



AGU Fall 2021

Permafrost-Related Presentations Guide

United States Permafrost Association (USPA) | Communications Committee

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Cryoplanation terraces, Chena Dome, AK - Photo from USPA Educational Permafrost Gallery – Gerald "JJ" Frost





Table of Contents

Introduction	2
Daily Totals	3
Monday, December 13th	4
eLightning/Hybrid Presentations.....	4
Oral Presentations	4
Poster Presentations.....	8
Tuesday, December 14th.....	14
Online Only Presentations	15
eLightning/Hybrid Presentations.....	16
Oral Presentations	16
Poster Presentations.....	21
Wednesday, December 15th	24
Online Only Presentations	25
eLightning/Hybrid Presentations.....	25
Oral Presentations	26
Poster Presentations.....	30
Thursday, December 16th.....	34
eLightning/Hybrid Presentations.....	35
Oral Presentations	35
Poster Presentations.....	39
Friday, December 17th	44
Online Only Presentations	44
eLightning/Hybrid Presentations.....	47
Oral Presentations	47
Poster Presentations.....	52

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Introduction

The following is a collection of essentially all AGU Fall 2021 Conference Presentations related to permafrost. Presentations are in chronological order and were searched for on the AGU Fall 2021 Meeting website using the search terms listed below as they appear in either the title or abstract text. The “First Author” is sometimes represented by the “Presenting Author” if the first author is not the actual presenter. This document is searchable for other key terms of interest (i.e., groundwater) using “Ctrl+F”. In addition, there are a total of 67 USPA members (names highlighted in orange) in this collection!

To access the presentations, the viewer will need to be registered for the virtual conference or attend the in-person conference. Please refer to the AGU Fall 2021 website for further assistance.

This compilation was prepared under the auspices of the United States Permafrost Association’s (USPA) Communications Committee (Michael Lilly, Chair) and its several members.

Search Terms

- | | | |
|------------------------------|----------------------|-----------------------------|
| ◇ Active Layer | ◇ Frozen Soil | ◇ Solifluction |
| ◇ Aufeis | ◇ Ground Ice | ◇ Thaw Consolidation |
| ◇ Coastal Erosion | ◇ Ice Wedge | ◇ Thaw Slump |
| ◇ Cold Regions | ◇ N-Factor | ◇ Thaw Strain |
| ◇ Cryoplanation | ◇ Perennially Frozen | ◇ Thawing Degree Days (TDD) |
| ◇ Cryosol | Ground | ◇ Thawing Index |
| ◇ Freezing Degree Days (FDD) | ◇ Periglacial | ◇ Thermal Degradation |
| ◇ Freezing Index | ◇ Permafrost | ◇ Thermal Model |
| ◇ Frost Action | ◇ Pingo | ◇ Thermokarst |
| ◇ Frost Heave | ◇ Soil Adfreeze | ◇ Thermosyphon |
| ◇ Frozen Debris Lobe | ◇ Soil Creep | ◇ Tundra Soils |
| ◇ Frozen Ground | ◇ Soil Frost | ◇ Yedoma |
| | ◇ Soil Prethawing | |

Sponsors



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Daily Totals

The table below outlines the daily numbers and type of presentations in this document that will take place during the conference.

AGU 2021 Daily Count of Permafrost-Related Presentations					
Date	Online Only	eLightning	Oral	Poster	Daily Total
13-Dec	0	1	23	45	69
14-Dec	9	1	33	21	64
15-Dec	1	6	26	29	62
16-Dec	0	1	27	32	60
17-Dec	19	3	30	37	89
Totals	29	12	139	164	344

If you have any questions, please send us an email at info@uspermafrost.org. We hope this guide helps you engage with the presenting authors find quality permafrost presentations. Over 67 authors are members of the US Permafrost Association (highlighted in orange). If you are not already a member, please consider joining. You can find more information at www.uspermafrost.org.



Monday, December 13th

eLightning/Hybrid Presentations

U15A-08 Quantifying the impact of wintertime changes on the arctic carbon cycle

First author: Alexandra Pongracz
19:21 - 19:24, Monday, December 13th
Convention Center - eLightning Theater II

Oral Presentations

NS11A-01 Recent widespread permafrost thaw in Interior Alaska quantified from geophysical measurements, boreholes, ground-based surveys, and remote sensing

First author: Thomas A Douglas
11:00 - 11:05, Monday, December 13th
Convention Center - Room 346-347

B11B-01 Changing conditions for mineral-organic carbon interactions across the permafrost landscape: hot moments more than hot spots?

First author: Sophie Opfergelt
11:02 - 11:08, Monday, December 13th
Convention Center - Room 238-239

NS11A-02 Year-round geoelectrical monitoring of recently deglaciated soils in the High Arctic

First author: Oliver Kuras
11:05 - 11:10, Monday, December 13th
Convention Center - Room 346-347

B11B-02 An Annually Resolved Record of Permafrost-thaw Induced Carbon Cycling Changes for the Past 60 Years from White Fish Lake, Seward Peninsula, Alaska

First author: Karen Jiayi Wang
11:08 - 11:14, Monday, December 13th
Convention Center - Room 238-239





GC11B-02 Human and Physical Systems Interactions in the Arctic: Early Results from the Interdisciplinary Research for Arctic Coastal Environments

First author: Stephanie Waldhoff

11:10 - 11:15, Monday, December 13th

Convention Center - Room 206-207

B11B-03 Microbial comparative transcriptomics in abruptly thawing Greenlandic permafrost

First author: Maria Scheel

11:14 - 11:20, Monday, December 13th

Convention Center - Room 238-239

NS11A-04 Using Geophysics to Understand Seasonal Controls on Metal Transport in Arctic Watersheds

First author: **Amanda J Barker**

11:15 - 11:20, Monday, December 13th

Convention Center - Room 346-347

NS11A-05 Temperature Dependence of Borehole NMR-Sensed Soil Moisture in Permafrost Regimes

First author: **Taylor D Sullivan**

11:20 - 11:25, Monday, December 13th

Convention Center - Room 346-347

B11B-05 Seasonal Solute Cycles and Yields from Streams Across Alaska's Cryosphere

First author: Jordan Jenckes

11:26 - 11:32, Monday, December 13th

Convention Center - Room 238-239

A11E-08 Influences of Snowmelt Timing and Polar Jet Dynamics on Fire Activity in Eastern Siberia

First author: Rebecca Scholten

11:35 - 11:40, Monday, December 13th

Convention Center - Room 283-285

B11D-07 Assembly of Microbial Communities in Thawing Permafrost

First author: **Hannah Holland Moritz**

11:35 - 11:40, Monday, December 13th

Convention Center - Room 255-257





B12D-01 Whole-Ecosystem Warming of a Boreal Peatland Decreases Microbial Diversity and Stimulates Methane Production from Plant Metabolites

First author: Caitlin Petro

12:50 - 12:55, Monday, December 13th

Convention Center - Room 255-257

NS12A-02 Watching the Arctic Thaw: Seismic Monitoring of Permafrost Degradation Using Distributed Acoustic Sensing During a Controlled Heating Experiment

First author: Feng Cheng

12:50 - 12:55, Monday, December 13th

Convention Center - Room 346-347

B12D-02 Permafrost microbial communities are structured by latitudinal and soil chemical gradients

First author: **Mark P Waldrop**

12:55 - 13:00, Monday, December 13th

Convention Center - Room 255-257

B12D-03 Stable Isotope Labelling to Trace Litter Degradation Pathways: A View Into the Carbon Cycling Processes Occurring in a Peat Bog

First author: Christian Ayala

13:00 - 13:05, Monday, