna Hogg, CPOM, University of Leeds; Thomas Armitage, Jet Propulsion Laboratory; Sebastian Simonsen, DTU Space; Amandine Guillot, CNES;

1340h  C13B-1143  POSTER Improved surface reconstruction of the Northeast Greenland Ice Stream and application to modeling ice dynamics: A Narkevic, B M Csatho, A F Schenk, N Schlegel, C Nuth

1340h  C13B-1145  POSTER Antarctic Ice Shelf Thickness Change from Multi-Mission Lidar Mapping: T C Sutterley, T Markus, T Neumann

1340h  C13B-1146  POSTER Changing Arctic Sea-ice Thickness observed by Radar Altimetry: S Hendricks, R Ricker, S Paul, E J Rinne

1340h  C13B-1147  POSTER Closing the loop on elevation change at Summit, Greenland: R L Hawley, K M Brunt, T Neumann, J L Saba, T C Sutterley

1340h  C13B-1149  POSTER Inland Ice-Sheet Bed Topography Estimations from Satellite Surface Measurements and a Dedicated Physical Based Model: J Monnier, J Zhu

1340h  C13B-1150  POSTER Long term sea-ice thickness record from satellite altimeters: Towards global sea-ice volume estimates from space and application to climate change studies: F Garnier, S Fleury, K Guerreiro, B Meyssignac, A Laforge, F Birol

1340h  C13B-1151  POSTER Retrieval of Sea Surface and Sea-ice Parameters in the Arctic Ocean from Satellite Radar Altimetry with Ocean/Sea-ice Processing Continuity: P Prandi, J C Poisson, P Thibaut, Y Faugere, A Guillot, F Boy, N Picot

1340h  C13B-1152  POSTER Spatial analysis of the arctic sea level budget: C A Ludwigsen, O B Andersen, S K Rose, S A Khan, P Knudsen


1340h  C13B-1154  POSTER Temporal and spatial variability in surface roughness and snow accumulation rate around 88°S from repeat high-resolution airborne data: M Studinger, B Medley, K Casey, T Neumann, K M Brunt, T B Overly

C13C  (CC) Hall A-C (Poster Hall)

Monday  1340h

GRACE-FO and ICESat-2: NASA’s Newest Missions for Cryospheric Science Posters  (joint with G)

Presiding: Tom Neumann, NASA Goddard Space Flight Ctr.; Felix Landerer, Jet Propulsion Laboratory;
Monday 1340h

Advancements in Measurement of Snow Water Equivalent Using Coincident Ground and Airborne Data Posters (joint with H)

Presiding: Dorothy Hall, University of Maryland; Nick Rutter, Northumbria University; Lundquist Jessica, University of Washington;
### C13E  (CC) Hall A-C (Poster Hall)

**Monday  1340h**

**Remote Sensing of Seasonal Snow Posters**  
*(joint with GC, H)*

**Presiding:** McKenzie Skiles, University of Utah;  
Kathryn Bormann, JPL/NASA/Caltech; Andrew Hedrick, USDA Agricultural Research Service; Oliver Wigmore, University of Colorado at Boulder;

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<td>1340h</td>
<td><strong>C13E-1183</strong> POSTER Uncertainty Quantification and Reduced-Order Error Modeling for Microwave Remote Sensing of Snow</td>
<td>Y Cao, A P Barros</td>
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<td>1340h</td>
<td><strong>C13E-1184</strong> POSTER Continuous Validation of EUMETSAT-HSAF Fractional Snow Cover Product (H12) by using Sentinel-2A Data</td>
<td>Z Akyurek, S Kuter</td>
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<td>1340h</td>
<td><strong>C13E-1185</strong> POSTER Global Snow Depth Retrieval from Microwave Brightness Temperature Measurements and Ground in situ Observations</td>
<td>X Xu, X Li, X Liu</td>
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<td>1340h</td>
<td><strong>C13E-1186</strong> POSTER Decadal Monitoring of Snow Coverage by using High-Resolution MODIS Product over Himalayas</td>
<td>N Sanjel, S Ojha</td>
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<td><strong>C13E-1187</strong> POSTER Determining Snow Line Elevation in the Hindu Kush Himalaya from 2000 to 2017 using MODSCAG</td>
<td>C Ackroyd, M Skiles, K J Bormann</td>
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<td>1340h</td>
<td><strong>C13E-1188</strong> POSTER Improving MODIS Snow Cover Product’s Accuracy over Western Himalayas using MODIS LST Data</td>
<td>A Chandrasekharan, S Kulshrestha, R Ramsankaran</td>
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### C13F  (CC) Hall A-C (Poster Hall)

**Monday  1340h**

**Dust, Black Carbon, and Other Aerosols in the Cryosphere Posters**  
*(joint with A, GC, H)*

**Presiding:** McKenzie Skiles, University of Utah;  
Thomas Painter, Jet Propulsion Laboratory; Susan Kaspari, Central Washington University; Alia Khan, Colorado University Boulder;

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<td>1340h</td>
<td><strong>C13F-1200</strong> POSTER Recent Advances in the Characterization of Light Absorbing Particles Using a Hyperspectral Imaging Microscope Spectrometer and a Scanning Electron Microscope</td>
<td>S Kaspari, M Swick, A Halfpenny, C LaPorta, R Blanchard, R Keister</td>
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1340h C13F-1201 POSTER The shortwave light absorption properties of aerosol particles deposited in fresh snow samples: M Schnaiter, C Linke, I Ibrahim, F Waite, T Rehm

1340h C13F-1202 POSTER A Step in Understanding Glacial Flow: Exploring the Effects of Entrained Insoluble Debris on Mechanical Properties of Polycrystalline ice: A Rivera, C McCarthy

1340h C13F-1203 POSTER Spatial variability of black carbon on glaciers in the eastern Alaskan Range, Alaska USA: K Konya, T Miyakawa, M Takigawa, M Yamaguchi, S O’Neal, M Truffer, D Clemens-Sewall, I R Lee

1340h C13F-1204 POSTER 7000 year of aerosol deposition to the Alps from the Ortles ice core: P Gabrielli, C Barbante, M Bertò, L Carturan, M E Davis, G Dreossi, P N Lin, B Stenni

1340h C13F-1205 POSTER Measurements of black carbon and its impact over Vatnajökull Ice Cap in southeast Iceland on 2018: I M Cintron-Rodriguez, M Mazurek

1340h C13F-1206 POSTER Investigating the Potential Contribution of Forest Fires to Widespread Melt of Greenland Ice Sheet in 2012: X Pan, P R Colarco, S Nowicki, M Chin, R I Cullather

1340h C13F-1207 POSTER Interannual Variability of Dust-Mass Loading and Composition of Dust Deposited on Snow Cover in the San Juan Mountains, CO, USA: Insights into Effects on Snow Melt: H L Goldstein, R L Reynolds, J Derry, R F Kokaly, B M Moskowitz

1340h C13F-1208 POSTER Spatial and temporal changes in aerosol radiative forcing on glaciers in the eastern Himalaya: M Olson, S Rupper, M Skiles

1340h C13F-1209 POSTER Contrasting the main processes for snow albedo reduction in High Mountain Asia and Colorado.: H G V Chan, P A Ginoux, S B Kapnick, S Malysh, E Shevliakova

1340h C13F-1210 POSTER Light-Absorbing Impurities in Snow Cover Surface across the Northern Xinjiang: X Zhong, K Shichang, L Xiaofei, J Yang, Y Liu, W Zhang, Y Zhang, P Chen


1340h C13F-1212 POSTER Long Range Transport and Wet Deposition Fluxes of Major Ions in Snow at North Western Himalayas (India): A Sharma, U C Kulshrestha

C13G (CC) Hall A-C (Poster Hall)

Monday 1340h

Recent Advances in Monitoring, Measuring, and Modeling Snow Processes Posters 😊

Presiding: Danny Marks, USDA-ARS; Andrew Hedrick, USDA-ARS; Ernesto Trujillo, USDA-ARS;


1340h C13G-1214 POSTER Sensitivity of Seasonal Snowpack Longevity to Nocturnal Cold Content Injection: S A Drake, C W Higgins


1340h C13G-1216 POSTER Near-real time monitoring of snow water equivalent, depth and density at a high-altitude site in Nepal: I Koch, J Kirkham, T M Saloranta, M Litt, E Stigter, K Møen, K Melvold, A Thapa, W W Immerzeel

1340h C13G-1217 POSTER Snow Radar Measurements over Alaska Mountains, Icefields and Glaciers as part of the Operation IceBridge: J D Paden, J Li, F Rodriguez-Morales, E Arnold, C Leuschen, J Shang, D Gomez-Garcia, C Larsen

1340h C13G-1218 POSTER Long term measurements of impact of precipitation on fixed radio links in the millimeter wave band.: S Salous, S Salous

C13H (CC) Hall A-C (Poster Hall)

Monday 1340h

Modeling of the Cryosphere: Seasonal Snow Posters (joint with H)

Presiding: Adam Winstral, WSL Institute for Snow and Avalanche Research SLF; Mark Raleigh, University Corporation for Atmospheric Research;

1340h C13H-1219 POSTER Anemometric versus Geometric Snow Surface Roughness Length Comparison for a Shallow Snowpack: J Sanow, S R Fassnacht, D Kamin, R Pasquini, I Oprea, W Bauerle, R A Gilbert, G A Sexstone

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1340h **C13H-1220 POSTER** Spatial Snow Surface Roughness across Multiple Resolutions: B M Simms, S R Fassnacht, E Thomas

1340h **C13H-1223 POSTER** Comparison between a single-layer snow model and a multi-layer snow model for snow-water-equivalent modeling: J Augas, A N Rousseau, S Savary, L Caillouet, M Baraer

1340h **C13H-1224 POSTER** Assessment of sensitivity and uncertainty of snow simulation by multi-parameterization schemes combination in Noah-MP model: C Huang, W Wang, Y You Sr

1340h **C13H-1225 POSTER** Assessing effects of the choice of meteorological forcing datasets and downscaling methods on distributed snow simulations in a mountainous catchment: T Xu, C Tyson


1340h **C13H-1227 POSTER** Impact of Precipitation Uncertainty on High-Resolution Snow Simulations over Western US Mountain Regions: C He, F Chen, M J Barlage, C Liu, A J Newman

1340h **C13H-1228 POSTER** Citizen Scientists and Seasonal Snow Modeling: Constraining Outputs by Using Avalanche Probes and Smartphones: R L Crumley, D F Hill, A A Arendt, K Wikstrom Jones, G J Wolken

1340h **C13H-1229 POSTER** The High Resolution Rapid Refresh Atmospheric Model to Supplement a Sparse Measurement Network for Snow Modeling: S Havens, D G Marks, E Trujillo, A R Hedrick, M Johnson, M Robertson, M Sandusky

1340h **C13H-1230 POSTER** Streamflow and snowpack in the Tuolumne River Basin of California: A K D Pfohl, S R Fassnacht

1340h **C13I-1233 POSTER** Spatio-temporal Analysis of Snow Cover Variations in the Upper Rio Grande Basin Using MODIS Snow Products and In Situ Data (2002-2017): Y Huang, H Liu, B Yu, J Wu

1340h **C13I-1234 POSTER** Assessment of Uncertainties in the MODIS and NASA VIIRS Cloud-Gap Filled Snow Maps: D K Hall, J Woods, G A Riggs Jr, N E DiGirolamo

1340h **C13I-1235 POSTER** Measurement of seasonal snow depth via time-lapse photography and automated image recognition: K S J Brown

1340h **C13I-1236 POSTER** Spatial variability of snow and its impact on tundra vegetation: the case of Bylot Island, Canadian Arctic: M Loyer, C Kinnard

1340h **C13I-1237 POSTER** Forecasting Short-Term Changes in Snowmelt due to Dust Impacts on Snow Albedo: C Duncan, S R Fassnacht, J Derry

1340h **C13I-1238 POSTER** Temperature and Melt Rate Inversions in the Accumulation Zone of Eklutna Glacier, Southcentral Alaska, USA: J E Geck, R J Dial, S Sawicki

1340h **C13I-1239 POSTER** The Effect of Black Carbon Deposition on the Albedo Change of the Columbia Icefield, 2000-2016: A Naemi, M J Sharp, C Mortimer

1340h **C13I-1240 POSTER** Bulk Diffusivity of Polar Firn Derived from In-Situ Temperature Propagation at 15 Sites: D Clemens-Sewall, R L Hawley, M R Albert, A L Giese

1340h **C13I-1241 POSTER** An inter-comparison of five snow water equivalent estimation methods in the Sierra Nevada Mountains, California: K Yang, K N Musselman, D Schneider, T H Painter, S A Margulis, K Ritterger, N Bair, N P Molotch

1340h **C13I-1242 POSTER** Cluster Analysis of Daily Snow Water Equivalent Across the Pacific Northwest: S R Kelly, P C Loikith, C Aragon


1340h **C13I-1244 POSTER** Exploiting High Resolution CETB Statistics to Detect and Characterize Dynamic Surfaces: J M Ramage, M Johnson, M J Brodzik, T J Troy, M Hardman, D G Long

1340h **C13I-1245 POSTER** Integrating the Fokker-Planck approach for sub-grid variability of snow depth into the RUC land-surface model: Preliminary results from offline ESM-SnowMIP site simulations: S He, T G Smirnova, S Benjamin, G A Grell
C13J  (CC) Hall A-C (Poster Hall)

Monday  1340h

Reproducible Science in Water Resources: Cryosphere and Hydrology Posters (joint with H, IN)

Presiding: Scott Havens, USDA-ARS, Northwest Watershed Research Center; Danny Marks, USDA-ARS; Mukesh Kumar, Duke University; Christina Bandaragoda, University of Washington;

1340h  C13J-1251 POSTER A Framework for Reproducible Research in Computational Hydrology using Python: B Yadav, K Hatfield

1340h  C13J-1252 POSTER Leveraging Scientific Cyberinfrastructures to Achieve Computational Hydrologic Model Reproducibility: J M Sadler, B T Essawy, J L Goodall, D Voce, Y CHOI, M M Morsy, Z Yuan, T Malik

1340h  C13J-1253 POSTER Measuring Replicability to Promote Reproducibility in Hydrology: J H Stagge, D E Rosenberg, A Abdallah, H Akbar, R James, N Atallah


1340h  C13J-1255 POSTER Striving for Reproducibility in Hydrologic Science: Lessons Learned from Developing the TopoFlow Hydrologic Model: S D Peckham


C14A  (CC) Salon H

Monday  1600h

Glacier Processes from Large-Scale Remote Sensing I

Presiding: William Armstrong, Appalachian State University; Twila Moon, University of Colorado at Boulder; Bas Altena, University of Oslo; Amaury Dehecq, California Institute of Technology;


1615h  C14A-02B ITS_LIVE: A new NASA MEaSUREs initiative to track the movement of the world’s ice: A S Gardner, M A Fahnestock, P S Agram, T Scambos, J Nilsson, F S Paolo, C C Walker, F J Meyer, A Dehecq

1630h  C14A-03 Greenland-wide Glacier Response to Runoff and Retreat: Evaluating Outlet Glacier Changes on Monthly to Multi-year Scales: M D King, I Howat, S Jeong, M J Noh, B Noel, M R van den Broeke, B Wouters

1645h  C14A-04 Semi-periodic Dynamic Thickening of a Tidewater Glacier in Koge Bugt, Greenland: R Cassotto, M J Willis, M G Bevis, M J MacFerrin

1700h  C14A-05 Glacier elevation and mass changes over whole South America derived from satellite InSAR data between 2000 and 2011–15: T Seehaus, P Malz, C Sommer, D Farías, M Braun, S Tobias

1715h  C14A-06 25 years of satellite observations of glaciological change on the Antarctic Peninsula: A Hogg, A Shepherd, N Gourmelen, J Wuite, M Horwath, A S Muir, S Tobias

1730h  C14A-07 Analyzing laser altimetry time series with SERAC and machine learning to investigate subglacial control on Antarctic ice sheet dynamics: B M Csatho, G S Babonis, A F Schenk, P Shekhar, A K Patra

Session Information
Oral Sessions
Sessions are being held in the Convention Center (CC) and Marriott Marquis (MM)
Poster Sessions
Posters are on display in the following venue throughout the week:
Hall A-C (Poster Hall)

Session & Paper Numbering
Paper Numbers - A paper number designates the section, or other sponsoring group, and chronology of the presentation.
Example: A21A-01 = Atmospheric Sciences, Tuesday, AM, concurrent session A, first paper in that session.

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Day  Time
1 = Monday  1 = AM 0800–1000
2 = Tuesday  2 = AM 1020–1220
3 = Wednesday  3 = PM 1340–1540
4 = Thursday  4 = PM 1600–1800
5 = Friday  5 = PM 1815–1915

The program is current as of 06 December 2018. An omitted abstract ID number in the presentation order indicates that the abstract has been withdrawn by the presenter from the session. Please refer to the online program at https://agu.confex.com/agu/fm18/meetingapp.cgi/Home for updates.

Tuesday A.M.

C21A  (CC) Salon H
Tuesday  0800h
Altimetry of the Cryosphere and Polar Oceans I
(joint with G, OS)
Presiding: Anna Hogg, CPOM, University of Leeds; Thomas Armitage, Jet Propulsion Laboratory; Sebastian Simonsen, DTU Space; Amandine Guillot, CNES;

0800h  C21A-01 Long term satellite record of Arctic sea ice thickness reveals slower sea ice loss than expected while confirming present day ocean mass changes and their contribution to sea level rise: B Meyssignac, K Guerreiro, W Llovel, S Fleury, S G Purkey, F Birol, M Chevallier, A Laforge, F Garnier

0800h **C21B-1315** POSTER A Simplified Approach for Estimating Seasonal Variations in Iceberg Freshwater Flux into Glacial Fjords using High-resolution Satellite Imagery: A N Moyer, D A Sutherland, P W Nienow, A J Sole, N Gourmelen

0800h **C21B-1316** POSTER Icebergs as Depth Sounders: Improving Bathymetry Maps in Uncharted Regions: J Scheick, E M Enderlin, E E Miller, G S Hamilton

0800h **C21B-1317** POSTER Thermal Imagery Tracks the Calving and Movement of Iceberg A-68 from the Larsen C Ice Shelf, 2017-2018: C A Shuman, J E Schmaltz, T A Scambos

0800h **C21B-1318** POSTER ACCURACY ASSESSMENT OF ICEBERG DRIFT MODELS OVER SHORT TIME SCALES: R Saper, D Mueller, J Marko, D B Fisell

0800h **C21B-1319** POSTER OMG: Broad-scale ocean cooling across the continental shelf in Northwest: Does it reach Greenland’s glaciers through the fjords?: J K Willis, I G Fenty, A Khazendar

0800h **C21B-1320** POSTER Quantifying Tidewater Glacier Surface Displacements Using Autonomous Multi-Temporal Terrestrial LiDAR Scanning; Helheim Glacier Greenland: D C Finnegan, L A Stearns, A L LeWinter, M C Dryak, L An, E M Enderlin, E E Miller

0800h **C21B-1321** POSTER Bathymetry Mapping in SouthEast Greenland Using OMG High-Resolution Airborne Gravity Data: L An, E J Rignot, R Millan, K J Tinto, J K Willis, M Morlighem, M Wood

0800h **C21B-1322** POSTER Variability in Antarctic iceberg melt rates and connections to changes in near-term glacier elevation and extent: M C Dryak, E M Enderlin, E E Miller

0800h **C21B-1323** POSTER Rapid retreat of Bowdoin Glacier in northwestern Greenland controlled by the ocean and glacier bed geometry: I Asaji, D Sakakibara, S Yamasaki, S Sugiyama

0800h **C21B-1324** POSTER Seasonal, Decadal, and Change Point Behavior in Outlet Glacier Termini Positions, Disko and Uummannaq Bay, West Greenland: A York, K E Frey, S B Das, S Jamali
0800h **C21B-1325 POSTER** Large spatial variations in the frontal mass budget of a Greenland tidewater glacier.: **T J W Wagner, F Straneo, C Richards, D Slater, L A Stevens, S B Das, H Singh**

0800h **C21B-1326 POSTER** Investigating the Relationship Between Southern Ocean Temperature Variability and Iceberg Melting Around Antarctica: **E E Miller, E M Enderlin, A C Thomas, M C Dryak**

0800h **C21B-1327 POSTER** Continuous Terrestrial LiDAR data of Helheim Glacier to quantify ice-ocean interactions: **A LeWinter, L A Sterns, D C Finnegan, P J Gadomski, A S Fowler, C M Kershner, G Hanlon**

0800h **C21B-1328 POSTER** Cauldron Collapse Provides Natural Laboratory to Constrain Ice-Fracture Thresholds: **E Ultee, B M Minchew, C R Meyer, T Johannesson**

0800h **C21B-1329 POSTER** Automatically delineating terminus of Jakobshavn Isbrae from multi-sensor remote sensing imagery based on deep learning: **E Zhang, L Liu, L Huang**

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**C21C (CC) Hall A-C (Poster Hall)**

**Tuesday 0800h**

**Advances in Ice Sheet–Ocean Interactions: From Measurements to Climate Impacts Posters (joint with GC, OS)**

*Presiding: Thomas Armitage, Jet Propulsion Laboratory; Anna Hogg, University of Leeds; Paul Holland, British Antarctic Survey; Fiammetta Straneo, Scripps Institution of Oceanography;*

0800h **C21C-1330 POSTER** A Greatly Improved 25-year Record of Ice Shelf Elevation at High Temporal and Spatial Resolution: **F Paolo, J Nilsson, A S Gardner**

0800h **C21C-1331 POSTER** A Near-Uniform Sea Level and Ocean Bottom Pressure Fluctuation and its Associated Change in Ocean Temperature over the Antarctic Continental Shelf: **I Fukumori, O Wang, I G Fenty**

0800h **C21C-1332 POSTER** An Updated Antarctica Coastline Extracted Automatically from Remote Sensing Data: **Y Yu, F Hui, X Li, Z Chen, X Cheng**

0800h **C21C-1333 POSTER** Bathymetry Beneath the Getz Ice Shelf from IceBridge Gravity Data: Implications for Ocean-Ice Interactions: **J R Cochran, K J Tinto**

0800h **C21C-1334 POSTER** Beyond J9: A 21st Century return to the Ross Ice Shelf cavity, West Antarctica: **C L Hulbe, C L Stevens, G B Dunbar, A Pyne, D Mandeno, M Forbes**

0800h **C21C-1335 POSTER** Developing a coupled ice sheet-ocean model: challenges and progress with terrain-following ocean coordinates: **S L Mack, D Shapero, R M Gladstone, D Gwyther, B Galton-Fenzi, I R Joughin, S R Springer, P Dutrieux, L Padman**

0800h **C21C-1336 POSTER** Direct and Indirect Contributions of the Cryosphere to Micronutrient Supply to the Open Surface Waters around Antarctica: **M S Dinniman, P St-Laurent, K R Arrigo, E E Hofmann, G van Dijken**

0800h **C21C-1337 POSTER** Dynamic and Thermodynamic Renewal Processes in Greenland’s Fjords: **K Zhao, A Stewart, J C McWilliams**

0800h **C21C-1338 POSTER** Dynamic small-scale morphology and mass-loss processes near the fronts of Antarctica’s large ice shelves: **M K Becker, H A Fricker, I Padman, M R Siegfried, C Mosbeux, T J Wagner**

0800h **C21C-1339 POSTER** Dynamics of the subglacial discharge plume generated in a two-layer stratified fjord (Sarquardleq, Greenland): scalings and implications of the neutral buoyancy height: **E De Andres, D Slater, F Straneo**

0800h **C21C-1340 POSTER** Freshwater budgets for the ocean east of Greenland: **I Le Bras, N Beard, F Straneo**

0800h **C21C-1342 POSTER** High-frequency Forcing of Near-terminus Water Properties at LeConte Glacier, Southeast Alaska: **A Hager, D Sutherland, C Kienholz, R H Jackson, J M Amundson, J D Nash, R J Motyka, W P Dryer**

0800h **C21C-1343 POSTER** Ice-shelf secondary flow counteracts growth of sub-ice-shelf channels: **M Wearing, L A Stevens, P Dutrieux, J Kingslake**

0800h **C21C-1344 POSTER** Impacts on water-mass transformation from ice shelf melting over the Southern Ocean: **H Jeong, X Asay-Davis, A K Turner, D Comeau, S F Price, M R Petersen, R P Abernathey**

0800h **C21C-1345 POSTER** Improving mass balance estimates of large outlet glaciers from the Greenland Ice Sheet: **K K Kjeldsen, S A Khan, W T Colgan, R S Fausto**

0800h **C21C-1346 POSTER** InSAR for tide modelling in Antarctic ice-shelf grounding zones: **C T Wild, O Marsh, W Rack**

0800h **C21C-1347 POSTER** New insights on Antarctic ice shelf basal channels from Reference Elevation Model of Antarctica (REMA) digital elevation models: **A Chartrand, I Howat, M J Noh, M D King**
0800h C21C-1348 POSTER Ocean Warming Drives Increased Mass Loss at 79 North Glacier, Northeast Greenland: M R Lindeman, F Straneo, J Schaffer, L de Steur, T Kanzow

0800h C21C-1349 POSTER Only skin deep? Linking sea surface temperatures with glacier discharge and deep fjord temperature change: T Snow, S Skinner, F Straneo, T A Scambos, W Abdalati

0800h C21C-1350 POSTER Pathways and fates of the warm Atlantic Intermediate Water toward 79NG Glacier Northeast Greenland: Y He, I M Koszalka, M S Sprecht, C Wegerle, J Schaffer, T Kanzow

0800h C21C-1351 POSTER Preliminary investigation of the interaction between Antarctic ice shelf and sea ice: X Cheng

0800h C21C-1352 POSTER Sub-shelf melt parameterizations overestimate ice loss in stand-alone ice sheet modelling: L Favier, N Jourdain, N Merino, G Durand, O Gagliardini, F Gillet-Chaulet, P Mathiot, A Jenkins, M Chekki

0800h C21C-1353 POSTER Sustained, Autonomous Observations Beneath Ice Shelves: C Lee, L Rainville, J I Golat, J B Girton, P Dutrieux, K A Christianson, T W Kim, S H Lee

0800h C21C-1354 POSTER Tectonic setting controls long term stability of Ross Ice Shelf: K J Tinto, R E Bell, I Das, H A Fricker, L Padman, D F Porter, C S Siddoway, M R Siegfried, S R Springer

0800h C21C-1355 POSTER The bathymetric and subglacial hydrological context for basal melting of the West Ice Shelf in East Antarctica: W Wei, J S Greenbaum, N Gourmelen, C F Dow, S Bo, J Guo, T D van Ommen, J L Roberts, D A Young, D D Blankenship


0800h C21C-1358 POSTER Variability and Pathways of Along-Shelf Exchange in the West Antarctic Peninsula: C F Moffat, B Aguilar-González, M S Dinniman, J M Klinck II, D A Sutherland, D P Costa, E W Domack, C Gordo-Rojas, Á Marrero-Díaz, Á Rodríguez-Santana

0800h C21C-1359 POSTER What is this ice: geophysical investigations of a thick accreted basal ice layer at HWD-2, Ross Ice Shelf, Antarctica: C L Hulbe, M Forbes, K Gragg, W Rack, G H Leonard, A R Gorman, C Ohneiser

C21D (CC) Hall A-C (Poster Hall)

Tuesday 0800h

Sea Ice–Ocean–Atmosphere Interactions in the “New” Arctic and Southern Oceans Posters

Presiding: Amy Solomon, University of Colorado Boulder; Michael Steele, Univ Washington; Marilyn Raphael, UCLA;

0800h C21D-1360 POSTER A Comprehensive Analysis of Arctic Cyclones and their Influence on Sea Ice: E A P Schreiber, M C Serreze

0800h C21D-1361 POSTER Are transition season melt events on the Greenland Ice Sheet driven by Baffin Bay sea ice-atmosphere interactions?: T Ballinger, T L Mote, K Mattingly, E Hanna, A C Bliss, D van As, M Prieto, S Gharechahi, X Fettweis, B Noel, P Smeets, M Ribergaard

0800h C21D-1362 POSTER Assessing the response of sea ice, ocean circulation, and climate to projected increases in Antarctic Ice Sheet melt: S Rogstad, A Condon, D Pollard, R M Deconto

0800h C21D-1363 POSTER Contrasting behaviours and compensating biases in CMIP5 representation of Antarctic sea ice: T Bracegirdle, C Holmes, P Holland

0800h C21D-1364 POSTER Current variability and future projections of winter Arctic sea ice thickness: A Petty, M M Holland, D A Bailey, N T Kurtz, T Markus

0800h C21D-1365 POSTER Evaluating a Coupled Air-sea-ice Model for Sub-seasonal Prediction in the Polar Regions: R W Grumbine, D Worthen, A Mehra, A Chawla, J Meixner, X Wu

0800h C21D-1366 POSTER Examining the role of Arctic clouds in sea ice volume loss using satellite observational and modeled data: M D King, D E Veron, H Huntley

0800h C21D-1367 POSTER Examining the role of atmosphere-ocean interactions and ocean circulation changes in the Arctic sea ice response to CO2 forcing.: O A Garuba, H A Singh, P J Rasch

0800h C21D-1368 POSTER Excess Dissolved Neon as a Tracer of Sea Ice Formation in the Arctic Ocean: D Song, P Schlosser, R Newton, A Pasqualini

0800h C21D-1369 POSTER Going to Extremes in the “New” Arctic: L Landrum, M M Holland
Tuesday 0800h

**C21D-1370** POSTER Investigating the Relationship Between Summer Cyclones in the Arctic and Local Changes in Sea Ice Characteristics Through Observations: S T Strey, S M Cavallo

**C21D-1371** POSTER Low-frequency Vibrations in the Coupled Ocean – Ross Ice Shelf – Atmosphere System: N A Zabotin, O A Godin, P D Bromirski, G Jee, W S Lee, S Yun, L Zabotina

**C21D-1372** POSTER Model study showing the impact of floe size distribution on seasonal fragmentation and melt of Arctic sea ice: A Bateson, D L Feltham, D Schroeder, L Hosekova, Y Aksenov, J K Ridley

**C21D-1373** POSTER Modelling the Annual Cycle of Antarctic Sea ice Extent: M N Raphael, M S Handcock

**C21D-1374** POSTER Pancake ice dynamics using shipboard stereo imagery: M Smith, J Thomson

**C21D-1375** POSTER Sea Ice – Ocean Feedbacks in the Antarctic Shelf Seas: R C Frew, D L Feltham, P Holland, A Petty

**C21D-1376** POSTER Seasonal Preconditioning Towards a Younger, Thinner Ice Cover in the Beaufort Sea During Winter 2016 and the Subsequent Ice-free September.: D Babb, R J Galley, J Landy, D G Barber

**C21D-1377** POSTER The distribution of solar energy under ponded sea ice: C Horvat, D Flocco, D W Rees Jones, L A Roach, K M Golden

**C21D-1378** POSTER The strong and highly variable push of ocean waves on Southern Ocean sea ice: J E Stopa, P Sutherland, F Ardhuin

**C21D-1379** POSTER What Drives the Sea Ice Volume in the Arctic Marginal Ice Zones, An Adjoint Sensitivity Study.: A Bigdeli, A T Nguyen, P Heimbach

**C21E-1381** POSTER A modeling study of the High-mountain Asia glaciers change: Y Chen, D Ji

**C21E-1382** POSTER A Nonparametric Statistical Technique for Spatial Downscaling of Precipitation over High Mountain Asia: Y Mei, V Maggioni, P Houser, Y Xue, T Rouf

**C21E-1383** POSTER Active Rock Glaciers and Protalus Lobes in the Western Kunlun Shan of China: A First Assessment: Y Hu, L Liu, L Zhao

**C21E-1384** POSTER Assimilation of MODIS snow cover and NASA MEaSUREs landscape freeze/thaw observations into the Noah-MP model across High Mountain Asia: Y Xue, P Houser, V Maggioni, Y Mei, S Kumar, Y Yoon

**C21E-1385** POSTER Changes in glaciers and glacial systems of transboundary basins in Central Asia over the past 60 years and their impact on runoff and water resources: L Kogutenko, I Severskiy, M Shahgedanova, R L Armstrong, V Kapitsa, A Kokarev, T Tokmagambetov, Z Usmanova

**C21E-1386** POSTER Characteristics of Extreme Precipitation Events in High Mountain Asia as Inferred from High Resolution Regional Climate Modeling: C Riley, S Rupper, W J Steenburgh, C Strong, A Kochanski

**C21E-1387** POSTER Contribution of High Mountain Asia glacier changes to river basin hydrology from GRACE and model output products.: I Velicogna, E Ciraci, G A, R B Lammers, D S Grogan, A A Proussevitch, S B Kapnick


**C21E-1389** POSTER Crossing boundaries and combining approaches for regional scale hydrologic study in the Pamir Mountain source waters of the Aral Sea: A F Hill, A M Wilson, P Normatov, T Tuzova, M J Brodzik, K Rittger, T Bolch, A Racoviteanu, R L Armstrong, I S Normatov

**C21E-1390** POSTER Drainage of a large, short-lived supraglacial lake through two glaciers in the Everest region of Nepal: ablatice and geomorphic effects: E Miles, C S Watson, F Brun, E Berthier, E Michel, D J Quincey, K E Miles, P Wagnon

**C21E-1391** POSTER Dynamics of sediment load and chemical composition of melt-water from Shaune Garang catchment, Western Himalaya: R Kumar, R Kumar, S Singh, A Singh, A Bhardwaj, A Kumari, R K Sinha
0800h **C21E-1392 POSTER** Effect of Debris on Seasonal Ice Melt (2016-2018) on Ponkar Glacier, Manang, Nepal: R Shrestha, R B Kayastha

0800h **C21E-1393 POSTER** Effects of Surface Observation Input in Asian Highland on Gridded Analysis of Daily Mean Temperature and its Climatology: N Yasutomi

0800h **C21E-1394 POSTER** ENERGY and MASS BALANCE ESTIMATION of YALA GLACIER, LANGTANG VALLEY, RASUWA, NEPAL from 2011-2017: A Acharya

0800h **C21E-1395 POSTER** Evaluation of Multi-source Global DEM Performances in High Mountain Asia: K Liu, C Song


0800h **C21E-1397 POSTER** High frequency GPR signal interaction with supraglacial debris: Domination by volumetric backscatter: A L Giese, S A Arcone, R L Hawley

0800h **C21E-1398 POSTER** Incorporating a Glacier Model into a Macro-Scale Hydrological Model: Seasnow River Discharge in Bhutan: A Fujioka, N Hanasaki, O Sasaki, S Yoshikawa, S Kanae

0800h **C21E-1399 POSTER** Integrating machine learning and brightness temperature assimilation to improve snow estimates over High Mountain Asia.: J A Ahmad, Y Kwon, S Kumar, B A Forman

0800h **C21E-1400 POSTER** Landslides in High Mountain Asia after climate change: T Stanley, D Kirschbaum, S B Kapnick, S Pascale

0800h **C21E-1401 POSTER** Mass balance modelling approach to assess long term water availability in Satluj basin, Western Himalaya: V Prasad, A V Kulkarni, P Srinivasalu, P S, A Tawde, T Shirsat, A Raman, A Orr

0800h **C21E-1402 POSTER** Modeling surface quantities over Himalaya using the Modèle Atmosphérique Régionale (MAR) Model: multi-decadal simulations and assessment using satellites and in-situ data: M Linares, M Tedesco, S A Margulis, P Alexander, X Fettweis, G Cortés

0800h **C21E-1403 POSTER** Numerical Modeling as a Validation Tool for Observed Impacts of a Glacial Lake Outburst Flood, and Its Implications for Hazard Assessment: J Lala

0800h **C21E-1404 POSTER** Petrography of the 2017 Langmale (Nepal) Landslide and Glacier Lake Outburst Flood: S Pauydal, A Karki, J S Kargel, D Regmi, U K Haritashya, C S Watson, D H Shugar

0800h **C21E-1405 POSTER** Quantifying Glacier Mass Change in High Mountain Asia through 2100 using a New Open-source Glacier Evolution Model: D Rounce, R Hock, D E Shean

0800h **C21E-1406 POSTER** Spatial and Temporal Variability of High Mountain Asia Snowmelt From Synthetic Aperture Radar: J Lund, R R Forster, M Z Hashmi

0800h **C21E-1407 POSTER** STUDY OF DECADAL RETREAT AND MORPHOLOGICAL CHANGES OF LIRUNG GLACIER: K R Kafle, R B Kayastha, P R Shakya, R Kayastha

0800h **C21E-1408 POSTER** Study on the extraction, distribution and influence of mountain base elevation in the Qinling-Daba Mountains: J Liu, F Zhao, F Qin

0800h **C21E-1409 POSTER** The role of firn in High Mountain Asia mass balance change–first result: L Huang


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**C21F** (CC) Hall A-C (Poster Hall)

**Tuesday 0800h**

**Drivers of Change in the High-Mountain Water Cycle Posters (joint with A, H)**

**Presiding:** Walter Immerzeel, Utrecht University; David Rounce, University of Texas at Austin; Duncan Quincey, University of Leeds; Emily Collier, Friedrich-Alexander University Erlangen-Nürnberg;

0800h **C21F-1412 POSTER** A Landsat-derived Record of Lake Area Fluctuations on the Altiplano-Puna Plateau: M F Stokes, C Y Chen, D McGee

0800h **C21F-1413 POSTER** Climatic conditions amplifying seasonal areal change of glacial lakes in the Bhutan Himalaya: H Nagai


0800h **C21F-1415 POSTER** Differences in observed climate data affect the spread of projecting future glacier mass changes: M Watanabe, A Yanagawa, Y Hirabayashi, S Watanabe, S Kanae


0800h **P21E-3404 POSTER** Moonquake-triggered Mass Wasting Processes on Icy Worlds: M Mills, M P Panning, R T Pappalardo

0800h **P21E-3405 POSTER** Performance of a broadband seismometer on Europa and implications for the detection of liquid water below its icy surface: R Maguire, N C Schmerr, V Lekic, T Hurford Jr


0800h **P21E-3407 POSTER** Formation of terrestrial craters on thick ice sheets: B C Johnson, E A Silber, E Bjoennes, K H Kjaer, S Wiggins, J A MacGregor, N K Larsen

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**C22A (CC) Salon H**

**Tuesday 1020h**

**GRACE-FO and ICESat-2: NASA’s Newest Missions for Cryospheric Science I** (joint with G)

*Presiding:* Tom Neumann, NASA Goddard Space Flight Ctr.; Felix Landerer, Jet Propulsion Laboratory;

1020h **C22A-01** Introductory Remarks - GRACE-FO: F W Landerer

1025h **C22A-02** ICESat-2 and its capabilities for cryospheric research: T Markus, T Neumann, M Anthony, N T Kurtz

1039h **C22A-03** Enhancing the Spatial Resolution of Monthly GRACE Solutions in Antarctica with ICESat and other Geodetic Observations: R A Hardy, R S Nerem, D N Wiese, A S Gardner

1053h **C22A-04** The ICESat-2 Mission and the Ice-Covered Arctic and Antarctic Oceans: R Kwok

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1107h **C22A-05** ICESat-2 Over Antarctica and Greenland: First Evaluation of Land-Ice Elevation Products: B E Smith, A S Gardner, N Holschuh, M R Siegfried, B M Csatho, A F Schenk, S Adusumilli, H A Fricker, K M Brunt, K Harbeck, T Neumann


1135h **C22A-07** Rigorous comparisons and combination solutions of land ice mass changes from GRACE mascons and ICESat: S B Luthcke, B D Loomis, J King, H J Zwally, B M Csatho, T J Sabaka, T Schenk

1149h **C22A-08** High-latitude Oceanography from Space Using ICESat, CryoSat-2, and GRACE with Implications for Future Use of ICESat-2 and GRACE-FO: J Morison, R Kwok, C Peralta-Ferriz, S Dickinson, S Dewey, R Andersen, D Morison

1203h **C22A-09** Reconciling the Mass Balance of the Antarctic Ice Sheet Derived from GRACE and ICESat and Bridging the Gap to ICESat-2 and GRACE-FO: H J Zwally, J W Robbins, S B Luthcke

1217h **Concluding Remarks:**

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**C22B (CC) Salon G**

**Tuesday 1020h**

**Preliminary Discoveries from the 2015–2018 Shackleton Glacier Deep Field Camp, Antarctica I** (joint with B, EP, V)

*Presiding:* Kathy Licht, IUPUI; Brenda Hall, University of Maine; Nathan Smith, Natural History Museum of Los Angeles County;

1020h Welcoming Remarks:

1025h Introductory Remarks:

1040h **C22B-01** Antarctica, the heart of it all: a South Polar view of glaciation during the Late Paleozoic Ice Age: J Isbell, L Ives

1045h **C22B-02** High-Latitude environments in a warming world—Examining floristic diversity and changes across the Permian–Triassic Boundary: P Ryberg, B Atkinson, R Serbet, E Taylor

1050h **C22B-03** The role of glacial history on the structure and functioning of ecological communities in the Shackleton Glacier region of the Transantarctic Mountains: B Adams, W B Lyons, I D Hogg, N Fierer, D H Wall, C Gardner, M A Diaz, M M Shaver-Adams
1055h C22B-04 A glacial history of the central Transantarctic Mountains, Antarctica, using $^3$He, $^{21}$Ne, and $^{10}$Be surface exposure ages: A Balter, G R Bromley, G Balco, H Thomas, M S Jackson

1100h C22B-05 Cosmogenic nuclides suggest long-term Pleistocene exposure of subglacial bedrock at the Ohio Range in the West Antarctic Ice Sheet: J L Middleton, Z Mason, S Mukhopadhyay, A E Putnam, R P Ackert, S W Campbell

1105h C22B-06 Age and history of a Buried Glacier Ice Mass, Ong Valley, Southern Transantarctic Mountains: J Putkonen, D J Morgan, G Balco, M Bergelin, A Grant

1110h C22B-07 The Life Cycle of a Continental Arc Preserved in the Transantarctic Mountains, Antarctica: D A Nelson, J M Cottle

1115h C22B-08 Volcanology and Petrology of Earth’s Southernmost Volcanoes: K S Panter, J L Smellie, J L Reindel, W C McIntosh

1120h Panel Discussion:

H22B (CC) 101

Tuesday 1020h

Applications in Snow Hydrology: Linking Seasonal Snow to Natural Processes and Society I (joint with C)

Presiding: Ryan Webb, University of Colorado, Boulder; Laurie Huning, University of California Irvine; Dongyue Li, University of California, Los Angeles; Jessica Driscoll, University of Arizona;


1035h H22B-02 Comparison of snow accumulation from global data products using a new seasonal mountain snow classification: M Wrzesien, M T Durand, T Pavelsky

1050h H22B-03 Runoff Sensitivity to Snowmelt Representation Within a Continental-Scale Hydrologic Model: G A Sexstone, J M Driscoll, L Hay


1120h H22B-05 Linking mountain snowmelt to interbasin transfers of groundwater in the semi-arid Andes: E A Sproles, C Soulsby, D Tetzlaff, S MacDonell, A W Nolin, A Hevia Cruz

1135h H22B-06 Analysis of different modeling strategies for forecasting snowmelt during rain-on-snow events: A H Winstral, T Jonas

1150h H22B-07 Statistical Model for Predicting Water Yield and Peak Flow in Chilean Rivers Using the MODIS Snow Product: F Saavedra, S K Kampf, S R Fassnacht, J Sibold

C23A  (MM) Marquis 5  
Tuesday  1340h  
The Nye Lecture and Honored Member Presentations (Virtual Session)  

*Presiding:* Tavi Murray, Swansea University; Lora Koenig, NSIDC;  

1340h Introductory Remarks:  
1350h **C23A-01** Microwave Remote Sensing of Snow: Advances over Ice Sheet, Land, and Sea Ice: L Brucker  
1410h **C23A-02** Short-term changes in Antarctica’s ice shelves are key to predicting their long-term fate: H A Fricker  
1430h **C23A-03** Decline in Arctic Ocean sea-ice thickness, volume, and multiyear ice coverage: 1958-present: R Kwok  
1450h **C23A-04** A Career of Change: J Richter-Menge  

C24A  (CC) Salon H  
Tuesday  1600h  
One Hundred Years of Cryosphere I  

*Presiding:* Jeffrey Deems, National Snow and Ice Data Center; Lora Koenig, National Snow and Ice Data Center; Andrew Barrett, National Snow and Ice Data Center; Emilio Mateo, Ohio State University Main Campus;  

1600h **C24A-01** Cold Roots: The Emergence of Cryospheric Science from the Heroic Age of Polar Exploration: M Sturm  
1620h **C24A-02** Exploring the Cryosphere from the Air and Space: The Power of Perspective: W Abdalati  
1640h **C24A-03** Paradigm Shifts in Cryo Science: R B Alley  
1700h **C24A-04** 100 Years of Cryosphere: Impacts Motivate Scientific Advancement: J Richter-Menge  
1705h **C24A-05** Arctic System Science: Evolution in Synthesis Research: L D Hinzman  
1710h **C24A-06** A Century of Glacier Research Evolution Driven by Need to Assess Climate Change Impacts: M S Pelto  
1715h Panel Discussion:
Session Information

Oral Sessions
Sessions are being held in the Convention Center (CC) and Marriott Marquis (MM)

Poster Sessions
Posters are on display in the following venue throughout the week:
Hall A-C (Poster Hall)

Session & Paper Numbering

Paper Numbers - A paper number designates the section, or other sponsoring group, and chronology of the presentation.
Example: A21A-01 = Atmospheric Sciences, Tuesday, AM, concurrent session A, first paper in that session.

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The program is current as of 06 December 2018. An omitted abstract ID number in the presentation order indicates that the abstract has been withdrawn by the presenter from the session. Please refer to the online program at https://agu.confex.com/agu/fm18/meetingapp.cgi/Home for updates.

Wednesday A.M.

C31A  (CC) Salon G

Wednesday  0800h

Dust, Black Carbon, and Other Aerosols in the Cryosphere I  
(joint with A, GC, H)

Presiding: McKenzie Skiles, University of Utah;
Thomas Painter, Jet Propulsion Laboratory; Susan Kaspars, Central Washington University; Alia Khan, Colorado University Boulder;

0800h  C31A-01 Analysis of aerosol deposition on snowfields over major high mountain ranges: P A Ginoux, S B Kapnick, S Malyshev, H G V Chan, H Guo, C Milly, S Pascale, V Naik, B Pu, E Shevliakova, M Zhao

Join AGU in Honoring the 2018 Union Honorees

6:00 PM–8:00 PM
Convention Center: Ballroom A-C
0815h **C31A-02** Black carbon redistribution in seasonal snowpacks on two glaciers in High Mountain Asia: **I Koch**, J D Barker, J D Kirkham, C Gul, P S Praveen, D Stumm, B Adhikary, M Litt, T Tashi, A K Sinisalo

0830h **C31A-03** The Role of Black Carbon and Dust in Albedo Reduction and Radiative Forcing on the Juneau Icefield, Southeast Alaska: **S A Nagorski**, S M Skiles, S Kaspari, J Fellman, E W Hood

0845h **C31A-04** Making the qualitative-to-quantitative transition in ice core nanoparticle studies: a case study from Mt. Ortles in the Italian Alps: **A Ellis**, P Gabrielli, J Olesik, C Barbante, L G Thompson

0900h **C31A-05** Effects of Mineral Dust and Black Carbon on Albedo in the Western Greenland Ice Sheet Percolation Zone: **G Lewis**, E C Osterberg, R L Hawley, H P Marshall, S D Birkel, J E Dibb, B G Koffman, D G Ferris, M Tedesco

0915h **C31A-06** Mapping the Spatial Distribution of Dark Ice and Ice Algae with Sentinel-3 Imagery over Southwest Greenland: **S Wang**, M Tedesco, M Xu, C M Foreman, M Flanner

0930h **C31A-07** Isotope-based source apportionment of carbonaceous compounds in Arctic aerosol, fog, snow, and sea ice: **B Rodriguez**, K Park, C I Czimczik, S Kim, X Xu, G Santos

0945h **C31A-08** Long-term accumulation of perchlorate aerosol combined with geothermal heat flux may contribute to basal ice lubrication at West Antarctica: **R H M Godoi**, H Evangelista, J Weis, S J Gonçalves Jr, T Harder, S China, A Laskin, M K Gilles, A F L Godoi

0845h **C31B-04** Analysis on the relation of volume change and area change of glaciers in the Tian Shan: **P Wang**

0900h **C31B-05** Five Years of Biannual Unmanned Aerial Vehicle Surveys for Two Debris-Covered Glaciers: **P D A Kraaijenbrink**, W W Immerzeel

0915h **C31B-06** Automatic detection of the end-of-summer snowline from optical satellite images: **L Davaze**, A Rabatel, Y Arnaud, P J Sirguey

0930h **C31B-07** Calving event precursors revealed by high-temporal resolution surface velocity measurements.: **P M Lefèvre**, C Nuth, T R Lauknes, T Strozi, L Rouyet, M Petlicki

0945h **C31B-08** Glacier Mass Balance Changes and Meltwater Contributions to Total Runoff over the Southeastern Tibetan Plateau Using ICESat Laser Altimetry Measurements and Modelling: **P Han**, D Long, Q Huang, X Li

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**C31C (CC) Hall A-C (Poster Hall)**

**Wednesday 0800h**

**Modeling of the Cryosphere: Glaciers and Ice Sheets Posters**

**Presiding:** Sophie Nowicki, NASA Goddard Space Flight Center; **Stephen Price**, Los Alamos National Laboratory; **Christian Schoof**, University of British Columbia; **Matthew Hoffman**, Los Alamos National Laboratory;

0800h **C31C-1514** POSTER Response of the Antarctic ice sheet to increased sub-ice-shelf melt rates: **R Greve**, F Saito, S Tsutaki, T Obasa, A Abe-Ouchi

0800h **C31C-1515** POSTER Ice Sheet System Model (ISSM) studies of controls on stability of Thwaites and Pine Island Glaciers, West Antarctica: **E Schwans**, B R Parizek, R B Alley, M Morlighem, D Pollard, R T Walker, T LaBirt, H L Seroussi, P St-Laurent

0800h **C31C-1517** POSTER Impact of Calving on the Retreat of Thwaites Glacier, West Antarctica: **H Yu**, E J Rignot, M Morlighem, H L Seroussi, Y Choi


0800h **C31C-1519** POSTER Ice Cliffs: A Region Primed for Enhanced Flow or Failure?: **B R Parizek**, R B Alley, E Schwans, K A Christianson, R M Deconto, D Pollard, S Anandakrishnan, D M Holland

0800h **C31C-1520** POSTER Modeling the response of Greenland outlet glaciers to ocean forcing over the next century: **Y Choi**, M Morlighem, M Wood, J H Bondzio
0800h C31C-1521 POSTER Modeling the 21st Century Committed Dynamical Response of the Greenland Ice Sheet: I Nias, S Nowicki, B M Csatko, P Shekhar

0800h C31C-1522 POSTER West and East Antarctic ice sheet mass losses for different Ross Ice Shelf basal melt rate scenarios: C Mosbeux, S R Springer, S Adusumilli, L Padman, H A Fricker

0800h C31C-1523 POSTER Identifying the drivers of Pine Island Glacier’s acceleration and thinning from 1996 to 2011 using ISSM and Automatic Differentiation: E T Robo, M Morlighem, B Smith, J Mouginot

0800h C31C-1524 POSTER Velocity response of Petermann Glacier, northwest Greenland to past and future ice tongue loss: E Hill, G H Gudmundsson, R Carr, C Stokes

0800h C31C-1525 POSTER Sensitivity of grounding line flux change to ice shelf kinematics and dynamics: T Zhang, S F Price, M J Hoffman, X Asay-Davis

0800h C31C-1526 POSTER Grounding line migration, ice speed-up, and mass loss of Denman glacier, East Antarctica.: V Brancazo, E J Rignot, P Milillo, X Li, M Morlighem, B Scheuchl, J Mouginot

0800h C31C-1527 POSTER What’s Cooking in Antarctica? A modeling study of Cook Ice Shelf, East Antarctica: J R Jordan, G H Gudmundsson, C Stokes, S Jamieson, A Jenkins, B Miles

0800h C31C-1528 POSTER Implementation and Testing of the Experimental Design for ISMIP6 Standalone Ice Sheet Simulations: W Lipscomb, H Goelzer, G Leguy, X Asay-Davis

0800h C31C-1529 POSTER Remapping of Greenland Ice Sheet Surface Mass Balance Anomalies for Large Ensemble Sea-level Change Projections: H Goelzer, B Noel, M R van den Broeke, R V D Wal

0800h C31C-1530 POSTER Simulations of the Antarctic Ice Sheet Using a New Ice-Shelf Basal Melt Parameterization Based on the Dynamics of Meltwater Plumes: R V D Wal, W M Lazeroms, H Goelzer, A Jenkins, S Rienstra

0800h C31C-1531 POSTER Modeling the future evolution of the East Antarctic Ice Sheet under enhanced oceanic thermal forcing using newly combined melt rate parameterizations: T Pelle, M Morlighem, J H Bondzio

0800h C31C-1532 POSTER Antarctic surface mass balance trends over the 20th century in reconstructed reanalyses and CMIP5 climate models: T Gorte, J Lenaerts, B Medley

0800h C31C-1533 POSTER What can short-term observations tell us about attribution and predictability of ice-stream response to climate?: J E Christian, A Robel, C Proistosescu, G Roe, M R Koutnik, K A Christianson

0800h C31C-1534 POSTER Transient Glacial/Interglacial Cycle Modelling Using A Coupled Climate – Ice Sheet Model: D Choudhury, A Timmermann, F Schoessl, D Pollard

0800h C31C-1535 POSTER The Cryosphere model Comparison tool (CmCt): The Ice Sheet Model Comparison Tool for Greenland and Antarctica using various Altimetry, and GRACE Satellite Data: E Simon, S Nowicki, T Neumann, L Tyhala, B D Loomis, J L Saba, J A Bonin, M J Croteau, J P DiMarzio, C Johnson


0800h C31C-1537 POSTER Hot spots and large basal rivers? Effects on Greenland ice sheet simulations of proposed geographic features hidden at the base of the ice.: C R S Chambers, R Greve, B Altena, P M Lefeuvre

0800h C31C-1538 POSTER Sublimation-driven morphogenesis of Zen stones on ice: physical mechanisms and modelling: N Taberlet, N Plihon, V J Langlois

0800h C31C-1539 POSTER Modeling the Seismic Velocities and Anisotropy of Polar Ices exhibiting Various Microstructures: Interplay between Lattice Preferred Orientations, Air Content, and Rock Debris: O Castelnau, A Mangeney, J P Montagner, E Stutzmann

0800h C31C-1540 POSTER A Nye’s Zero Stress Damage Model for Full Stokes Glacier Flow: B R Berg, J N Bassis

0800h C31C-1541 POSTER A live demo of the glacier flow modeling library icepack: D Shapero, I R Joughin, A A Arendt

0800h C31C-1542 POSTER Rifting on the lateral boundary of Ross Ice Shelf, Antarctica as a product of buoyancy-driven grounding zone flexure: C B Deck, P O Koons, L M Kaluzienski, N Richmond, N R Whiteman

0800h C31C-1543 POSTER Determining the Influence of Lateral Margin Mechanical Properties on Glacial Flow: K Hruby, C C Gerbi, P O Koons, C Martin, S W Campbell, R L Hawley

0800h C31C-1544 POSTER The Effects of Lateral Advection on the Development of Temperate Zones in the Shear Margins of the Antarctic Ice Sheet: P Hunter, C R Meyer, B M Minchew, A W Rempel

0800h C31C-1545 POSTER Subglacial lithologic and topographic controls on ice flow stability at Institute Ice Stream, West Antarctica: C W Elsworth, J Suckale

0800h C31C-1546 POSTER Thermally activated sliding in ice sheet flow: E Mantelli, C Schoof
C31D-1550 POSTER Estimating the ice thickness and bed topography of the Northern Patagonian Icefield: C Donnelly, S L Cornford, A J Payne, I Nias, L Foresta, N Gourmelen

C31C-1551 POSTER MASS BALANCE MODELLING AND CLIMATE SENSITIVITY OF SASKATCHEWAN GLACIER, CANADA: C Kinnard, O Larouche, M N Demuth

C31D (CC) Hall A-C (Poster Hall)

Wednesday 0800h

Seasonal Sea Ice and Snow Under Change: Using In Situ Measurements, Remote Sensing, and Modeling to Understand Processes and Properties Across Scales Posters

Presiding: Rachel Tilling, University of Leeds; Andrew Mahoney, University of Alaska Fairbanks; Melinda Webster, NASA Goddard Space Flight Center; Chris Polashenski, Dartmouth College;

0800h C31D-1552 POSTER Evaluating the impact of satellite-derived ice thickness initialization in predicting the September Arctic minimum sea ice extent: R A Allard, N P Barton, N T Kurtz, E J Metzger, M Phelps, O M Smedstad, L Li

0800h C31D-1553 POSTER Impact of Sea Ice Thickness and Freeboard Products on Performance of Seasonal Forecasts: S Hendricks, M J Karcher, T Kaminski, F Kauker, L Toudal Pedersen, M Voßbeck, H Haak, L Niederdrenk, R Ricker, H Eicken, O Grabak

0800h C31D-1554 POSTER Effective Rheology and Wave Propagation in the Marginal Ice Zone: C Sampson, N B Murphy, E Cherkaev, K M Golden

0800h C31D-1555 POSTER The impact on Arctic sea ice of increased ice-ocean drag caused by ocean internal waves: D L Feltham, D Flocco, D Schroeder, A Siahaan, Y Aksenov

0800h C31D-1556 POSTER Modelling assessment of the impact of under ice melt ponds on sea ice and the upper ocean: D L Feltham, N Smith, D Flocco

0800h C31D-1557 POSTER New climate model representation of the refreezing of melt ponds: L Hosekova, D L Feltham, D Schroeder

0800h C31D-1558 POSTER Drainage through holes constraints melt ponds to be organized close to the percolation threshold: P Popovic, M Silber, D S Abbot

0800h C31D-1559 POSTER Heat Budget of Melt Pond Onset for First Year Sea Ice: E D Skystlingstad, C Polashenski

0800h C31D-1560 POSTER Radiative transfer model of sea ice and its validation with filed measurement of spectral albedo of sea ice at Saroma Lagoon in Japan: T Tanikawa, T Aoki, T Hirawake, M Nakayama, K Naoki, M Hori, M Niwano, M Hosaka

0800h C31D-1561 POSTER The Fate of Upper Ocean Heat Storage Under Variable Late Summer Winds in the Western Arctic: C M Chandler, S G Gallaher

0800h C31D-1562 POSTER Recent Changes in the Physical Oceanography of the Seasonal Ice Zone: J Alleyne, S Dewey, J Morison, K R Wood

0800h C31D-1563 POSTER Classification of Arctic Sea Ice Surface Types During the Melt Season in High-Resolution IceBridge Imagery: E Buckley, S L Farrell, K Duncan, L N Connor, J M Kuhn, R Dominguez

0800h C31D-1564 POSTER Airborne evaluation of dual-band frequency satellite radar altimetry measurements over Arctic sea ice: S Hendricks, R Ricker, S Fleury, P L Fabry, K Guerreiro, P Thibaut

0800h C31D-1565 POSTER Parameterizing the radar-scale roughness of snow on sea ice: a wavelet-based approach: T Newman, J Landy, J M King, S Howell, P Toose, P J Kushner, C Derksen

0800h C31D-1566 POSTER The effect of surface roughness and polarization on the snow bi-directional reflectance factor (BRF): Model simulations and validation using NASA Cloud Absorption Radiometer measurements.: N Chen, W Li, G Charles, T Tanikawa, M Hori, T Aoki, R Shimada, K H Stamnes

0800h C31D-1567 POSTER The microwave brightness temperature observation of growing thin sea ice in tank experiment: K Naoki, M Nakayama, T Tanikawa, K Cho

0800h C31D-1568 POSTER Observations of Stress and Strain at a Floe Scale during Fracture Formation in the Sea Ice Pack: C Polashenski, T E Nelsen, A R Mahoney, J T Parno, M Parno, A Song, N Wright
0800h **C31D-1569 POSTER** Errors and Improvements in Lagrangian Tracking of Sea Ice: **R Newton**, C Brunette, B Tremblay

0800h **C31D-1570 POSTER** The circumpolar influence of large-scale atmospheric circulations on Antarctic coastal polynyas: **J M Ward**, M N Raphael

0800h **C31D-1571 POSTER** Unraveling the Mystery of the Stark Contrast between Bouvet and Heard Islands in the Subantarctic – Implications for Seasonal Sea Ice Modeling and Forecasting: **S V Nghiem**, I Rigor, J Woods, E J Metzger, D A Hebert

0800h **C31D-1572 POSTER** Investigating the Role of Sea Ice in the Polar Carbon Cycle: **M E Maltrud**, N Jeffery, S Wang, J Wolfe, S Elliott, A K Turner

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**C31E (CC) Hall A-C (Poster Hall)**

**Wednesday 0800h**

**Remote Sensing of Sea Ice Posters** *(joint with A, B, GC, OS)*

**Presiding:** Ludovic Brucker, NASA Goddard Space Flight Center; Andrew Mahoney, University of Alaska Fairbanks; Walter Meier, National Snow and Ice Data Center;

0800h **C31E-1574 POSTER** Retrieval of microwave emissivity over Antarctic sea ice from AMSR2 measurements: **J KIM**

0800h **C31E-1575 POSTER** Examining the potential of deriving sea ice concentration fields from enhanced resolution passive microwave imagery: **W Meier**, J S Stewart, M J Brodzik

0800h **C31E-1576 POSTER** Prediction of Arctic Sea Ice Concentration Using Multi-Model Ensemble with Deep Neural Network: **J KIM**, Y W Lee

0800h **C31E-1577 POSTER** Prediction of Arctic Sea Ice Concentration using Multiple Satellite and Reanalysis Data based on Machine Learning Approaches: **D Han**, Y Kim, S Lee, J Im

0800h **C31E-1578 POSTER** Real-time and Autonomous Detection of Sea Ice and Growlers Using UAS: **A Sivertsen**, S A Solbø, D Stødle, N T Borch, I M Arntzen, T R Lauknes

0800h **C31E-1579 POSTER** McMurdo Sound Fast-Ice changes under a Localized Summer Warming Climate: **J M Campos**, H Xie, A M Mestas-Nunez, S F Ackley

0800h **C31E-1580 POSTER** Terrestrial Radar Observations of Sea Ice, Icebergs and Growlers in Kongsfjorden, Svalbard During the Period January–September 2018: **T R Lauknes**, L Rouyet, A Sivertsen, D Stødle, S A Solbø

0800h **C31E-1581 POSTER** Classification of First-Year Arctic Sea Ice using Spaceborne Hyperspectral Imagery: **M Platt**, A N Petrov

0800h **C31E-1582 POSTER** Using Waveform Fitting to Retrieve Snow Freeboard of Antarctic Sea Ice from CryoSat-2: **S Fons**, N T Kurtz

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**GC31B (CC) Salon A**

**Wednesday 0800h**

**Permafrost Dynamics, Biophysical and Socioeconomic Linkages: Connecting Science to Policy I** *(joint with B, C, NH, SI)*

**Presiding:** Jens Strauss, Alfred Wegener Institute Helmholtz-Center for Polar and Marine Research Potsdam; **Daniel Fortier**, University of Montreal; **Gerald Frost**, Alaska Biological Research, Inc.; **Ylva Sjoberg**, Stockholm University;

0800h **GC31B-01** Dynamic Ground and Design of the Built Environment in the North: **M G Jull**

0815h **GC31B-02** Connecting People, Infrastructure and Permafrost Information in Alaska: **E Trochim**, E Schuur, S T Rupp, A Bennett

0830h **GC31B-03** Heat Transfer Triggered by Mobile Subsurface Water Degrades Permafrost and Impacts Overlying Highways: **L Chen**, D Fortier, J M McKenzie, M Sliger

0845h **GC31B-04** Permafrost thaw and socio-economic impacts in the Disco Bay region, West Greenland: Youth voices and local stakeholders in developing adaptation and mitigation strategies: **J N Larsen**, J H Ingimundarson, P Schweitzer, L Jungsberg

0900h **GC31B-05** Seasonal Thaw Settlement and Frost Heave in Permafrost Regions in the Arctic: A Synthesis of InSAR Observations Using Sentinel-1 SAR Images: **L Liu**, L Rouyet, T Strozzi, T R Lauknes, H H Christiansen

0915h **GC31B-06** New SMAP data Brightness Temperature approaches for water dampening removal: **T Ratsimbazafy**, C Touati, J Poulin, M Bernier, R Ludwig

0930h **GC31B-07** Long-term Permafrost Change Projections across the Northwest Territory (NWT), Canada: Implications for Ecosystem, Infrastructure and Socio-economic Impacts: **S S Marchenko**, N L Fresco, S Kokelj, M Lindgren, B Sieben, A Floyd, V E Romanovsky
0800h  H31G-1955 POSTER Understanding trends and projections in snow ablation over the Western US: Patterns and controlling factors: M Xiao

0800h  H31G-1956 POSTER Sub-annual hydrologic response to rainfall and snowmelt inputs in snow-dominated watersheds of the western U.S.: J C Hammond, S K Kampf

0800h  H31G-1957 POSTER Observed and Projected Snowmelt Runoff in the Upper Rio Grande in a Changing Climate: N R Bjørke, D S Gutzler

0800h  H31G-1958 POSTER Variation trends of snowfall and snowmelt runoff in the Japanese Alps catchment: K Suzuki


0800h  H31G-1960 POSTER Using MODIS snow cover area and SSMI derived snow water equivalent to assess the value of using snow depletion curves predict river discharge and flood potential over the Red River Basin.: T Letcher, C Vuyovich, J M Jacobs, R Schroeder

0800h  H31G-1961 POSTER Assessing the impact of representing snow-albedo feedback on the response of hydrology to a warming climate: E P Maurer, D Walton, N Berg, D W Pierce, A D Hall, D R Cayan

0800h  H31G-1962 POSTER Changing Characteristics of Western US Snowpack: A T Evan

0800h  H31G-1963 POSTER Estimating seasonal snow accumulation and melt in the Sierra Nevada from GPS vertical displacement time series: T Enzinger, E E Small, A A Borsa, M S Raleigh

0800h  H31G-1965 POSTER Understanding the Reliance of Kurobe River’s Cascaded Dam System on Seasonal Snowmelt Runoff using a Distributed Hydrological Model: A Moiz, A Kawasaki

0800h  H31G-1966 POSTER Hydrogeomorphic controls on sediment characteristics in the southern Sierra Nevada: M Safeeq, C T Hunksker, J Wagenbrenner

0800h  H31G-1967 POSTER Optimizing over-summer snow storage at low latitudes and low altitudes: H S Weiss, P R Bierman, S D Hamshaw, Y Dubief


C32A  (CC) Salon H

Wednesday 1020h

Glacier Monitoring from in Situ and Remotely Sensed Observations II

Presiding: Bruce Raup, University of Colorado at Boulder; Richard Armstrong, Univ Colorado; Jeffrey Kargel, Planetary Science Institute Tucson;

1020h  C32A-01 Using New Global Compilations of Glacier Surface Elevations and Ice Speeds to Examine Glacier and Ice Cap Contributions to Sea Level.: M J Willis


1050h  C32A-03B Instantaneous glacier loss through catastrophic collapse at Flat Creek glacier: disentangling the roles of climate, geology and glacier dynamics in Wrangell-St. Elias National Park and Preserve, Alaska: M F Jacquemart, M Loso, J S Hansen, J Sykes, K F Tiampo

1105h  C32A-04 Role of glacio-morphological factors on glacier mass balance variation: a case study of glaciers in Chandra Basin, Western Himalayas, India: A Chandrasekharan, R Ramsankaran


1205h  C32A-08 Glacio-hydrological variations in Shaune Garang Catchment, Western Himalaya: R. Kumar, S Singh, R Kumar, A Singh, A Bhardwaj, S Singh
C32B   (CC) Salon G

Wednesday  1020h

Integrating Observations and Models to Better Understand a Changing Arctic System I  (joint with A, GC, OS)

Presiding: Marika Holland, National Center for Atmospheric Research; Jennifer Kay, University of Colorado at Boulder; Donald Perovich, USA CRREL;

1020h  **C32B-01** Cloud Response to Arctic Sea Ice Loss and Implications for Future Feedbacks in the CESM1 Climate Model: A Morrison, J E Kay, W Frey, H Chepfer, R Guzman

1035h  **C32B-02** Reconstruction of snow on Arctic sea ice: E Blanchard-Wrigglesworth, M Webster, S L Farrell, C M Bitz

1050h  **C32B-03** Using CryoSat-2 Sea Ice Thickness to Improve Sea Ice Evolution in the Ocean – Sea Ice Model NEMO-CICE: D L Feltham, D Schroeder, M Tsamados, R Tilling

1105h  **C32B-04** Improved Barents Sea Ice Predictions: The Value of Ocean Observations: M Bushuk, X Yang, M Winton, R Msadek, M Harrison, A J Rosati, R Gudgel

1120h  **C32B-05** Using the CESM large ensemble to explore sea ice conditions possible during the MOSAiC field experiment: A K DuVivier, M M Holland, D A Bailey, T Krumpen, C S Harrison


1150h  **C32B-07** Unprecedented (1851 - 2016) atmospheric conditions drive recent record surface and ice dynamic mass losses over the Greenland ice sheet: M Tedesco, P Alexander, X Fettweis, E Hanna, T L Mote, D F Porter, A Rennermalm, B M Csatho, R E Bell, A Boghosian, N Schlegel

1205h  **C32B-08** The Holocene Thermal Maximum as an Analog for Future Warming: Insights from Paleoclimate Data Assimilation: J Badgeley, E J Steig, G J Hakim

C32C   (CC) Salon I

Wednesday  1020h

Remote Sensing of Sea Ice I  (joint with A, B, GC, OS)

Presiding: Ludovic Brucker, NASA Goddard Space Flight Center; Andrew Mahoney, University of Alaska Fairbanks; Walter Meier, National Snow and Ice Data Center;

1020h  **C32C-01** Investigating Ice Albedo Feedbacks through the Synthesis of High and Medium Resolution Optical Remote Sensing.: N Wright, C M Polashenski, M Webster

1035h  **C32C-02** Remote Sensing of Arctic Sea Ice Using the Super Dual Auroral Radar Network: E G Thomas, S G Shepherd, P V Ponomarenko

1050h  **C32C-03** Marine X-band Radar Observations of Sea Ice Drift Fields in the Arctic: B Lund, H C Graber, O P G Persson, M Smith, M J Doble, J Thomson, P Wadhams

1105h  **C32C-04** Seasonal Change of Sea Ice in the Ross Sea using Sentinel SAR Images: H Xie, L Dai, S F Ackley, A M Mestas-Nunez

1120h  **C32C-05** Estimating melt onset over Arctic sea ice from hybrid Sentinel-1 and RADARSAT-2 backscatter: S Howell, D Small, M Brady

1135h  **C32C-06** Sensitivity of snow thermophysical properties on Ku-band altimeter estimates of Arctic first-year sea ice thickness: J J Yackel, V Nandan, T Geldsetzer, A Rösel, R K Scharien, M Mahmud, D Nomura, M M Frey

1150h  **C32C-07** Spatio-Temporal Variability of Antarctic Sea-Ice Thickness and Volume Obtained from ICESat Data Using an Innovative Algorithm: H Li, H Xie, S Kern, W Wan, B Ozsoy, S F Ackley, Y Hong

1205h  **C32C-08** Sea Ice Freeboard, Thickness, and Sea Surface Height from ICESat-2 Multi-beam Altimetry: R Kwok
Wednesday P.M.

C33A  (CC) Salon H

Wednesday  1340h

Modeling of the Cryosphere: Glaciers and Ice Sheets I

**Presiding:** Sophie Nowicki, NASA Goddard Space Flight Center; Stephen Price, Los Alamos National Laboratory; Christian Schoof, University of British Columbia; Matthew Hoffman, Los Alamos National Laboratory;

1340h  **C33A-01** Anatomy of the Marine Ice Cliff Instability: J N Bassis, D Benn, B R Berg

1355h  **C33A-02** Across the Great Divide: The Flow-to-Fracture Transition and the Future of the West Antarctic Ice Sheet: R B Alley, B R Parizek, K A Christianson, R M Deconto, D Pollard, S Anandakrishnan

1410h  **C33A-03** Modeling Marine Ice Cliff Instability: Higher resolution leads to lower impact: D F Martin, B M Minchew, S F Price, E G Ng

1425h  **C33A-04** Behaviour of the Grounding Lines of Unconfined Marine Ice Sheets in Low Driving/Basal Stress Regime: O V Sergienko, D J Wingham

1440h  **C33A-05** Modeling the Impacts of Thinning Ice Shelves on Upstream-Flow of the Antarctic Ice Sheet: G H Gudmundsson, F S Paolo, S Adusumilli, H A Fricker

1455h  **C33A-06** Process-based models for ice-stream shear margins: J Suckale, C W Elsworth, E Mantelli, I Kasmalkar, A Damsgaard, J D Platt, T Perol, J R Rice, L Goren

1510h  **C33A-07** How accurately can we predict the rate of marine ice sheet collapse?: A Robel, H L Seroussi, G Roe

1525h  **C33A-08** Slowdown in Antarctica Mass Loss from Solid-Earth and Sea-Level Feedbacks: E Y Larour, H L Seroussi, E R Ivins, S Adhikari, L Caron, M Morlighem, N Schlegel

C33B  (CC) Salon G

Wednesday  1340h


**Presiding:** Rachel Tilling, University of Leeds; Andrew Mahoney, University of Alaska Fairbanks; Melinda Webster, NASA Goddard Space Flight Center; Chris Polashenski, Dartmouth College;

1340h  **C33B-01** Coupled Wave-Ice Interactions in the Marginal Ice Zone in Simulations with a Floe-Size Distribution: C M Bitz, L A Roach, A C Ordonez, C Horvat, S M Dean, B Fox-Kemper, M H Meylan

1355h  **C33B-02** The role of sea ice in atmosphere-ocean energy and momentum transfer: Insights from remote sensing: T W K Armitage, G Manucharyan, A Petry, R Kwok, A F Thompson

1410h  **C33B-03** Episodic Validation of Coastal Sea Ice Passive Microwave Retrievals Using Local, Indigenous Observations: A C Bradley, E Sun

1425h  **C33B-04** Using Operation IceBridge data to construct a consistent record of sea ice thickness from ICESat, CryoSat-2, and ICESat-2: N T Kurtz, A Petty, T Markus

1440h  **C33B-05** Arctic snow properties from dual frequency airborne radar altimetry and in situ sea ice observations: H Skourup, S M Hvidegaard, A Di Bella, R Forsberg, A Coccia Sr, T G D Casal, M W Davidson, V Helm

1455h  **C33B-06** Linking Scales in Earth’s Sea Ice System: K M Golden

1510h  **C33B-07** Lagrangian methods for modeling compressive failure in sea ice across scales: A Damsgaard, O V Sergienko, A Adcroft

1525h  **C33B-08** The Importance of Capturing Late Melt Season Sea Ice Conditions for Modeling the Western Arctic Ocean Boundary Layer: S G Gallaher

C33C  (CC) eLightning Theater II

Wednesday  1340h

Visualizing the Dynamic Cryosphere eLightning

**Presiding:** Kiya Riverman, University of Oregon; Timothy Bartholomau, University of Idaho; Adam Winstral, USDA-ARS; Eric Sproles, US EPA;
1340h Introductory Remarks:

1341h **C33C-21** Modeling the response of Northwest Greenland to enhanced ocean thermal forcing and subglacial discharge: **M Morlighem**, M Wood, H L Seroussi, J H Bondzio, Y Choi, E J Rignot

1344h **C33C-22** Disentangling pathways of warm Atlantic inflow to the 79-North Glacier with Lagrangian trajectories in a high resolution ocean model: **Y He**, I M Koszalka, C Wekerle, J Schaffer, T Kanzow

1347h **C33C-23** Geomorphological Mapping of the Xiata Glacier Area in Northwest China with the Assistance of Drones: **Y Li**, P Fu

1350h **C33C-24** Climate-Driven Changes in Interannual Variability of Snowpack Amount and Timing: Interactive Data Visualizations for Understanding Complex Patterns: **A M Marshall**, T E Link, J T Abatzoglou, C Tennant

1353h **C33C-25** After 80 Years, New Look at Snow Friction: **J Lever**, S Taylor, G R Hoch, C P Dagihan

1356h Concluding Remarks:

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**C33D (CC) Hall A-C (Poster Hall)**

**Wednesday 1340h**

**Glacier Monitoring from in Situ and Remotely Sensed Observations Posters**

*Presiding: Bruce Raup*, University of Colorado at Boulder; *Richard Armstrong*, Univ Colorado; *Jeffrey Kargel*, Planetary Science Institute Tucson;

1340h **C33D-1584** **POSTER** Analysis of Proglacial Lake Change Across Northwestern North America Utilizing Remotely Sensed Data: **H Field**, W H Armstrong Jr

1340h **C33D-1585** **POSTER** Assessing the Impacts of Debris Coverage on Glaciers in the Andes: **E I Mateo**

1340h **C33D-1586** **POSTER** Calving speed controlled by velocity gradients at lake-terminating glaciers in Southern Patagonia Icefield: **M Minowa**, M Schaefer, S Sugiyama, D Sakakibara, P Skvarca, G Casassa Sr

1340h **C33D-1587** **POSTER** Climate and Singular Event Glacier Change on Gigjökull and Steinholtsjökull, Iceland: **K M Sah**, W H Kocitzky, M C Dryak, W Dougherty, B R Edwards, M T Gudmundsson, J M M C Belart

1340h **C33D-1588** **POSTER** Estimating the longevity of glaciers in the Tian Shan in Xinjiang, China through remote sensing observations of glacier area change: **J Liu**, D E Lawson, R L Hawley, B Tracy, J W Chipman, X Shi, Y Chen

1340h **C33D-1589** **POSTER** Evaluation of using High Resolution SAR Imagery to Monitor Glacier Dammed Lakes: **B C Johnson**, E H Moran, S Lindsey, G C Kalli

1340h **C33D-1590** **POSTER** Field and Remote Sensing Observations on Retreatting Outlet Glaciers on the Northern Edge of the Prince of Wales Icefield, Central Ellesmere Island, Canada: **A Curley**, W H Kocitzky, B R Edwards, K Bonsey, M Ritter

1340h **C33D-1591** **POSTER** Glacier Mapping using Multi-sensor Satellite Data through Knowledge based-Hierarchical Classification Approach: **R Ramsankaran**, A Narendran

1340h **C33D-1592** **POSTER** Glacier responses to the recent megadrought in Central Andes of Chile. Using Terrestrial LiDAR, InSAR, and satellite images.: **T Seehaus**, D Farías, C Bravo, A Caro, G Casassa Sr, J P McPhee, M H Braun


1340h **C33D-1594** **POSTER** High-Resolution Satellite Imagery Monitoring of Greenland Ice Sheet Supraglacial Hydrologic Features: **S Daneshgar Asl**, V W Chu, K Yang

1340h **C33D-1595** **POSTER** IceWorm: Ice Climbing Robots for Glaciology and Beyond: **A G Curtis**, J Nash, S Higa, J J Hoschchild, A Parness

1340h **C33D-1596** **POSTER** In-situ, photographic and LiDAR monitoring of high-mountain ice-snow covers in the Mont-Blanc massif, Haute-Savoie, France: **G Guillet**, L Ravel, P Suzanne, M Montagnat, P Deline

1340h **C33D-1597** **POSTER** A New Robotic Platform for Ground Based Measurements in the Polar Regions: **J Elliott**, A Lines, L Ray, M R Albert

1340h **C33D-1598** **POSTER** Local Variability in Firn Layering and Compaction Rates by Robotically Towed Multi-Year GPR Data Near Summit Station, Greenland: **A Lines**

1340h **C33D-1599** **POSTER** Long-term GPS Glacier Monitoring of the Juneau Icefield, Alaska and British Columbia, Canada: **A Cox**, C Meurer, G Juneau, L Hughes-Allen, U Hoffmann, S McGee

1340h **C33D-1600** **POSTER** Notes on observational data from automatic weather stations in Antarctica: **H Motoyama**, N Hirasawa, K Sugita, K Kawamura, T Aoki, T Kameda, H Enomoto
1340h C33D-1601 POSTER Open-source Telemetry Instrumentation for Networked and Real-time Glacier Monitoring: C P Borstad, P R Porter, A J Luckman, B Main, E Jenssen

1340h C33D-1602 POSTER Percolation Flux of Meltwater and Snowpack Density in Mass Balance Measurements on the Juneau Icefield, Alaska and British Columbia, Canada: E Evans, A Getraer, C Taylor-Roth, M Vanderwilt, A Opila, Z Horine

1340h C33D-1603 POSTER Recent Evolution of Glacier Termini in the Tropical Andes of Ecuador: J La Freniere, E I Carlson, C Shaw, C R Decker, A Michels, G H C Ng, A D Wickert

1340h C33D-1604 POSTER Seasonal changes in ice velocity and terminus positions of Pio XI Glacier, Southern Patagonia Icefield, Chile: S Hata, S Sugiyama, M Furuya

1340h C33D-1605 POSTER Spatial heterogeneity in thinning rates on Saskatchewan Glacier, Canadian Rockies, studied from repeat topographic surveys using airborne laser scanning and an unmanned aerial system.: C Kinnard, G Meunier Cardinal, M N Demuth

1340h C33D-1606 POSTER MASS FLOW CONTRIBUTION TO ALPINE GLACIERS FROM ICY DEBRIS FANS IN ALASKA AND NEW ZEALAND: LIFELINES FOR GLACIERS DECOUPLED FROM ICECAPS: R C Kochel, R W Jacob, J M Trop

1340h C33D-1607 POSTER Subsurface Characteristics of Icy Debris Fans: Combining surface morphologic observations with ground penetrating radar: R W Jacob, J M Trop, R C Kochel

1340h C33D-1608 POSTER Surging of Donjek Glacier, Yukon, Canada from 1935 to Present: Terminus Position, Ice Velocity, and Elevation Change: W H Kochtitzky, H Jiskoot, E M Enderlin, L Copland, C F Dow, B Main, K J Kreutz

1340h C33D-1609 POSTER Temperature profiles along the Whillans Ice Stream measured using a Distributed Temperature Sensor: S Neuhaus, S Tyler, K Mankoff, S M Tulaczyk, M H Bougamont, P Christoffersen

1340h C33D-1610 POSTER Toward fully-automated geolocation of historic airborne imagery to construct an 80-year time series of Antarctic outlet glacier extents and volumes: M J MacFerrin, M J Willis

1340h C33D-1611 POSTER Two-dimensions Phase Unwrapping in Interferometric Processing of Cryosat SAR In Data: Y DONG, W Yue, J CUI, Q Liu, X Lin, A Abudula, X LI

1340h C33D-1612 POSTER Utilizing Geospatial Technologies to Predict Catastrophic Glacier Lakes Outburst Floods: M Castro, P Yuen

C33E (CC) Hall A-C (Poster Hall)

Wednesday 1340h

Putting Arctic Science to Work: Using Your Words to Reach Collaborators and Decision Makers Posters (joint with ED)

Presiding: Jessica Rohde, Interagency Arctic Research Policy Committee; Brendan Kelly, University of Alaska Fairbanks;

1340h C33E-1613 POSTER The 2018 OUTREACH Expedition as a case study bridging the science-policy boundary to foster international collaborations, identify priorities and enhance pan-Arctic connectivity: G Auad, A Husebekk, P F J Wassmann, L O Reiersen, M Forwick, I Jakobsen, G Gotaas, L Aarekol, N Biebow, R W Corell, B Damsgård, B Haugland, M Fortier, S Rysgaard, O Søverud, A Sørensen, A Tilche, F Werner

1340h C33E-1616 POSTER Permafrost Monthly Alert (PMA): A Program to Promote, Preserve and Enhance Frozen Ground Knowledge: M R Lilly, J Brown, O W Frauenfeld, K Levine, D A Streletskiy, J Sæverud, A Sørensen, A Tilche, F Werner


1340h C33E-1618 POSTER Socio-Ecological Indicators of Change in the Arctic: C M Reza, J E Walsh, S Trainor

C33F (CC) Hall A-C (Poster Hall)

Wednesday 1340h

Integrating Observations and Models to Better Understand a Changing Arctic System Posters (joint with A, GC, OS)

Presiding: Marika Holland, National Center for Atmospheric Research; Jennifer Kay, University of Colorado at Boulder; Donald Perovich, USA CRREL;

1340h C33F-1619 POSTER Advanced prediction in the Arctic and beyond: Half way into the APPLICATE project: L Cristini

1340h C33F-1620 POSTER An Evaluation of Doppler Lidar Wind Profiles at the Iqaluit Supersite: Z Mariani, R Crawford, B Casati, S Laroche, F Lemay
1340h **C33F-1621 POSTER** An Integrated Approach to Ocean Acidification Research and Monitoring: Using Observations and Models to Support the Alaskan Blue Economy: **N M Monacci**, J N Cross, S Musielewicz, W Evans, D Pilcher, J T Mathis

1340h **C33F-1622 POSTER** Assimilation of Ice Concentration and Thickness Data in the Beaufort Sea: **M Yaremchuk**, T L Townsend, G Panteleev, D A Hebert, R Allard

1340h **C33F-1623 POSTER** Bias Correcting Precipitation Products From Next-Generation Global Atmospheric Reanalyses for the Arctic Ocean: **A P Barrett**, J C Stroeve

1340h **C33F-1624 POSTER** Bioluminescence potential dynamics during Polar Night in Arctic: **I Shulman**, J Cohen, M A Moline, B Penta, C D Rowley, S C Anderson

1340h **C33F-1625 POSTER** C-band synthetic aperture radar based prediction of Arctic sea ice melt pond fraction: **R K Scharien**, S Howell

1340h **C33F-1626 POSTER** Comparison of ERA5 and ERA-Interim near surface air temperature and precipitation over Arctic sea ice: Effects on sea ice thermodynamics and evolution: **C Wang**, R M Graham, K Wang, S Gerland, M A Granskog

1340h **C33F-1627 POSTER** Developing a Glacial Surface Model for Greenland to Improve the Projections of Surface Runoff: **L Dong**, D F Porter, M Tedesco, P Alexander

1340h **C33F-1628 POSTER** Developing a modelling framework to characterize sensitivity of soil freezing processes to snow cover changes and active layer dynamics in Arctic Alaska: **Y Yi**, R H Chen, C E Miller, M Moghaddam, J S Kimball

1340h **C33F-1629 POSTER** Effects of CryoSat-2 Processing Techniques on Modeled Ice Dynamics in a Large Alaskan Mountain Glacier: **T Trantow**, U C Herzfeld, V Helm, J Nilsson

1340h **C33F-1630 POSTER** FAMOS multi-model intercomparison of the pan-Arctic ice algal productivity on seasonal and decadal timescales: **E Watanabe**, M Jin, H Hayashida, J Zhang, N Steiner

1340h **C33F-1631 POSTER** High Spatial Resolution Soil Temperatures Simulation over the Northern Hemisphere: **K Wang**, I Overeem, T Zhang, E J Jafarov

1340h **C33F-1632 POSTER** Impact of snow properties on the regional model simulations of present-day Arctic climate: **H Matthes**, A Rinke, K Dethloff, X Zhou

1340h **C33F-1633 POSTER** Improved Sea Ice Thermodynamics in the Community Earth System Model version 2: **D A Bailey**, M M Holland, A K DuVivier

1340h **C33F-1634 POSTER** Improving temperature profile produced by sea ice model over the Arctic: **E J Kang**, B J Sohn

1340h **C33F-1635 POSTER** Integrating In-Situ Observations with Process-Based Modelling of the Sea Ice Floe Size Distribution: **L A Roach**, S M Dean, M Smith, C Horvat, C M Bitz

1340h **C33F-1636 POSTER** Integrating Observations and Models to Examine Changing Heat and Mass Balance of Sea Ice in the Beaufort Sea: **C Planck**, D K Perovich, C M Polashenski, J T Parno

1340h **C33F-1637 POSTER** Intercomparison of Snowfall Rates From CloudSat and Reanalysis Products Over the Arctic Ocean: **A Cabaj**, P J Kushner, C G Fletcher

1340h **C33F-1638 POSTER** Investigating Ocean Variability around the Greenland Ice Sheet through the Synthesis of in-situ and Remotely-Sensed Data and a General Circulation Model: **I G Fenty**

1340h **C33F-1639 POSTER** Late Winter Observations of Sea Ice Pressure Ridge Sail Heights: **K Duncan**, S L Farrell, J Hutchings, R Dominguez, J Richter-Menge, L N Connor

1340h **C33F-1640 POSTER** Mid-Term Sea Ice Prediction system using Statistical Method in Arctic Sea Route: **H S Lim**, M Kim, C H Kim

1340h **C33F-1641 POSTER** Observed Ice Surface Temperatures and the Potential Integration into a Coupled Ocean and Sea Ice Model: **T A S Rasmussen**, J Hoyer

1340h **C33F-1642 POSTER** Promotion of First Year Ice to Multi-Year Ice and Demotion of Multi-Year Ice to Open Water During the Transition from a Perennial to a Seasonal Arctic Sea Ice Cover: **J Hart**, B Tremblay, C Brunette, C Dufour, R Newton

1340h **C33F-1643 POSTER** Sensitivity of Sea ice Simulations to Ice Dynamic Treatments: **L Peng**, X Zhang

1340h **C33F-1644 POSTER** Software for Ice Sheet Model Validation Using Recently Available and Extensible Datasets: **K J Evans**, J H Kennedy, D Lu, M M Forrester, S F Price, M J Hoffman

1340h **C33F-1647 POSTER** The role of cyclones in snow accumulation on sea ice: **M Webster**, C Parker, R Kwok, L Boisvert

1340h C33F-1650 POSTER Toward optimization of rheology in ice models through data assimilation.: G Panteleev, J Stroh, M Yaremchuk, R A Allard

GC33D (CC) Hall A-C (Poster Hall)

Wednesday  1340h

Permafrost Dynamics, Biophysical and Socioeconomic Linkages: Connecting Science to Policy Posters © (joint with B, C, NH, SI)

Presiding: Jens Strauss, Alfred Wegener Institute Helmholtz-Center for Polar and Marine Research Potsdam; Daniel Fortier, University of Montreal; Gerald Frost, Alaska Biological Research, Inc.; Ylva Sjöberg, Stockholm University;


1340h GC33D-1391 POSTER Modeling permafrost temperature development on the Qinghai-Tibetan Plateau from 1966 to 2100: L Zhao, Z Sun, G Hu, Y Qiao

1340h GC33D-1392 POSTER High-resolution permafrost modeling and mapping in Alaska: D Nicolsky, V E Romanovsky, M V Debolskiy, L Cai, C Bailey, L Fisher, R R Muskett


1340h GC33D-1394 POSTER Impacts of snow on soil temperature observed across the circumpolar north: Y Zhang, A Sherstiukov, B Qian, S Kokelj, T C Lantz

1340h GC33D-1395 POSTER Creating High-resolution Permafrost Maps Using LiDAR as Baseline Datasets for Landscape Change on the Yukon-Kuskokwim Delta, Alaska: M A Whitley, G V Frost Jr, T Jorgenson, M J Macander, C Maio, S G Winder

1340h GC33D-1396 POSTER Investigating the Changes in Surface Elevation of Permafrost Terrain in the Canadian Arctic Measured by GPS Interferometric Reflectometry: J Zhang, L Liu, Y Hu

1340h GC33D-1397 POSTER Monitoring Active Layer of Permafrost along the Qinghai–Tibet Railway through InSAR Measurements: P Lu

1340h GC33D-1398 POSTER Rates of coastal destruction in areas of tabular ground ice occurrence in the western Russian Arctic: I D Streletskaya, A I Kizyakov, F Günther, M V Zimin, A V Sonyushkin, S Wetterich

1340h GC33D-1399 POSTER Post-wildfire ground deformation in Eastern Siberian permafrost areas detected by InSAR: K Yanagiya, M Furuya

1340h GC33D-1400 POSTER Soil-surface temperatures, active-layer thickness, and satellite trends of increasing phytomass in northern Alaska: A E Klene, N I Shiklomanov, F E Nelson, K E Nyland, D A Streletskiy

1340h GC33D-1401 POSTER Gas Emission From Permafrost - New Possible Mechanism of the Lake Formation: Y A Dvornikov, M O Leibman, A Khomutov, A I Kizyakov

1340h GC33D-1402 POSTER Permafrost Gas Emission Craters as a Result of Methane Release from the Massive Tabular Ground Ice, Northwest Siberia: I D Streletskaya, M O Leibman, A Vasiliev, A I Kizyakov

C34A (CC) Salon H

Wednesday  1600h

Modeling of the Cryosphere: Glaciers and Ice Sheets II

Presiding: Sophie Nowicki, NASA Goddard Space Flight Center; Stephen Price, Los Alamos National Laboratory; Christian Schoof, University of British Columbia; Matthew Hoffman, Los Alamos National Laboratory;

1600h C34A-01 Glacier response to calving events determined by competition between dynamic thinning and advective thickening: J M Amundson, T Zwinger, M Truffer, M A Fahnestock, R Cassotto

1615h C34A-02 Modeling ice shelf weakening with the material point method and damage mechanics: A Huth, B E Smith, R Duddu

1630h C34A-03 Validation of Iceberg Calving Models Against Greenland Outlet Glaciers: T Amaral, T C Bartholomaus, E M Enderlin

Towards coupled ice flow - surface mass balance modelling of Alpine glaciers: D Farinotti, H Zekollari, M Huss

Using High Resolution Borehole Closure and Tilt to Infer the Relation Between Ice Properties and Flow: E Sinkler, E C Pettit, R W Obbard

Learning About Ice-Sheet Dynamics and Rheology From Plume-Like Internal Radar Layer Structures: G J Leysinger Vieli, C Martin, R C A Hindmarsh, M P Luethi

Influence of ice-shelf collapse on Antarctic grounding-line dynamics: first results from ABUMIP: F Pattyn, S Sun, N R Golledge, E Simon

A simple theory for the sensitivity of sea ice to global-mean temperature: I Eisenman

Improving the Representation of Coupled Wave-Ice-Ocean-Atmosphere Interactions via Simulation of the Floe Size Distribution: L A Roach, C M Bitz, S M Dean, C Horvat

Does sea ice drive the Antarctic Slope Current?: A Stewart, A Klocker, D Menemenlis

What caused the remarkable 2018 North Greenland Polynya?: K Moore, A J B Schweiger, J Zhang, M Steele

Ice roughness and ocean dynamics in the Arctic: S T Cole

Evaporation at 2 Poles: Moisture Flux in the Arctic & Antarctic/Southern Oceans: L Boisvert, C L Shie, T P Vihma

The Evolution of Seasonal Heat Uptake and Release over the Arctic Ocean: A Comparison Between Three Atmospheric Reanalyses: M N Helmberger, M C Serreze

Sea Ice as a Predictor of Atmosphere and Ocean States over the Arctic and Southern Oceans, and Implications for Attribution of Polar Climate Change: H A Singh, P Rasch
Session Information

Oral Sessions
Sessions are being held in the Convention Center (CC) and Marriott Marquis (MM)

Poster Sessions
Posters are on display in the following venue throughout the week: Hall A-C (Poster Hall)

Session & Paper Numbering

Paper Numbers - A paper number designates the section, or other sponsoring group, and chronology of the presentation. Example: A21A-01 = Atmospheric Sciences, Tuesday, AM, concurrent session A, first paper in that session.

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The program is current as of 06 December 2018. An omitted abstract ID number in the presentation order indicates that the abstract has been withdrawn by the presenter from the session. Please refer to the online program at https://agu.confex.com/agu/fm18/meetingapp.cgi/Home for updates.

Thursday A.M.

C41A  (CC) Salon H
Thursday 0800h

Advances in Subglacial, Englacial, and Supraglacial Hydrology I (joint with EP, H)

Presiding: Colin Meyer, University of Oregon; Kristin Poinar, SUNY Buffalo; Samiah Moustafa, Brown University;

0800h  C41A-01 Retrieval of Englacial Firn Aquifer Thickness from Ice-Penetrating Radar Sounding in Southeastern Greenland: W Chu, D M Schroeder, M R Siegfried

0815h  C41A-02 Observations of Subsurface Meltwater Lake Collapse on an East Antarctic Ice Shelf: D R Dunmire, S Lhermitte, R Drews, J Lenaerts, A R Mangel
0830h **C41A-03** Does bare-ice subsurface water storage explain over-prediction of Greenland Ice Sheet ablation zone runoff and ice surface lowering by climate models?: **M G Cooper**, L C Smith, A K Rennermalm, D van As, W J van de Berg, J Box, M R van den Broeke, V W Chu, S W Cooley, R I Cullather, C J Gleason, A Hubbard, C M Kerschner, P L Langen, S Z Leidman, C Miège, S Moustafa, R Muthyala, B Noel, B T Overstreet, L H Pitcher, J Ryan, M Tedesco, K Yang

0845h **C41A-04** Seismic recordings reveal the timing and extent of subglacial water pressurization: **T C Bartholomau**, C R Labeledz, J M Amundson, F Gimbert, S A Veitch, V C Tsai, M S Karplus

0900h **C41A-05** Seasonal Evolution of the Subglacial Drainage and its Influence on the Surface Speed at a Small Alpine Glacier on the St. Elias Range, Yukon Territory, Canada.: **C Rada**, C Schoof, G E Flowers, M A King

0915h **C41A-06** Impact of evolving subglacial hydrology on marine ice sheet dynamics: **M J Hoffman**, B H Hills

0930h **C41A-07** Coupled englacial and subglacial hydromechanical processes revealed in the filling and drainage of an ice-dammed lake: **G E Flowers**, D G Bigelow, C Schoof, L D B Mingo, E M Young, C Rada, B G Connal

0945h **C41A-08** SHAKTI (Subglacial Hydrology and Kinetic, Transient Interactions): A new drainage model with flexible geometry and representation of laminar/turbulent flow transitions: **A N Sommers**, H Rajaram, M Morlighem

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**C41B** (CC) Salon G

**Thursday 0800h**

**Modeling of the Cryosphere: Seasonal Snow I** (joint with H)

**Presiding: Adam Winstral**, WSL Institute for Snow and Avalanche Research SLF; **Mark Raleigh**, University Corporation for Atmospheric Research;

0800h **C41B-01** When snow dominates: opportunities for new paradigms in operational hydrologic forecasting.: **J F Burkhart**, F Matt, A T Tweldebrahn

0815h **C41B-02** Multi-scale Snowdrift-resolving Modelling of Mountain Snowpack Evolution: **V Vionnet**, C B Marsh, N E Wayand, B Menounos, K Mukherjee, J M Shea, N Gasset, J W Pomeroy

0830h **C41B-03** Marked spatial variability in the sensitivity of simulated snow cover evolution to precipitation phase method selection: **K S Jennings**, N P Molotch

0845h **C41B-04** New Approaches to Address Scaling Issues of Water Flow through Snow: **R Webb**, M Fend, K S Jennings, O Wigmore, T Erickson, S Finsterle, M W Williams, N P Molotch

0900h **C41B-05** Improving SWE for Free: Data Assimilation of Snow Depth from Lidar and Other Techniques Improves Estimation of Snow Density and SWE: **E Smyth**, M S Raleigh, E E Small

0915h **C41B-06** Evaluation of a new 3-D radiative transfer model to simulate snow albedo over a macroscopic rough surface: **F Larue**, G Picard, L Arnaud, M Lamare, C Delcourt, J Revuelto, F Tuzet, M Dumont, H Bellot

0930h **C41B-07** Spatial Patterns of Sub-Canopy Irradiance: Measurements from Mobile Radiometer Surveys and Model Results: **M Giulia**, J Malle, S Barr, R Essery, T Jonas

0945h **C41B-08** Development of canopy distribution descriptor variables for spatially distributed modelling of snow surface shortwave radiation shading: **C Webster**, T Jonas, R Essery

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**C41C** (CC) Hall A-C (Poster Hall)

**Thursday 0800h**

**Ice Core Records of Environmental Change Posters** (joint with A, B, GC)

**Presiding: Tyler Fudge**, University of Washington Seattle Campus; **Erich Osterberg**, Dartmouth College; **Murat Aydin**, University of California Irvine; **Yuzhen Yan**, Princeton University;

0800h **C41C-1744** POSTER Revealing Old Ice with Krypton-81 (81Kr): **Z T Lu**, Y Q Chu, X Z Dong, J Q Gu, S M Hu, W Jiang, A Landais, V Lipenkov, F Ritterbusch, G Shi, L Tian, A M Tong, B Xu, G M Yang, L Zhao

0800h **C41C-1745** POSTER Million-Year-Old Ice Cored from Buried Ice Mass in Ong Valley, Transantarctic Mountains, Antarctica.: **M Bergelin**, J Putkonen, G Balco, D J Morgan

0800h **C41C-1746** POSTER An ultra-high-resolution sampling of the penultimate deglaciation and the last interglacial from the Allan Hills Blue Ice Area (BIA), Antarctica: **E Korotkikh**, P A Mayewski, H Cliord, D Introne, M Handley, J A Higgins, A Kurbatov, S B Sneed, N E Spaulding, Y Yan

0800h **C41C-1748** POSTER Climate Effects on Firn Microstructure are Preserved within the Firn Column: **K Keegan**, M R Albert, J McConnell, I Baker
0800h **C41C-1749** POSTER Firn densification in the accumulation zone of Kaskawulsh Glacier, Yukon Territory, Canada: **N E Ochwat**, S J Marshall, B Moorman, A S Criscitiello

0800h **C41C-1750** POSTER Measurement and interpretation of bubble number-density evolution through the upper 1200 meters of the SPC14 South Pole Ice Core (SPICEcore): **J M Fegyveresi**, R B Alley, J J Fitzpatrick, D Voigt, Z Courville, R Lieblappen

0800h **C41C-1752** POSTER Spatial distribution of bromine and iodine in the snowpack from Northern Victoria Land, East Antarctica: **J Kang**, H Hwang, J H Koo, A Spolaor

0800h **C41C-1753** POSTER The North Pacific Ice Core Record of Atmospheric Pollution: **E C Osterberg**, U A Jongebloed, D Winski, D G Ferris, M Handley, K J Kreutz, C P Wake, S D Birkel, Z R Thundercloud

0800h **C41C-1754** POSTER Lead Contamination of the European Atmosphere over the Last 7000 Years, insights from the Ortles, Eastern European Alps (Italy), Ice Cores: **P Gabrielli**, M Bertò, C Barbante, J Gabrieli, A Spolaor, M Segnana, G Drecosi

0800h **C41C-1755** POSTER Glaciochemical records from the past century from the No. 1 Qiangtang Glacier ice core on the central Tibetan Plateau: Likely proxies for climate and atmospheric circulations: **C Wang**, L Tian, L Shao, Y Li

0800h **C41C-1756** POSTER Reconstruction of past atmospheric deposition of Antimony, Thallium, Bismuth and REEs in the GV7 firm core from Northern Victoria Land, East Antarctica: **H Hwang**, J Kang, S Hong, Y Han, S D Hur, M Frezzotti, B Narcisi

0800h **C41C-1757** POSTER New developments in evaluation of record of global volcanism from polar ice cores: **A Kurbatov**, S M Davies, N W Dunbar, L Hartman, N A Iverson, M G Yates

0800h **C41C-1758** POSTER Potential of Standards-Based Energy Dispersive Spectrometry (EDS) to Analysis of Rhyolitic Glass Particles for Tephrochronology in Ice Cores: **M J Mengason**, N W Ritchie

0800h **C41C-1759** POSTER In-situ observations of solid particulate impurities in glacial ice retrieved at NEEM, Greenland: **W Shigeyama**, N Nagatsuka, T Homma, M Takata, K G Azuma, R V Mateiu, N Azuma, D Dahl-Jensen

0800h **C41C-1760** POSTER Analysis of insoluble particles in the ice core from south-east dome, Greenland: **T Amino**, Y Iizuka, K Fujita, N Oshima, S Matoba

0800h **C41C-1761** POSTER High resolution EPICA ice core dust fluxes: intermittency, extremes and Holocene stability: **S Lovejoy**, F Lambert

0800h **C41C-1762** POSTER Holocene Fractional Trace Element Concentrations from the South Pole Ice Core (SPICEcore): **A Chesler**, B G Koffman, K J Kreutz, E C Osterberg, D Winski, D G Ferris, J Cole-Dai, M L Wells, M Handley

0800h **C41C-1763** POSTER An update on carbon monoxide mole fraction and stable isotope analysis in ice cores using a melt-extraction technique: **P Place Jr**, V V Petenko, I Vimon, X Fain, J R McConnell

0800h **C41C-1764** POSTER Atmospheric nitrous oxide in the pre-800 ka atmosphere from ice cores from the Alan Hills, Antarctica: **M P Stock**, E Brook, Y Yan, J A Higgins, M L Bender, J A Menking

0800h **C41C-1765** POSTER The First Northern Hemisphere High-Resolution Holocene Methane Record Reveals a Centennial Variability: **D Vladimirova**, B Vinther, P T Valdeonga, T A Sowers, V Gkinis, H A Kjær, M F Simonsen, R Dallmayr, A Eakaykin, T Blunier

0800h **C41C-1767** POSTER Isotopic enrichment of molecular nitrogen, oxygen, and argon due to gas loss in the bubble-clathrate transition zone: **J D Morgan**, E Brook, C Buizert, J P Severinghaus

0800h **C41C-1768** POSTER Carbonyl Sulfide Variability over the Last 40,000 Years from the Intermediate Depth Ice Core Drilled at South Pole, Antarctica: **M Aydin**, M R Nicewonger, E S Saltzman

0800h **C41C-1769** POSTER Gas age scale and total air content record for the South Pole ice core: **J Epifanio**, E Brook, C Buizert, J S Edwards, T A Sowers, J P Severinghaus, E J Steig, E C Kahle

0800h **C41C-1770** POSTER Firn Smoothing of Abrupt Methane Variations in the South Pole Ice Core: **E E Hood**

0800h **C41C-1771** POSTER The South Pole ice core (SPICEcore) project: **J M Souney Jr**, M Aydin, E J Steig, T J Fudge, M Twickler

0800h **C41C-1772** POSTER Insights Into Phasing and Evolution of the Ocean Bipolar See-Saw from the RICE Ice Core.: **N A N Bertler**, A Ulayottil Venugopal, J E Lee, G Cortese, L Menviel, R L Pyne

0800h **C41C-1773** POSTER Integration of climate and ice sheet model simulations with the Roosevelt Island Climate Evolution (RICE) ice core record for the last deglaciation: **D Lowry**, N R Golledge, N A N Bertler
0800h C41C-1774 POSTER Rapid Shift in Centennial Antarctic Climate Variability during the Early Holocene - New Evidence from the RICE Ice Core: N A N Bertler, L J Eling, J E Lee, R M Mckay, R L Pyne

0800h C41C-1775 POSTER Sub-Antarctic ice core drilling: E R Thomas, J B Pedro, P T Vallelonga, B R Markle, A C F King, R Tuckwell, R R Edwards, E Ludlow, D Moser, M Potocki, G Gacitúa, S Jackson

0800h C41C-1776 POSTER Recent spatio-temporal variability of Adélie Land climate, coastal Antarctica, from a network of shallow firm cores: S Goursaud

0800h C41C-1777 POSTER Ultra-sensitive determination of Os isotopes at the femto-gram per gram level in Greenland snow samples: D Shin, C Han, J H Seo, M Sharma, S D Hur, S Hong

0800h C41C-1779 POSTER Calibrating Ice Core, Weather Station, and NASA MODIS Ice-Surface Temperature Records to Analyze Atmospheric Variability in the St. Elias, Yukon, Canada: E McConnell, K J Kreutz, S W Campbell, D Winski, L Copland, C Zdanowicz, W H Kochitsisky, D Introne, A D Nolan

0800h C41C-1780 POSTER Recent Increases of Homologous Series of Dicarboxylic Acids and Fatty Acids in an Antarctic Ice Core (H15): K Kawamura, H Kasukabe, Y Fujii

0800h C41C-1781 POSTER Laser Drilling of Ice: M Mah, A Kurbatov, S B DeFrances, J A Randi, J Talghader

C42A (CC) Salon H
Thursday 1020h
Drivers of Change in the High-Mountain Water Cycle I (joint with A, H)

Presiding: Walter Immerzeel, Utrecht University; David Rounce, University of Texas at Austin; Duncan Quincey, University of Leeds; Emily Collier, Friedrich-Alexander University Erlangen-Nürnberg;

1020h C42A-01 The global-scale hydropower potential of deglaciering areas: D Farinotti, M Huss, V Round

1035h C42A-02 Influence of the debris cover on the mass balance of glaciers in High Mountain Asia: F Brun, P Wagner, N Bertler

1050h C42A-03 Mass Balance Sensitivity to Temperature Change for Globe Glaciers: A Sakai, K Fujita

1105h C42A-04 Influences of glacier retreat, summer weather and winter snowpack on the increased variability in runoff composition in a quickly changing glacierized catchment: C Aubry-Wake, J W Pomeroy

1120h C42A-05 Detection and Characterization of Glacier Melt Signatures in Western Canadian Streamflow: S Anderson, V Radic

1135h C42A-06 Contrasting meteorological conditions between the Karakoram and the Himalayas and their impact on the glacier mass balance: P N Bonekamp, R de Kok, E Collier, W W Immerzeel


1205h C42A-08 Multi-decadal trends in climate for High Mountain Asia and their implications for the water cycle: R de Kok, O Tuinenburg, P N Bonekamp, W W Immerzeel

C42B (CC) Salon G
Thursday 1020h
Quantifying Spatial and Temporal Variability of Snow and Snow Processes I (joint with A, GC, H)

Presiding: Jeffrey Deems, National Snow and Ice Data Center; Tobias Jonas, SLF / WSL; Hans-Peter Marshall, Boise State University; Jesus Revuelto, Météo-France - CNRS;

1020h C42B-01B Optimal snow-survey design for the estimation of winter balance on alpine glaciers: G E Flowers, A Pulwicki, D Bingham


1050h C42B-03 Quantifying post-depositional snow-air water isotope exchange using laboratory experiments and in-situ observations from the Greenland Ice Sheet: A Thayer, H C Steen-Larsen, M Hörlhold, S Kipfstuhl, B H Vaughan, J W C White

1105h C42B-04 Investigating Snow Melt Signals in the Red River of the North Using the NASA MEaSUREs Calibrated Enhanced-Resolution Brightness Temperature Data: C Vuyovich, M J Torres, M Reilly-Collette, R Schroeder, A G Hunsaker

1120h C42B-05 Snowpack Change from 1982-2016 over Conterminous United States: X Zeng, P Broxton, N Dawson

1135h C42B-06 Importance of model structure and irradiance input to modeling snow surface temperature and snowmelt in complex terrain: N C Cristea, D S Reynolds, L M Hinkelman, N Sun, M S Wigmosta, J D Lundquist
60 Years of Scientific Achievements in the Arctic and Antarctica: Looking Back, Looking Forward (joint with C, GC)

Presiding: Lauren Everett, National Academy of Sciences; James White, Univ Colorado; Julie Brigham-Grette, Univ Massachusetts;


1035h U42A-02 The National Science Foundation Role in Polar Science: Looking Back to Forge the Future: K K Falkner

1050h U42A-03 60 Years of Polar Research on Abrupt Climate Change and Atmospheric Gases Trapped in Ice Cores: J P Severinghaus

1105h U42A-04 Building Antarctic Communities from Awe and Discovery with Global Impacts: R E Bell, T J Wilson

1120h U42A-05 From Overlooked to Astonishing: Life Below and Within Polar Ice Formations: J W Deming

1135h U42A-06 Scientific Committee on Antarctic Research – International Leadership for the ‘Continent for Science’: S Hansen, T J Wilson, A T Weatherwax


**Thursday P.M.**

**C43A (CC) Salon H**

**Beyond Ice Thickness: Using Radar Sounding to Understand the Dynamics of Glacier Systems I**

*Presiding:* Nicholas Holschuh, University of Washington; Dustin Schroeder, Stanford University; Winnie Chu, Stanford University; Jonathan Kingslake, Lamont-Doherty Earth Observatory, Columbia University;

1340h **C43A-01** Processes determining the morphology of ice-shelf channels in Antarctica: R Drews, C Schannwell, T A Ehlers, C Martin, F Pattyn, T Hattermann, R M Gladstone

1355h **C43A-02** Phase-sensitive radar for measuring firm densification: E Case, J Kingslake

1410h **C43A-03** Evolution of the McMurdo Shear Zone, Antarctica: Determining Critical Kinematic Threshold Values for Crevasse Initiation and Predicting Long-term Changes to Shear Zone Stability: L M Kaluzienski, P O Koons, E M Enderlin, S Arcone, S W Campbell, Z Courville, C B Deck

1425h **C43A-04** Vertical Structure of Diurnal Englacial Hydrology Cycle at Helheim Glacier, East Greenland: I Vankova, D Voytenko, K W Nicholls, S Xie, B R Parizek, D Holland

1440h **C43A-05** A Real-time Imaging Processor for High-Resolution Ice-Sounding Radar: S Lang, X Cui, X Liu, Q Wu, W Zhang

1455h **C43A-06** Layer-Optimized Synthetic Aperture Radar Processing for Slope Detection and Estimation: D Castelletti, D M Schroeder, E Mantelli

1510h **C43A-07** Subglacial bed topography using machine learning and geostatistical analysis applied to 2D and 3D radar sounding: J D Paden, V Berger, M Al-Ibadi, S Chu, M Xu, D Crandall, G Fox

1525h **C43A-08** Ice Crystal Orientation Fabric Determined from Polarimetric Ice-Penetrating Radar Interferometry: T Jordan, D M Schroeder, D Castelletti, J Li, J L Bamber, J Dall

**C43B (CC) Salon G**

**Collaborative Research to Address Changes in the Climate, Hydrology, and Cryosphere of High-Mountain Asia I**

*Presiding:* Anthony Arendt, University of Washington; Alexandra (Sasha) Richey, Washington State University; Umesh Haritashya, University of Dayton;

1340h Introductory Remarks:

1350h **C43B-01** Integrating Climatic, Glaciological and Geomorphological Data to Better Forecast Debris-covered Glacier Evolution in the Himalaya: D J Quincey, A V Rowan, A Schlich-Davies, K E Miles, E Miles, B P Hubbard, A N Ross

1410h **C43B-02** Variation in Snow and Ice Melt Influences High Alpine Water Quality in the Gokyo Valley, Nepal: A I Khan, R L Armstrong, D M McKnight, K Rittger, S J S Khalsa, M J Brodzik, A Racoviteanu

1425h **C43B-03** Analysis of Snow Variability Over High Mountain Asia and Other Major High Mountain Ranges: S B Kapnick, P A Ginoux, H G V Chan, S Malyshev, W Cooke, T L Delworth, H Guo, P C D Milly, V Naik, S Pascale, B Pu, M Zhao, S A Margulis, I Velicogna

1440h **C43B-04** Assessing the uncertainty in the terrestrial water budgets over High Mountain Asia: Y Yoon, S Kumar, Y Kwon, B A Forman, B M Zaitchik

1455h **C43B-05** Assessment of Climate-Induced Change in River Flow and Associated Effects on Hydropower Generation and Ecosystem Services in Nepal using Satellite Remote Sensing: K C McDonald, N Steiner, S Khadka Mishra, N Krakauer, T Lakhvanker, J Hayse, R B Kayastha, Y Mei, V Maggioni, P Houser

1510h **C43B-06** High-mountain Asia geodetic glacier mass balance from a high-resolution DEM record: D E Shean, P Montesano, B Osmanoglu, A A Arendt

1525h **C43B-07** Near real-time monitoring and mapping of snow conditions in High Mountain Asia: I Koch, A Thapa, T M Saloranta, J D Kirkham, K Melvold, M Litt, K Møen
C43C (CC) Hall A-C (Poster Hall)
Thursday 1340h
Observing, Modeling, Diagnosing, and Predicting Hydrological and Earth System Change in Cold Regions Posters (joint with A, B, H)

Presiding: John Pomeroy, Centre for Hydrology and Global Institute for Water Security; Alain Pietroniro, Environment and Climate Change Canada; Sean Carey, McMaster University; Chris DeBeer, University of Saskatchewan;

1340h C43C-1782 POSTER Combining active and passive microwave remote sensing measurements to detect soil thawing events: X Chen, L Liu, A Bartsch

1340h C43C-1783 POSTER Eighteen-year Changes in Ice Breakup and Freeze-up on Canadian and Alaskan Rivers Wider Than 150 m Using MODIS Imagery: W Dolan, T Pavelsky, X Yang, S Zhang

1340h C43C-1784 POSTER The Arctic Great Rivers Observatory (ArcticGRO): R M Holmes, J W McClelland, A I Shiklomanov, R Spencer, A Suslova, S Tank

1340h C43C-1785 POSTER Measuring freeze/thaw (F/T) state and frozen soil moisture fraction using 50 MHz coaxial impedance dielectric reflectometry probes in mid-latitude soils: R Pardo, A A Berg, J S Warland

1340h C43C-1786 POSTER Monitoring Seasonal Soil Frost Dynamics in Boreal-Alaska Ecosystems with Multi-Frequency Radiometer Observations: N Steiner, E Podest, A W D Davitt, M G Brown, K C McDonald

1340h C43C-1787 POSTER Comparison of methods for calculating freezing/thawing index using monthly and annual climate data: C Liu, S Feng, H Guo

1340h C43C-1788 POSTER Detection of Freeze and Thaw States using Sentinel SAR Measurements and Ground Observations; A Case Study in Alaska: M Azarderakhsh, S Prakash, P Arunayavikut

1340h C43C-1789 POSTER Deriving Arctic Lake Ice Phenology From Sentinel-1 Time-Series Using Cloud-Based Detection Algorithms: G E Gunn, E Bunting

1340h C43C-1790 POSTER Comparison of Arctic Lake Ice Cover Timing on Svalbard Using Satellite and In-Situ Data: J Cao, S E Turtle

1340h C43C-1791 POSTER Comparison of calibration strategies of a conceptual hydrological model and their influence on streamflow simulation performance, snow cover representation and parameter identifiability.: N Saida, C Kinnard

1340h C43C-1792 POSTER The Spatiotemporal Variations of Active Layer Thickness in the Northern Hemisphere during 1901-2016: H Guo, S Feng, T Zhang, X Peng

1340h C43C-1793 POSTER Modelling Cold Region Hydrology in an Agricultural Catchment in Southern Quebec, Canada: O Aygün, C Kinnard, S Campeau

1340h C43C-1794 POSTER Future projection of GLOF hazard – A 1D and 2D hydrodynamic study of the highest lake in the Dhauliganga Basin, Uttarakhand: A Sattar

1340h C43C-1795 POSTER Frost depth in Hokkaido, Japan during the winter season from 2011 to 2018: K Harada, K Yoshikawa, T Sone

1340h C43C-1796 POSTER Monitoring Breakup Conditions on an Arctic River: The case of the Sagavanirktok River, Alaska USA: H A Toniolo, D A Vas, J Keetch, J P Bailey

1340h C43C-1797 POSTER The Global Water Futures Core Modelling Strategy: A Pietroniro, J W Pomeroy, S Razavi, H S Wheeler

1340h C43C-1798 POSTER Improved Understanding, Diagnosis and Prediction of Earth System Change in Western Canada: The Achievements and Legacy of the Changing Cold Regions Network: C M DeBeer, H S Wheeler, J W Pomeroy, R E Stewart, S Carey

1340h C43C-1799 POSTER Towards Improved Subsurface Representation in Land Surface-Hydrology Models: A Haghnegahdar, S Razavi

1340h C43C-1800 POSTER Sediment Yield and Transport Model for Cold Region Catchments: S Budhathoki, L A Morales-Marin, K E Lindenschmidt

1340h C43C-1801 POSTER Using convection-permitting regional climate model to study the impact of climate change over western Canada: Y Li, Z Li, S Kurkute, Z Zhang

1340h C43C-1802 POSTER The Impact of Landuse Change on Regional Climate in the Canadian Prairies Simulated by a Convection-Permitting Regional Climate Model: Z Li, Y Li, A Barr

1340h C43C-1804 POSTER Lhasilên Mên - Kluane Lake, Yukon Territory, the Impending Hydrological Fate after Slims River Piracy: Y Loukili, J W Pomeroy

1340h C43C-1805 POSTER Diagnosis of Glacier and Ice Sheet Bed Dynamics By Means of Raman Distributed Temperature Sensing and Melt-Probe Deployment: D P Winebrenner, S Tyler, J S Selker

1340h C43C-1806 POSTER Impacts of glacier meltwater on water chemistry and discharge in Dinwoody Creek, Wind River Range, Wyoming, USA: N Shepherd Barkdull, G T Carling, D P Fernandez
1340h **C43C-1807** POSTER The Potential for Total Loss of the World's Largest Tropical Ice Mass (Quelccaya Ice Cap, Peru): A Malone, T V Lowell, J S Stroup

1340h **C43C-1808** POSTER Demystifying the snow density observation in China: Why is it always smaller?: T Che, L Dai, L Xiao, Y Hu, X Yang

1340h **C43C-1809** POSTER Enhanced Degradation of Permafrost Under Increasing Inundation in The Kuparuk Delta, Alaska: L Zheng, G Clow, I Overeem, K Wang

1340h **C43C-1810** POSTER Variability of Hydraulic Conductivity in Frozen Ground Zone: A Case Study: F Ji, Y Yao, C Zheng

1340h **C43C-1811** POSTER Impacts of microtopography on the evolution of polygonal tundra hydrology in a warming climate: A Jan, E T Coon, S L Painter

1340h **C43C-1812** POSTER Predictability of variable arctic soil hydraulic and thermal properties, and implications of such variability on future thaw: M O'Connor, K D Nicholaides, M B Cardenas, B T Neilson, G W Kling

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**C43D** (CC) Hall A-C (Poster Hall)

**Thursday 1340h**

**New Data Sources for the Monitoring of Polar Ice Sheets and Their Impact on Ice Sheet Prediction Posters** (joint with EP, GC, OS)

*Presiding: Aurora Elmore, National Geographic Society; Kenneth Jezek, Ohio State University Main Campus; Erin Pettit, University of Alaska Fairbanks;*

1340h **C43D-1813** POSTER Drones, phones, and the cloud – how technology and cross-site collaboration is transforming our understanding of the rapidly changing Arctic: J Kerby, I H Myers-Smith, B C Forbes

1340h **C43D-1814** POSTER Searching for ancient crustose coralline algae: collection and application of a high-latitude climate archive: B Williams, W Adey, J Halfar

1340h **C43D-1815** POSTER a Bayesian retrieval of Greenland ice sheet internal temperature from ultra-wideband software-defined microwave radiometer (UWBRAD) measurements: Y Duan, M T Durand, K C Jezek, C Yardim, A Bringer, M Aksoy, J T Johnson


1340h **C43D-1817** POSTER A Comprehensive Assessment and Analysis of Antarctic Grounding Line Products from 1992 to 2009: H Xie, D Lv, R Li, Y Xu, Y Tian, S Lu, X Tong, H Weng

1340h **C43D-1818** POSTER Information Embedded in the Finely Resolved UWBRAD Tb Spectra of Polar Ice Sheets: S Tan, L Tsang, J T Johnson, K C Jezek

1340h **C43D-1819** POSTER The Glacier in Winter: Technological Developments: K Martinez, J K Hart

1340h **C43D-1820** POSTER A one stop website for sharing sea ice, ocean and ice sheet data over the Polar Regions: Z Chen, X Cheng, F Hui, J LIU

1340h **C43D-1821** POSTER Measurement of Ice Sheet Internal Temperature Profiles with Ultra-Wideband Microwave Radiometry: J T Johnson, K C Jezek, M Andrews, M T Durand, Y Duan, C Yardim, A Bringer, G Macelloni, M Brogioni, S Tan, L Tsang

1340h **C43D-1822** POSTER High Resolution Inter-annual Mass Anomalies of the Antarctic Ice Sheet by Combining GRACE Gravimetry and Envisat Altimetry: X Su, C K Shum, J Guo, I Howat, K Chung-Yen, K C Jezek, Y Yi

1340h **C43D-1823** POSTER Utilising Wireless Sensor Technologies in Glaciology: E Bagshaw, N B Karlsson, B Lishman, L B Lok, S Burrow, J L Wadham, L Clare, K W Nicholls, O Eisen, H F J Corr, D Dahl-Jensen

1340h **C43D-1824** POSTER Greenland Ice Sheet Surface Roughness from Kite Aerial Photography and Structure-from-Motion Photogrammetry: T B Overly, R L Hawley, E C Osterberg, B Medley, M Studinger, T Meehan, J Kerby, G Lewis, H P Marshall, F McCarthy

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**C43E** (CC) Hall A-C (Poster Hall)

**Thursday 1340h**

**Advances in Observing and Modeling Ice Sheet and Ice Shelf Surface Mass Balance: Past, Present, and Future Posters** (joint with A, H)

*Presiding: Indrani Das, Lamont-Doherty Earth Observatory; Jan Lenaerts, University of Colorado Boulder; Brice Noel, Institute for Marine and Atmospheric Research Utrecht; Brooke Medley, NASA Goddard Space Flight Center;*

1340h **C43E-1825** POSTER Meltwater production, drainage and ponding on the Southern Ross Ice Shelf: J Kingslake, D Porter

1340h **C43E-1826** POSTER Using a Snow Model to Map Antarctic Ice Sheet Surface Mass Balance at a 1-km Resolution: M E Dattler, J Lenaerts, N Wever, B Medley

1340h **C43E-1827** POSTER Do Climate Models Properly Represent Atmospheric Rivers in East Antarctica?: E Keenan, J Lenaerts

1340h C43E-1830 POSTER Regional Grid Refinement in an Earth System Model: Impacts on the Simulated Greenland Surface Mass Balance: J Lenaerts, L van Kampenhout, A Rhoades, C M Zarzycki, A R Herrington, B Sacks, M R van den Broeke

1340h C43E-1831 POSTER Rift Propagation in the Amery Ice Shelf, East Antarctica: S L Lavesson

1340h C43E-1832 POSTER Modeling Energy Balance and Refreezing in Firn in Southwest Greenland During the 2017 Melting Season: F Covi, R Hock, A K Renneralm, M Tedesco, C Miege, J Kingslake, S Z Leidman, M J MacFerrin

1340h C43E-1833 POSTER Exploring surface meltwater classification techniques from multispectral imagery over the Antarctic Ice Sheet: A R W Halberstadt, M S Moussavi, A Pope, L D Trusel, C J Gleason, R DeConto

1340h C43E-1834 POSTER High Resolution Polar Regional Climate Model NHM-SMAP for the Greenland Ice Sheet: M Niwano, T Aoki, A Hashimoto, S Matoba, S Yamaguchi, T Tanikawa, K Fujita, A Tsushima, Y Iizuka, R Shimada, M Hori

1340h C43E-1835 POSTER Modelling the Fate of Surface Melt on the Larsen C Ice Shelf: S C Buzzard, D L Feltham, D Flocco

1340h C43E-1837 POSTER The effects of recent autumn foehn-induced melt on the Larsen C Ice Shelf: R Datta, B Medley, M Tedesco, X Fettweis, C Agosta, S Lhermitte, J Lenaerts

1340h C43E-1838 POSTER Examining the Influence of Tropical Pacific Sea-Surface Temperatures on Annual Surface Mass Balance in West Antarctica: J Krueger, S Rupper

1340h C43E-1840 POSTER Local Snow Transport and Surface Evolution Processes in East Antarctica: H Huwald, E Sauvaegat, V Sharma, F Comola, N Wever, P Crivelli, M Lehnung

1340h C43E-1841 POSTER Evaluating the Spatial Variability of Ablation Area Albedo from In Situ and Cross-Platform Satellite Sensors Over the Greenland Ice Sheet: E Pierce, S Moustafa

1340h C43E-1842 POSTER Surface Melt Changes and Climate Forcing in the Western Greenland Percolation Zone: J DeAngelo, E C Osterberg, G Lewis, D G Ferris, R L Hawley, H P Marshall, S D Birkel, K Graeter

1340h C43E-1843 POSTER Effects of advection from ice flow on deep firm structure in Greenland’s percolation zone: R Leone, J T Harper, T W Meierbachtol, N F Humphrey

1340h C43E-1844 POSTER Comparison of modeled and measured discharge from a supraglacial catchment in southwest Greenland: R Muthyala, A K Rennermalm, S Z Leidman, M G Cooper, S W Cooley, L C Smith, D van As

1340h C43E-1847 POSTER Estimates of annual surface mass balance from radar for the West Antarctic Divide using an automated layer picker: D G Keeler, S Rupper, R R Forster, C Miege, L Koenig

1340h C43E-1848 POSTER Effect of an improved physically-based simulation of land ice albedo on Greenland ice sheet surface mass balance and arctic regional climate in the ModelE GCM: P M Alexander, M Tedesco, E Fischer, A N LeGrande, X Fettweis, M Flanner, S Nowicki, G A Schmidt
Unprecedented Bering Sea Ice Extent and Impacts to Marine Ecosystems and Western Alaskan Communities Posters (joint with C, GH)

Presiding: Emily Osborne, NOAA Climate Program Office; Molly McCammon, Alaska Ocean Observing System; Olivia Lee, University of Alaska Fairbanks;

1340h OS43E-2133 POSTER It’s all different now. Implications of the unprecedented Bering Sea conditions and where we go from here: A Holman, M McCammon, E Osborne, G Sheffield, R Thoman

1340h OS43E-2134 POSTER Causes of Sea ice Extremes in the Pacific Arctic During Winter and Spring 2018: M Wang, J E Overland, P J Stabeno

1340h OS43E-2136 POSTER The Seasonal Cycle on the Southeast Bering Sea shelf: Three Years of Observations from an Innovative Prowler (Profiling Crawler) Mooring: C A Ladd, S W Bell, C W Mordy, P J Stabeno

1340h OS43E-2137 POSTER Analysis of Meltpond Distribution on Sea Ice across a Distributed Biological Observatory in the Pacific Arctic Region using MODIS Satellite Imagery, 2000–2018: L Young, K E Frey

1340h OS43E-2138 POSTER The Changing Oxygen Isotope Composition of the Bering Sea Contribution to the Arctic Ocean Upper Halocline Provides an Independent Opportunity for Constraining an Increasing Freshwater Flux Through Bering Strait: L W Cooper, C Magen, J M Grebmeier

1340h OS43E-2139 POSTER Light transmittance through the ocean water column following record low sea ice extents across a Distributed Biological Observatory in the Pacific Arctic Region: K E Frey, M I Santiago, L N C Young, J M Grebmeier, L W Cooper

1340h OS43E-2140 POSTER Biomarkers used to determine past and present impacts of declining sea ice on Pacific Arctic food webs: C Wegner, L Cooper, J M Grebmeier, T A Brown

1340h OS43E-2141 POSTER Changes in Population Dynamics of a Key Food Web Component, the Bivalve Macoma calcarea in the Northern Bering Sea from 1998-2015 and its Relation to Rapidly Changing Environmental Parameters: C Goethel, J M Grebmeier, L W Cooper

1340h OS43E-2142 POSTER Survival and Breeding Response of a Sea-ice Obligate Seabird Following the Unprecedented Low Extent of Winter Ice in the Bering Sea: G Divoky, D C Douglas, C Barbraud

C44A (CC) Salon H

Thursday 1600h

Advances in Understanding Processes at the Beds of Glaciers and Ice Sheets I

Presiding: Lucas Zoet, University of Wisconsin-Madison; Winnie Chu, Stanford University; Knut Christianson, University of Washington; Neal Iverson, Iowa State University;

1600h C44A-01 Retreat dynamics of marine-based ice sheets: perspectives from diverse high-latitude continental margins: L M Simkins, L R Bjarnadóttir, S L Greenwood, M C M Winsborrow

1615h C44A-02 Hydraulic switches in the subglacial drainage system: C Schoof, S Henry, A Thobani, K Yeo, G C Racz, C Rada

1630h C44A-03 Inferring the Sliding Law Exponent Using Time-Dependent Surface Velocity Observations: B M Minchew

1645h C44A-04 Sliding rule for glacier slip with cavities over a 3D bed: C Helanow, N R Iverson, L Zoet

1700h C44A-05 Freeze-on limits bed strength beneath sliding glaciers: A W Rempel, C R Meyer, A S Downey

1715h C44A-06 Streaks of basal icequakes, subglacial geomorphology, and the evolving basal boundary of a major Antarctic ice stream: C G Barcheck, S M Tulaczyk, S Y Schwartz


1745h C44A-08 Magnitude and Timing of Glacial Erosional Processes Over Long Timescales from Cosmogenic Nuclides: B M Goehring, C Rand, K A Nichols

C44B (CC) Salon G

Thursday 1600h

Collaborative Research to Address Changes in the Climate, Hydrology, and Cryosphere of High-Mountain Asia II

Presiding: Anthony Arendt, University of Washington; Alexandra (Sasha) Richey, Washington State University; Umesh Haritashya, University of Dayton;
1600h Introductory Remarks:

1605h **C44B-01** Cryospheric connections - Tracking the fate of glacier and snow melt water in High Mountain Asia: Implications for regional food security: **D S Grogan, B Osmanoglu, R Hock, R B Lammers, S E Frolking, S D Nicholls, D Rounce, P Montesano, A A Proussevitch, C S R Neigh**

1625h **C44B-02** Comparison and validation of High Mountain Asia land surface models and groundwater storage estimates using GRACE mascon resolution operators: **B D Loomis, A Richey, S Kumar, B A Forman, A A Arendt, R Appana, S B Luthcke, T J Sabaka**

1640h **C44B-03** An analysis of the physical processes controlling observed spatial trends in glacier mass balances across High Mountain Asia: **E S Johnson, S Rupper, S B Kapnick, D Rounce, I Velicogna, J Maurer**

1655h **C44B-04** Projections of 21st Century Regional-scale Glacier Mass Changes and Resulting Impacts on Runoff in the High Asian Mountains: **R Hock, M Huss**

1710h **C44B-05** Toward a High Mountain Asia Snow Reanalysis: **S A Margulis, Y Liu, E Baldo, M Linares, M Tedesco**

1725h **C44B-06** Twenty-first Century Glacier Slowdown Driven By Mass Loss In High Mountain Asia: **A Dehecq, N Gourmelen, A S Gardner, F Brun, D Goldberg, P Nienow, E Berthier, C Vincent, P Wagnon, E Trouvé**

1740h **C44B-07** Understanding the rate of mass loss for debris-covered glaciers in High Mountain Asia: **K M Huybers, S Rupper, J M Maurer**

1755h Concluding Remarks:
Session Information

**Oral Sessions**
Sessions are being held in the Convention Center (CC) and Marriott Marquis (MM)

**Poster Sessions**
Posters are on display in the following venue throughout the week: Hall A-C (Poster Hall)

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Session & Paper Numbering

Paper Numbers - A paper number designates the section, or other sponsoring group, and chronology of the presentation.

Example: **A21A-01** = Atmospheric Sciences, Tuesday, AM, concurrent session A, first paper in that session.

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The program is current as of 06 December 2018. An omitted abstract ID number in the presentation order indicates that the abstract has been withdrawn by the presenter from the session. Please refer to the online program at https://agu.confex.com/agu/fm18/meetingapp.cgi/Home for updates.

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Friday A.M.

**A51P  (CC) Hall A-C (Poster Hall)**

**Friday  0800h**

**Polar Atmospheric Processes and Their Interactions with Land, Ice, and Ocean II**

**Posters (joint with C)**

**Presiding:** Patrick Taylor, NASA Langley Research Center; Linette Boisvert, NASA Goddard Space Flight Center; Lauren Zamora, NASA Goddard Space Flight Center; Richard Cullather, NASA/GSFC Code 610.1;

**0800h** A51P-2429  **POSTER** A modelling study of atmospheric impact on calving in Larsen C Ice Shelf: C Zhang, J Zhang
0800h **A51P-2430** **POSTER** An evaluation of the lower atmospheric stability and related boundary layer processes in the Modern Era Retrospective analysis for Research and Applications version 2 (MERRA2): M Ganeshan, Y Yang

0800h **A51P-2431** **POSTER** Arctic cyclone intensification during the warm season: M G Fearon, J D Doyle, Y Jin

0800h **A51P-2432** **POSTER** Atmospheric rivers over the Arctic: lagrangian characterization of moisture sources: R Nieto, M Vazquez, I Algarra, J Eiras-Barca, A M Ramos, L Gimeno

0800h **A51P-2433** **POSTER** Attributing the Inter-model spread in CMIP5 Seasonal Cloud Amount: R Boeke, P C Taylor, Y Li

0800h **A51P-2434** **POSTER** Characterization of the Structure of Tropopause Polar Vortices through Atmospheric Infrared Sounder (AIRS) Retrievals: R Pajela, S M Cavallo, D D Turner

0800h **A51P-2435** **POSTER** Closing the Water Vapor Exchange Budget between the Ice Sheets and Free Atmosphere: A pilot study for the use of drones: B H Vaughn, T R Jones, A Thayer, W Skorski, V A Morris, K Rozmiarak, H C Steen-Larsen, J W C White

0800h **A51P-2436** **POSTER** Contribution of atmospheric moisture transport to winter Arctic warming: M Hao, Y Luo, Y Lin, Z Zhao, L Wang, J Huang

0800h **A51P-2437** **POSTER** Effects of Midwinter Arctic Leads on Boundary Layer Clouds: S K Krueger, X Li, C Strong, G G Mace

0800h **A51P-2438** **POSTER** Evaluating the Moisture Sources of Water Vapor and Precipitation over Greenland in GISS ModelE2.1: J M Nusbaumer, P M Alexander, A N LeGrande, M Tedesco

0800h **A51P-2439** **POSTER** Evaluation of high-resolution Polar WRF 3DVar forecasts over the Svalbard: D H Kim, H M Kim, J Hong

0800h **A51P-2440** **POSTER** Foehn Winds on Larsen C Ice Shelf During Polar Night: Impacts on the Surface Energy Budget and Melt: M K Laffin, C S Zender

0800h **A51P-2441** **POSTER** Greater Storm Frequency Enhances Primary Productivity in the Laptev and East Siberian Seas: A D Crawford, N S Lovenduski, K M Krumhardt

0800h **A51P-2442** **POSTER** Ice edge wind jets and sea ice-water contrast: Z Liu, A J B Schweiger

0800h **A51P-2443** **POSTER** Identifying Atmospheric Moisture Sources Contributing to Early or Late Melt Onset of Arctic Sea Ice: S Horvath, J C Stroeve, B Rajagopalan

0800h **A51P-2444** **POSTER** Identifying the Water Source of the Accumulation Zones for the Juneau Icefield: N Grisaru, C Onnik, S Lakeram, B R Markle

0800h **A51P-2445** **POSTER** Important contributions of seasalt aerosols to atmospheric bromine cycle in the Antarctic coasts: K Hara, K Osaka, M Yabuki, C Nishita-Hara, H Takashima, N Theys, T Yamanouchi

0800h **A51P-2446** **POSTER** Increased cloud cover enhances mass loss of north Greenland: B Noel, W J van de Berg, M R van den Broeke

0800h **A51P-2447** **POSTER** Investigating long-range transport of Black Carbon into the Arctic: an equal-emission experiment with the Community Atmosphere Model Version 5 (CAM5): Z Chen, G Persad

0800h **A51P-2448** **POSTER** Investigation of Polar Low Formation and Development over the Nordic Sea: Synergetic approach using the Arctic System Reanalysis, Microwave Satellites and Radiative Transfer Simulations: A Radovan, S Crewell, A Rinke, M Mech, E M Knudsen

0800h **A51P-2449** **POSTER** Measuring rain on snow followed by freezing at Alaska SNOTEL sites: A M Cooke, A D Crawford, A Gellert

0800h **A51P-2450** **POSTER** Numerical Modeling of Summer Arctic Boundary Layer during the Arctic Summer Cloud Ocean Study (ASCOS): Y Jin, S Wang, J E Nachamkin, D A Hebert, P G Posey, R A Allard

0800h **A51P-2451** **POSTER** On the Importance of Land-Ice-Air Interaction for Mesoscale Arctic Forecasts: X Hong, S Wang, J D Doyle, J E Nachamkin

0800h **A51P-2452** **POSTER** Process studies on the interactions between spatio-temporal variations in Arctic longwave surface emission and boundary-layer humidity: C Kuo, D Feldman

0800h **A51P-2453** **POSTER** Regional Simulations of Arctic Boundary Layer during Fall Refreezing: S Wang, Y Jin, O P G Persson, P S Guest

0800h **A51P-2454** **POSTER** Satellite-derived cloud response to North Water (NOW) polynya events: E E Monroe, P C Taylor

0800h **A51P-2455** **POSTER** Seasonal and interannual changes of Arctic MODIS cloud regimes: D Lee, L Oreopoulos, N Cho, J H Kim, S Y Jun, B M Kim

0800h **A51P-2456** **POSTER** Spatial dependence of cloud properties at the North Slope of Alaska: M Maahn, G de Boer, S Y Matrosov, T Goren

0800h **A51P-2457** **POSTER** Terrestrial biogenic source contribution to aerosol on the North Slope of Alaska: C E Moffett, T E Barrett, S Yoon, R J Sheesley
0800h **C51A-01** Antarctic snow accumulation over the past 200 years: E R Thomas, B Medley

0815h **C51A-02** Assessment of surface mass balance uncertainties using a surface energy balance model and the Ice Sheet System Model framework: N Schlegel, E Y Larour, A S Gardner, A Khazendar

0830h **C51A-03** INTERANNUAL SURFACE MASS BALANCE SIMULATIONS IN THE AMUNDSEN SECTOR, WEST ANTARCTICA: M Donat-Magnin, N Jourdain, C Agosta, H Gallée, C Amory

0845h **C51A-04** Hidden Water: Investigating the Greenland Firn Aquifer and Implications for Sea Level: L Montgomery, L Koenig

0900h **C51A-05** Role of Greenland’s snowline for amplifying ice sheet melt: J Ryan, L C Smith, D van As, S W Cooley, M G Cooper, L H Pitcher, A Hubbard II

0915h **C51A-06** The SMB Model Intercomparison (SMBMIP) over Greenland: first results: X Fettweis

0930h **C51A-07** Regional Optimization of GRACE and GRACE-FO Processing and Inter-comparison with Regional Climate Models across the Antarctic Ice Sheet: Y Mohajerani, I Velicogna, E J Rignot

0945h **C51A-08** Ultra-high-resolution mapping of Antarctic ice shelf surface melt: L D Trusel, A Pope, M S Moussavi, L T Cioffi
C51C (CC) Hall A-C (Post Hall)
Friday 0800h

**Advancing Understanding of Cold Climate Hydrologic and Geomorphic Systems in a Warming Climate Posters** (joint with A, EP, GC, H)

*Presiding: Jill Marshall, University of Arkansas; Moritz Langer, Humboldt University of Berlin; Cathy Wilson, Los Alamos National Lab; Bob Bolton, University of Alaska Fairbanks;*

0800h **C51C-1046 POSTER** High-Resolution Modeling of a Springtime Ice-Dam Break: *E Douglass, P J Hogan, A J Wallcraft*

0800h **C51C-1047 POSTER** How permafrost thaw will affect the groundwater contribution to streams and lakes?: *P Lamontagne-Halle, B Kurylyk, J M McKenzie, S C Zipper*

0800h **C51C-1048 POSTER** Regional characteristics of the recent moisture transport into the Arctic and Antarctic: *K Oshima, M E Hori, K Yamazaki*

0800h **C51C-1049 POSTER** Modelling ground ice in permafrost using a paleogeographic approach: *H O’Neill, S Wolfe*

0800h **C51C-1050 POSTER** Modeling trajectories of degradation of ice rich permafrost landscapes: *M Langer, J Nitzbon, T Schneider von Deimling, A Oehme*

0800h **C51C-1051 POSTER** The role of subsurface freeze and thaw on groundwater storage and connectivity in a variably saturated upland Arctic hillslope: *S G Evans, S Godsey, C R Rushlow, C Voss*

0800h **C51C-1052 POSTER** Modeling Surface Water and Soil Freezing Processes using Wasim: *R P Daanen, A K Liljedahl, J Schulla*

0800h **C51C-1053 POSTER** Modeling the response of permafrost affected mesoscale watersheds to long term warming: *M V Debolskij, V A Alexeev, D Nicolsky, R Hock, V E Romanovsky, A I Shiklomanov, R B Lammers*

0800h **C51C-1054 POSTER** Sand wedges and cryoturbations on the Ordos Plateau since 50 ka BP and their paleo-environmental implications: *R He, H Jin, X Chen, L Lv*

0800h **C51C-1055 POSTER** Origin, Burial and Preservation of Late Pleistocene-age Glacier Ice in Arctic Permafrost (Bylot Island, NU, Canada): *D Fortier, S Coulombe, D Lacelle, M Z Kanevskiy, D A Fisher, Y Shur*

0800h **C51C-1056 POSTER** A Half-Century of Biophysical Change in Polygonised Tundra on the Coastal Plain of Northern Alaska: *M Orejel Gonzalez, S Villarreal, M J Lara, C E Tweedie, R D Hollister, P J Webber*

0800h **C51C-1057 POSTER** The use of Dynamic General Vegetation Model: *Y Qian*

0800h **C51C-1058 POSTER** Signature of spatiotemporal dynamics of encroaching vegetation in timberline ecotone of the Polar Urals region: *W Zhou, V Y Ivanov, A Y Sheshukov, V Mazepa, S Shiyatov, J Wang, D Liu*

0800h **C51C-1059 POSTER** Estimation of polygonal tundra soil properties by coupled inversion of ERT and hydrothermal data: *A L Atchley, E E Jafarov, D R Harp, E T Coon, B Dafflon, A P Tran, S Hubbard, C J Wilson*

0800h **C51C-1060 POSTER** Development and use of a Distributed Temperature Profiling (DTP) System to Estimate Arctic Soil Thermohydrology and Depth to Permafrost, and their Relationships with Geomorphological and Vegetation Properties: *B Dafflon, H Akins, J Lamb, E Leger, C Ulrich, S Uhlemann, I Shirley, J E Peterson, S Biraud, S Hubbard*

0800h **C51C-1061 POSTER** Simulation of Landscape Changes on the Alaskan Arctic Coastal Plain with the Alaska Thermokarst Model: *B Bolton, G Helene, M J Lara, V E Romanovsky, W J Riley*

0800h **C51C-1062 POSTER** Temporal Variance in Arctic Polygonal Ground Surface Water Sources: *N A Conroy, B D Newman, C J Wilson, S Wullschleger*

0800h **C51C-1063 POSTER** How ice cliffs form and disappear: A process study on two debris-covered Alaskan glaciers: *P Buri, S Herreid, M Truffer*

0800h **C51C-1064 POSTER** Rapid development of thermokarst terrains detected by repeated UAV images in the northeastern Qinghai-Tibetan Plateau, China: *Z Zhou, L Jiang, L Liu, H Wang, T Zhang*

0800h **C51C-1065 POSTER** Linking Surface and Subsurface Behaviors: UAV-based multi-spectral Imagery as Predictor of Soil Wetness, Thaw Depth and Soil Respiration in an Arctic Watershed: *I Shirley, B Dafflon, O Chafe, H Akins, S Biraud, C V Hanson, M S Torn, S Hubbard*

0800h **C51C-1066 POSTER** A Remote Sensing Database of Lake Ice in Alaska: *S Zhang, T Pavelsky*

0800h **C51C-1067 POSTER** Discerning periglacial drainage evolution using historic satellite-imagery-derived digital elevation models: *E C Menio, J A Marshall, J D Cothren*

0800h **C51C-1068 POSTER** Sources of Solute in a High Arctic Glacial Meltwater stream: *M Peek, R M Newton, M Anderson*
0800h **C51C-1069 POSTER** Weathering in the forelands of two rapidly retreating alpine glaciers of volcanic bedrock in the Three Sisters, Oregon, USA: **A M Rutledge**, B H N Horgan, E B Rampe, N Scudder, R Smith

0800h **C51C-1070 POSTER** Diel Variations in High-latitude Non-glacial Stream Water Chemistry: **J B Martin**, A Pain, E E Martin, M Robbins, H G Hall, S Schnur

0800h **C51C-1071 POSTER** Decadal Topographic Change in the McMurdo Dry Valleys: Thermokarst Subsidence and Glacier Thinning Indicate Transfer of Water Storage from the Cryosphere to the Hydrosphere in the Terrestrial Antarctica: **J Levy**, A G Fountain, M Obryk, J W Telling, C L Glennie, R Pettersson, M N Goosef, D J Van Horn

0800h **C51C-1072 POSTER** Climatic impacts on channel geomorphologic change on a valley-wide scale in a hyper-arid polar desert region: Taylor Valley, Antarctica: **M C Barlow**, J W Telling, C L Glennie, A G Fountain

0800h **C51C-1073 POSTER** Shifts in the quantity and quality of dissolved organic carbon delivered to the ocean as continental ice sheets retreat: **A Pain**, J B Martin, E E Martin, S Rahman

0800h **C51C-1074 POSTER** Classifying Stream-Lake Catchment Systems Along River Corridors of an Arctic Coastal Plain Watershed to Guide Resource Management in the Context of Land-Use and Climate Change: **T Johaneman**, C D Arp, M S Whitman, B M Jones, A C Bondurant

0800h **C51C-1075 POSTER** How Freeze-concentration at Ice Grain Boundaries Affects Chemical Weathering Rates: **M Kim**, Y Huh, K Kim, H Y Chung

0800h **C51C-1076 POSTER** A Century-Old Geomorphic Enigma: Cryoplanation Terraces and Associated Processes: **F E Nelson**, K E Nyland

0800h **C51D-1080 POSTER** A 31+ Year Data Record of Intercalibrated Brightness Temperatures from Satellite Passive Microwave Sensors Developed for Global Precipitation Retrievals: **W K Berg**

0800h **C51D-1081 POSTER** Spatial and temporal trends in melt season lengths for Antarctic Peninsula ice shelves from 1978-2018 from passive microwave measurements: **A C Johnson**, M A Fahnestock, R Hock

0800h **C51D-1082 POSTER** Removing ice volume scattering from SSM/I TB for ice surface temperature retrieval: **B J Sohn**, S M Lee, H Shi

0800h **C51D-1083 POSTER** Estimate wind and rain rate inside tropical cyclone using space-borne C- and X-band passive microwave radiometer measurements: **X Yin**, Q Bao

0800h **C51D-1084 POSTER** Thirty-year Arctic sea ice temperature record from FCDR SSM/I and SMIS brightness temperature: **S M Lee**, B J Sohn, C Kummerow

0800h **C51D-1085 POSTER** A 40-year Sea Ice Product Standardized by AMSR Series Passive Microwave Radiometers: **M Seki**, M Hori, K Naoki, M Kachi, K Imaoka

0800h **C51D-1086 POSTER** Highlights of Scientific Research Over Oceans Using Microwave Radiometers: **W T Liu**, X Xie

0800h **C51D-1087 POSTER** CREATING A CONSISTENT OCEANIC MULTI-DECADAL INTERCALIBRATED TRMM-GPM CONSTELLATION DATA RECORD: **W L Jones**, R Chen

0800h **C51D-1088 POSTER** Ocean Surface State Parameter Estimates Using CRTM: **C D Rowley**, J C May

0800h **C51D-1090 POSTER** Understanding AMSR-2 Brightness Temperatures Characterizations over U.S.A in the Presence/Absence of Radio Frequency Interference Contaminations: **D P Yan**, W Li, N Chen, Y Fan

0800h **C51D-1091 POSTER** Comparisons of Microwave Sounder Calibration and Precipitation Long-Term Trends from AMSU-B, MHS, and ATMS: **R Kroodsma**

0800h **C51D-1092 POSTER** Passive microwave precipitation measurements for tropical cyclones based on a priori databases including various cloud microphysics schemes: **J S Kim**, D B Shin, Y Choi, M Joh

0800h **C51D-1093 POSTER** Cloud Tolerant Observations of the Diurnal Land Surface Temperature and Their Utility for Soil Moisture and Evaporation Retrieval: **T R Holmes**, C Hain
0800h **C51D-1095 POSTER** Estimating the uncertainty of sea ice extents in the forty-year passive microwave climate record: **W Meier, J S Stewart**

0800h **C51D-1096 POSTER** Regional Variability of Arctic Sea Ice Seasonal Change Climate Indicators from a Passive Microwave Climate Data Record: **M Steele, A C Bliss, G Peng, W Meier, S Dickinson**

0800h **C51D-1097 POSTER** The Scaling Relationship Between Tropospheric Temperature and Total Column Water Vapor Measured by Passive Microwave Satellite Sensors.: **C A Mears, F J Wentz**

0800h **C51D-1098 POSTER** Three Decades of Air-Sea Essential Climate Variables (AS-ECV) from Satellite Microwave Radiometers: **K F Wentz, F J Wentz, C A Mears, L Ricciardulli, T Meissner**

0800h **C51D-1099 POSTER** The need for the measurement response function (MRF) for optimal deconvolution of AMSR-E SSTs: **B Boussidi, P C Cornillon, G Puggioni**

0800h **C51D-1100 POSTER** A Next Generation Microwave Instrument for Cold Water Salinity Measurement: **S Misra, I Ramos, C Felten, J Bosch-Lluis, S T Brown, S H Yueh, B Latham, T Lee**

0800h **C51D-1101 POSTER** Temporal Variability of Arctic Sea Ice Melt and Freeze Season Climate Indicators Using a Satellite Passive Microwave Climate Data Record: **G Peng, M Steele, A C Bliss, W Meier, S Dickinson**

0800h **C51D-1102 POSTER** A 38+ year record of Arctic sea ice melt onset from satellite passive microwave observations: **A C Bliss, M R Anderson**

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**C51E (CC) Hall A-C (Poster Hall)**

**Friday 0800h**

**Advances in Understanding Processes at the Beds of Glaciers and Ice Sheets Posters**

**Presiding:** Lucas Zoet, University of Wisconsin-Madison; Winnie Chu, Stanford University; Knut Christianson, University of Washington; Neal Iverson, Iowa State University;

0800h **C51E-1103 POSTER** A new model for Antarctic subglacial lakes: **E Mackie, C Scheidt, J Caers, D M Schroeder**

0800h **C51E-1104 POSTER** Modelling the Filling and Draining of Connected Glacial Lakes: **A G Stubblefield, T T Creyts, M W Spiegelman, J Kingslake**

0800h **C51E-1105 POSTER** New insights from an airborne geophysical survey over the hypersaline subglacial lakes beneath Devon Ice Cap, Canadian Arctic: **A Rutishauser, D D Blankenship, L Beem, J S Greenbaum, D A Young, C Grima, A S Criscitiello**

0800h **C51E-1106 POSTER** Subglacial meltwater export from the Greenland Ice Sheet observed during winter: **L H Pitcher, L C Smith, C J Gleason, C Miège, B Hagedorn, J Ryan, D van As, R R Forster**

0800h **C51E-1107 POSTER** Bed roughness as a control on the drainage of subglacial water: **T T Creyts, W Chu, C Grima, D M Schroeder**

0800h **C51E-1108 POSTER** Characterizing the onset of fast flow at Institute Ice Stream, West Antarctica: **M Bryant, E Mantelli, J Suckale, D Castelletti, M J Siegert, D M Schroeder**

0800h **C51E-1109 POSTER** On the verge of a surge; Kongsvegen, northwestern Svalbard: **J Kohler, D Benn, C Borstad, S H Doyle, S E Hamran, B P Hubbard, A J Luckman, B Main, A Messerli, K E Miles, M J Øyan, C Nuth, P R Porter**

0800h **C51E-1110 POSTER** Subglacial Channelization Through Till Deformation and Failure at the Shear Margin: **I Kasmalkar, A Damsgaard, L Goren, J Suckale, A Cabrales-Vargas**

0800h **C51E-1111 POSTER** Basal Signatures of Subglacial Impact Structures: **M A Fahnestock, J A MacGregor, K H Kjaer, N K Larsen, T Binder, A A Bjerk, O Eisen, V Helm, K K Kjeldsen, H Machguth, M Morlighem, J D Padon, M Studinger**

0800h **C51E-1112 POSTER** Sensitivity of the Northeast Greenland Ice Sheet to uncertainties in geothermal heat flux: **S Smith-Johnsen, N Schlegel, B de Fleurian, K H Nisancioglu**

0800h **C51E-1113 POSTER** Spectral Characteristics of the Castleguard Glacier Forefield, Alberta, CA: **J Woodard, L Zoet, N R Iversen**

0800h **C51E-1114 POSTER** Experimental Constraints on Subglacial Abrasion: **D Hansen, L Zoet**

0800h **C51E-1115 POSTER** Continuous Simulations over the Last 34 Million Years with a Coupled Antarctic Ice Sheet and Sediment Model: **D Pollard, R M Deconto**

0800h **C51E-1116 POSTER** A Comparison of Basal Sliding and Erosion in Numerical Glacial Landscape Evolution Models Using Two Different Sliding Laws: **J Lai, A M Anderson**


0800h **C51E-1119 POSTER** Tectonic and Climate Influences on Spatial and Temporal Variations of Subglacial Erosion; Bering Glacier, Alaska: **M L Penkrot**, J M Jaeger, E A Cowan, M H Walczak, A C Mix, L LeVay

0800h **C51E-1120 POSTER** ESTABLISHING THE LAST GLACIAL MAXIMUM-TO-MODERN SPATIAL PATTERNS OF GLACIAL EROSION IN THE BERING-BAGLEY GLACIAL SYSTEM, GULF OF ALASKA, FROM IODP EXPEDITION 341 SITE U1421: **K McGillivray**, J M Jaeger, E A Cowan, S Zellers

0800h **C51E-1121 POSTER** Improving the Understanding of Subglacial Weathering Using Variations in Silicon Isotope Composition.: **J Hatton**, K R Hendry, J Hawkins, J Wadham

0800h **C51E-1122 POSTER** Holocene Antarctic subglacial weathering and ice-sheet history reconstructed using the authigenic $^{10}$Be/$^9$Be ratios of sediments from lake Maruwan Oike, Antarctica: **A D Sproson**, Y Yokoyama, Y Takan, Y Miyairi

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**C51F  (CC) Hall A-C (Poster Hall)**

**Friday 0800h**

**Beyond Ice Thickness: Using Radar Sounding to Understand the Dynamics of Glacier Systems Poster**

**Presiding:** Nicholas Holschuh, University of Washington; Dustin Schroeder, Stanford University; Winnie Chu, Stanford University; Jonathan Kingslake, Lamont-Doherty Earth Observatory, Columbia University;


0800h **C51F-1124 POSTER** Multi-Static Observations Using a Stationary Phase Sensitive Ice Penetrating Radar to Constrain Temperature and Water-Content Anomalies Across Shear Margins: **N L Bienert**, D M Schroeder, S T Peters


0800h **C51F-1126 POSTER** Airborne Radar Reveals Multi-Decadal Basal Melt Rates for Ross Ice Shelf, Antarctica: **I Das**, L Padman, R E Bell, K J Tinto, H A Fricker, N Frearson, C S Siddoway, M R Siegried

0800h **C51F-1127 POSTER** Interpretation of ice-sheet internal stratigraphy: a test-bed for automated approaches: **R Delf**, D M Schroeder, R G Bingham

0800h **C51F-1128 POSTER** Radar Reflections from Basal Ice May Be Misinterpreted As Frozen Bed: **N Foley**, S M Tulaczyk, J I Walter

0800h **C51F-1129 POSTER** Automated Detection and Categorization of Antarctic Basal Units Using Radar Sounding Data: Demonstration in Institute Ice Stream, West Antarctica: **M L Goldberg**, D M Schroeder, D Castelletti, N Ross, M J Siegert

0800h **C51F-1130 POSTER** Using radar sounding to detect grounding line positions with evidence of modern grounding line retreat in East Antarctica: **F Habbal**, J S Greenbaum, C Grima, D A Young, J L Roberts, T D van Ommen, D D Blankenship

0800h **C51F-1131 POSTER** Using radio-wave attenuation to constrain ice temperature in regions of fast flow: **B H Hills**, K A Christianson, N Holschuh, S Anandakrishnan

0800h **C51F-1132 POSTER** Using airborne radar data to identify basal crevasses and their effects on ice hydrofracturing: **C Y Lai**, H Stone, I Das

0800h **C51F-1134 POSTER** Constraining the Englacial and Basal Thermal State Beneath the Dome Fuji Region, East Antarctica Using Airborne Radar Sounding Data: **A Miltenberger**, D M Schroeder, N B Karlsson, O Eisen, T Binder

0800h **C51F-1135 POSTER** Assessing the risk of hazards at Norwegian plateau glaciers in a warmer climate: **T Roethe**, F E Johansson, J Bakke

0800h **C51F-1136 POSTER** Multi-Instrument Synthesis of Radar Sounding Observations of the Thwaites Glacier and Pine Island Glacier Catchments, West Antarctica: **D M Schroeder**, A M Hilger, D Castelletti, W Chu, T Jordan, H L Seroussi, D A Young, D G Vaughan
C51G (CC) Hall A-C (Poster Hall)

Friday 0800h

Advances in Subglacial, Englacial, and Supraglacial Hydrology Posters (joint with EP, H)

Presiding: Colin Meyer, University of Oregon; Kristin Poinar, SUNY Buffalo; Samiah Moustafa, Brown University;


0800h C51G-1139 POSTER Controls on Supraglacial Stream Canyon Formation: S L St Germain

0800h C51G-1140 POSTER Controls on the growth of a supraglacial drainage network on the Amery Ice Shelf, East Antarctica: J Spergel, J Kingslake, M Wearing

0800h C51G-1141 POSTER Do closely spaced crevasses in Greenland connect englacially to reach the bed?: K Poinar, L C Andrews, C R Meyer, K M Brunt

0800h C51G-1142 POSTER Drivers of extreme 2012 melt and basin-scale runoff from three catchments along the West Greenland ice sheet: S Moustafa, A K Rennermalm, D A Robinson, T L Mote, D van As, I Overeem, R S Sletten, B Hagedorn, A B Mikkelsen, B Hasholt

0800h C51G-1143 POSTER Evidence for Unique Subglacial Meltwater Features in Indiana and Ohio: Implications for Huron-erie Lobe Deglaciation and Meltwater Drainage Mechanisms: A Sodeman, T G Fisher, R Becker


0800h C51G-1145 POSTER Generating Drainage Basins On Hydraulic Potentiometric Surface of Greenland On High Resolution: I G Fenty, A H Shin

0800h C51G-1146 POSTER Monitoring and quantifying supraglacial lake volumes across Antarctica from a suite of satellite observations: M S Moussavi, A Pope, L D Trusel, A R W Halberstadt

0800h C51G-1148 POSTER Predicting crevasse and moulin formation through analytic modeling: J Stock, K Poinar, L C Andrews

0800h C51G-1149 POSTER Proglacial and Subglacial Meltwater Ion Concentrations for the Llewellyn Glacier, B.C., summer 2018: A Chien, E Zhu, M Gallop, L D Starr, S K Fortner

0800h C51G-1150 POSTER Seasonal evolution of supraglacial lakes and rivers on the southwestern Greenland Ice Sheet: K Yang, L C Smith, D van As, L H Pitcher, M G Cooper, M Li

0800h C51G-1151 POSTER Sentinel-I SAR Observations of Greenland Perennial Firn Aquifer Regions: W Scott, R R Forster


0800h C51G-1153 POSTER Study of Greenland subglacial hydrology at medium-high resolutions: L Bertagna, M J Hoffman, M Perego, S F Price

0800h C51G-1154 POSTER Supraglacial Stream Morphology and Flow Characteristics from Ultra-High-Resolution Bathymetric Mapping: S Z Leidman, A Rennermalm, R Muthyala, M G Cooper, L C Smith

0800h C51G-1155 POSTER Surface Melt Driven Behaviour in Soft Bedded Glaciers.: J K Hart, K Martinez

0800h C51G-1156 POSTER The Spatial Variability and Characteristics of Moulins in southwest Greenland: L King, G E Flowers, H Marwan

GC51M (CC) Hall A-C (Poster Hall)

Friday 0800h


Presiding: Paul Durack, Lawrence Livermore National Laboratory; Nadya Vinogradova Shiffer, NASA Headquarters; John Reager, NASA Jet Propulsion Laboratory; Remy Roca, CNRS;

0800h GC51M-0945 POSTER Barrier Layer in the Western Pacific Ocean during extreme El Niños: Observations and Mechanism: X Zhang, L Zeng


0800h GC51M-0947 POSTER Estimation of Freshwater Fluxes from the Arctic Ocean using SMAP and CFS Salinity: R E Nichols, S Bulusu

**Environmental Seismology: Using Geophysical Tools for Earth Surface Processes Research**

**Posters** *(joint with A, NH, NS, OS)*

**Presiding:** Danica Roth, University of Oregon; Aurélien Mordret, Massachusetts Institute of Technology; Bradley Lipovsky, Harvard University; Michael Dietze, Deutsches GeoForschungsZentrum;

0800h **GC51M-0949 POSTER** Examining the Pattern of Salinity Change at Upper Pacific Ocean during the Argo Period: L Guancheng, C Liijing

0800h **GC51M-0950 POSTER** Atmospheric Redistribution of Freshwater and Near-Surface Salinity Variability over the North Atlantic Ocean: J R Reagan, D Seidov, T Boyer

0800h **GC51M-0951 POSTER** Real-Time Monitoring of Sub-Seasonal Variations of Sea-surface Salinity and Freshwater Flux: L Ren, P Xie, Y Xue, A Kumar, T Boyer, E J Bayler

0800h **GC51M-0952 POSTER** SMAP Salinity Observations detect Indian Monsoon Intraseasonal Oscillations: S Bulusu

0800h **GC51M-0953 POSTER** The ocean can act as a rain gauge for tropical precipitation: J Carton, G A Chepurin, L Chen, S Grodsky


**SS1D  (CC) Hall A-C (Poster Hall)**

**Friday  0800h**

**Environmental Seismology: Using Geophysical Tools for Earth Surface Processes Research**

**Posters** *(joint with A, NH, NS, OS)*

**Presiding:** Danica Roth, University of Oregon; Aurélien Mordret, Massachusetts Institute of Technology; Bradley Lipovsky, Harvard University; Michael Dietze, Deutsches GeoForschungsZentrum;

0800h **SS1D-0352 POSTER** Nature of Typhoon-induced Microseisms and Seismological Typhoon Tracking: S Park, T K Hong

0800h **SS1D-0353 POSTER** Relationship between Earthquakes and Tropical Cyclones in the North Atlantic region: A Abe Pacini, S Raizada, P V Devulapalli, N K Kondapalli

0800h **SS1D-0354 POSTER** Microseismic signature of the 2016-2018 cyclones in La Réunion Island: E J Rindraharisaona, G Barruol, F R Fontaine, A Gonzalez, E Cordier, M Singh

0800h **SS1D-0355 POSTER** Characterizing Wind Noise and Spatial Variability on Near-Surface Broadband Seismometers: S Dybing, A T Ringler, D C Wilson, R E Anthony

0800h **SS1D-0356 POSTER** Investigating Short-Period Microseisms near Lake Malawi using a Broadband Array of Onshore and Lake-Bottom Seismometers: C J W Carchedi, J B Gabbert, D J Shillington, N J Accardo, C A Scholz, P R N Chindandali, R Ferdinand, A Nyblade

0800h **SS1D-0357 POSTER** Source Regions of Infragravity Waves Recorded at the Bottom of the Equatorial Atlantic Ocean Using OBS of the PI-LAB Experiment: A Karamitrou, P Bogiatzis, J F Neale, N Harmon, C Rychert, M A Srokosz

0800h **SS1D-0358 POSTER** Monitoring The River Activity of Two Rivers During Cyclones in La Réunion Island from a Seismic Network: G Barruol, A Gonzalez, F R Fontaine, A Recking, J L Join, E Delcher

0800h **SS1D-0359 POSTER** Peeping Below the Ice – Seismic Probing of Water Flow and Sediment Flux in a Frozen Scandinavian River: M Dietze VI, J M Turowski, L E Polvi, E S Lotsari, L Lind

0800h **SS1D-0360 POSTER** Local subglacial hydrologic conditions mapped with glaciohydraulic tremor during an outburst flood at Lemon Creek Glacier, Alaska: C R Labeledt, T C Bartholomaus, J M Amundson, F Gimbert, S A Veitch, M S Karplus, V C Tsai

0800h **SS1D-0361 POSTER** Tidally Modulated Microseismicity Near the Grounding Zone of the Whillans Ice Plain: Observations and Analysis of Seismic Source: E Schnorr, T Paladino, C G Barcheck, S Y Schwartz, S M Tulaczyk

0800h **SS1D-0362 POSTER** Seasonality of Antarctic microseisms: a window on sea ice variability: D Zigone, A Maggi

0800h **SS1D-0363 POSTER** A New Year’s Day Icebreaker: Icequakes on Lakes in Alberta, Canada: M Van der Baan, J L Kavanaugh, R Schultz, L D Andriashek, H Ghofrani, G M Atkinson, D Utting

0800h **SS1D-0365 POSTER** Monitoring Greenland calving volumes with glacial earthquakes: A Mangeney, A Sergeant, V Yastrebov, J P Montagne, O Castelnau, E Stutzmann, F Walter, P H H Bonnet, V J L Lalaiarisoa


0800h **SS1D-0367 POSTER** Seismic moment tensor and single force analysis of landslides in Switzerland and Greenland: C R Alvizuri, F Walter, G Hetényi
0800h **S51D-0368** *POSTER* Earthquake-Induced Dynamic Rupture in a Slope: Due to Mass Flow or Wave Propagation?: **K Uenishi**, T Goji

0800h **S51D-0369** *POSTER* Using seismoelectric earthquake signals to characterize the subsurface – a synthetic case study on the Armutlu Peninsula, Turkey: **L Dzieran**, M Thorwart, W Rabbel

0800h **S51D-0370** *POSTER* Unexpected far-field hydrological response to a great earthquake: **Y Zhang**, C Y Wang, L Y Fu, B Zhao Sr, Y Ma

0800h **S51D-0371** *POSTER* Ground Tilts Derived from Seismometers: Examples from Taiwan: **C F Yang**, W C Chi, C J Lin

0800h **S51D-0372** *POSTER* Ambient Noise Tomography Applied to Abandon Tailing Dam: Results From a Very Short Experiment: **G Peña**, D Comte, C Pasten Sr, J Salomon, M Saez

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**C52A** (CC) Salon H

**Friday 1020h**

**Ice Core Records of Environmental Change I (joint with A, B, GC)**

*Presiding: Tyler Fudge*, University of Washington Seattle Campus; **Erich Osterberg**, Dartmouth College; **Murat Aydin**, University of California Irvine; **Yuzhen Yan**, Princeton University;


1035h **C52A-02** Ice core measurements of ethane and acetylene over the last 2,000 years and implications for preindustrial biomass burning variability: **M R Nicewonger**, M Aydin, M J Prather, E S Saltzman

1050h **C52A-03** Evolution of tropospheric O₃ from preindustrial to present inferred from ¹⁸O/¹⁸O in polar firm and ice: **L Yeung**, L T Murray, P Martinerie, E Witrant, H Hu, A Banerjee, A J Orsi, J A Chappellaz

1105h **C52A-04** Is the rate of ocean warming during the Younger Dryas overestimated?: **S A Shackleton**, B Bereiter, D Baggenstos, J P Severinghaus


1135h **C52A-06** Time-scale independent patterns of Antarctic temperature change: **B R Markle**

1150h **C52A-07** Atmospheric drivers of 20th century changes in Antarctic-wide snow accumulation: **B Medley**, E R Thomas, J Lenaerts, J G Fyke

1205h **C52A-08** A 2100 Year Ultra-High-Resolution Saharan Dust Record: **H Clifford**, P Böhleber, N E Spaulding, A Kurbatov, E Korotkikh, S B Sneed, M Handley, M McCormick, C Loveluck, A More, P A Mayewski

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**C52B** (CC) Salon G

**Friday 1020h**

**Observing, Modeling, Diagnosing, and Predicting Hydrological and Earth System Change in Cold Regions II (joint with A, B, H)**

*Presiding: John Pomeroy*, Centre for Hydrology and Global Institute for Water Security; **Alain Pietroniro**, Environment and Climate Change Canada; **Sean Carey**, McMaster University; **Chris DeBeer**, University of Saskatchewan;

1020h **C52B-01** Energy balance changes drive differential response to simulated warming in an alpine and subalpine snowpack: **K S Jennings**, N P Molotch

1035h **C52B-02** Higher Snowfall Intensity Reduces Warming Impacts on Mid-Winter Snow Ablation and Accumulation: **A M Marshall**, T E Link, A Robinson, J T Abatzoglou

1050h **C52B-03** Surficial geology-based mapping of the future changes in groundwater recharge in a semi-arid watershed in the Canadian Prairies with climate warming: **K Rasouli**, A Negm, I Pavlovskii, J W Pomeroy, M Hayashi

1105h **C52B-04** Advances in continental-domain hydrologic modeling and prediction: **M P Clark**, A W Wood, B Nijssen

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1120h **C52B-05** A hydrological and water temperature modelling framework to simulate the timing of river freeze-up and ice-cover breakup in large-scale catchments: **L A Morales-Marin, P Sanyal, H Kadowoki, Z Li, P Rokaya, K E Lindenschmidt**

1135h **C52B-06** Improving Lake Ice Simulations for Temperate Region Lakes: **A Robinson, S Ariano, L Brown**

1150h **C52B-07B** Hydrological Response of Two Mountain Glaciers in the Canadian Rockies to Warming Climate and Change in Glacier Configurations: **D Pradhananga, J W Pomeroy**

1205h **C52B-08** Seasonal shifts in solute flux and water source chemistry in a coastal glaciated watershed undergoing rapid change: Wolverine Glacier Watershed, Alaska: **A Bergstrom, J C Koch, S O’Neel**
Friday P.M.

**A53D (CC) 152A**

**Friday 1340h**

**Polar Atmospheric Processes and Their Interactions with Land, Ice, and Ocean**

*Joint with C*

**Presiding:** Patrick Taylor, NASA Langley Research Center; Linette Boisvert, NASA Goddard Space Flight Center; Lauren Zamora, NASA Goddard Space Flight Center; Richard Cullather, NASA/GSFC Code 610.1;


1355h **A53D-02** Satellite Observations of Arctic Snowfall Regimes: E McIlhattan, T S L’Ecuyer, C Pettersen


1425h **A53D-04** Low-level sublimation of Antarctic snowfall due to katabatic winds: A Berne, J Grazioli, J B Madeleine, R Forbes, C Genthon, H Gallée, G Krinner

1440h **A53D-05** Marine and terrestrial influences on ice nucleating particles during continuous springtime measurements in an Arctic oilfield location: J Creamean, N K Colombi, J Ceniceros, T Aydell, R Kirpes, K Pratt, N J Spada, M Maahn, G de Boer, R C Schnell, S China


1510h **A53D-07** Sensitivity of blowing snow salt aerosol emissions and radiative effects in polar regions to uncertainties in physical processes: H M Horowitz, S M Burrows, J Huang, C M Birz, L Jaegle, B Alexander

1525h **A53D-08** The Response of Polar Cyclone Intensification to Changing Sea Ice and Sea Surface Temperature: C Parker, A H Lynch, P Mooney

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**C53A (CC) Salon H**

**Friday 1340h**

**Advancing Understanding of Cold Climate Hydrologic and Geomorphic Systems in a Warming Climate**

*Joint with A, EP, GC, H*

**Presiding:** Jill Marshall, University of Arkansas; Moritz Langer, Humboldt University of Berlin; Bob Bolton, University of Alaska Fairbanks; Cathy Wilson, Los Alamos National Lab;

1340h **C53A-01** Contemporary changes in the pan-Arctic river flow and analysis of their potential causes: A I Shiklomanov, R B Lammers, A A Proussevitch, S Déry

1355h **C53A-02** Warming water in Arctic terrestrial rivers under climate change: H PARK, Y Yoshikawa, K Oshima, D Yang

1410h **C53A-03** Attention: Summer rainfall floods in large northern rivers: D Yang, R R Shrestha, H PARK

1425h **C53A-04** Analyzing how scenarios of climate extremes and lake water-use impact stream low flows and connectivity in an Arctic Coastal Plain watershed in northern Alaska: A Gaedeke, C D Arp, A K Liljedahl, R P Daanen, M S Whitman, L Cai, V A Alexeev, B M Jones

1440h **C53A-05** Snow Cover, Air Temperature and Groundwater Flow Affect the Ground Thermal Regime of Zero-Order Upland Arctic Drainage Networks: S Godsey, C R Rushlow, C Voss, A H Sawyer

1455h **C53A-06** Quantifying organic carbon mobilization and storage in permafrost river floodplains: M Douglas, J C Rowland, G Li, P C Kemeny, A J West, A Piloujars, J Schwenk, A J Chadwick, M P Lamb, W W Fischer

1510h **C53A-07** The losers are turning green: Expanding Arctic riparian tall shrub cover indicates a shift in stream hydrologic regime: A K Liljedahl, R P Daanen, G V Frost Jr, I Timling

1525h **C53A-08** Simulating Ice-rich Permafrost Landscapes under Climate Change with Laterally Coupled Tiles in a Land Surface Model: K S Aas, J Nitzbon, L Martin, T Berntsen, S Westermann
**EP53F-1959** POSTER Transecting the Cordillera Blanca of northern Peru: a glacial geochronology determined from $^{10}$Be exposure ages of moraine crest boulders: S R. Hall, J M McKenzie, B L Hall, A S B Meriaux, M A Fortin


**EP53F-1962** POSTER Wet Climate in Qaidam Basin during the Last Glacial Period: M Hou, G Zhuang, M Wu

**EP53F-1963** POSTER Assessment of bias-corrected CMIP5 multi-model ensemble optimization in precipitation and temperature over China: X Yang, Y Wang, M Zhang, L Ren, Y Liu, F Yuan, S Jiang

**EP53F-1964** POSTER Holocene High Lake Level and Its Paleoclimatic Significance in Mu Us Desert, Northern China: L Dawei Sr, Y Wu, W Qiu, L Tan, Y Wen

**EP53F-1966** POSTER Bedrock incision in the Channeled Scablands by megafloods during and prior to the Last Glacial Maximum: J J Larsen, M P Lamb, K A Farley


**EP53F-1969** POSTER Role of Climate Change in the 21st Century Riverine Water Discharge and Suspended Sediment Fluxes at a Global Scale: N P Moragoda, S Cohen


**EP53F-1971** POSTER Experimental Investigation of Temperature Control on Particle Settling Velocity: Y Lim, W Kim


**EP53F-1975** POSTER Effects of Snow Removal on Soil Frost Development in Forested Peatlands: **H C Friesen, R Slesak, D L Karwan, R Kolka**


**EP53F-1977** POSTER Old tools applied at new scales to monitor the frequency and magnitude of algal blooms in response to climate change: **M Dallosch, I F Creed**


**EP53F-1979** POSTER Landscapes as Filters for Climate Change: Insights from Numerical Modeling and Paleolake Core Data for East Africa: **P Chatanantavet, J D Pelletier, A S Cohen**


**EP53F-1981** POSTER Signatures of obliquity and eccentricity in soil chronosequences: **C Shepard, J D Pelletier, M G Schaap, C Rasmussen**

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**C54A (CC) Salon H**

**Friday 1600h**

**Advancing Understanding of Cold Climate Hydrologic and Geomorphic Systems in a Warming Climate II** (joint with A, EP, GC, H)

**Presiding:** Jill Marshall, University of Arkansas; Moritz Langer, Humboldt University of Berlin; Bob Bolton, University of Alaska Fairbanks; Cathy Wilson, Los Alamos National Lab;

1600h **C54A-01** Ground ice types and amounts in permafrost on Svalbard: Overcoming the challenge of coarse-grained sediment: **H H Christiansen, G L Gilbert, H O’Neill, U Neumann**

1615h **C54A-02** Introducing Stochasticity into Rock Fracture by Frost Cracking: **R Peterson**

1630h **C54A-03** Relative and Absolute Weathering Trends from Eagle Summit, Alaska Cryoplanation Terraces: **K E Nyland, F E Nelson, R J Mitchell**

1645h **C54A-04** Monitoring and modelling the evolution of ice-rich peat plateaus and palsas in Northern Norway: **L Martin, S Westermann, J Nitzbon, K S Aas, B Etzelmuller, J Scheer, J Obu, H Kristiansen**

1700h **C54A-05** Localized ground ice subsidence and soil water dynamics as indicators of near-surface ice content in the High Arctic: **S F Lamoureux, S f McFadden, G Bevan, A Rudy, M Paquette, D Fortier**

1715h **C54A-06** Geomorphic feedbacks enhance the stability of high-centered polygons: **C Abolt, M Young, A L Atchley, D R Harp, E T Coon**

1730h **C54A-07** Modeling the role of preferential snow accumulation in through talik development and hillslope groundwater flow in a transitional permafrost landscape: **E E Jafarov, E T Coon, D R Harp, C J Wilson, S L Painter, A L Atchley, V E Romanovsky**

1745h **C54A-08** Exploring the interactions between thermal hydrology, soil structure, and dynamic topography in warming polygonal tundra: **E Coon, A Jan, J D Jastrow, S L Painter, C J Wilson**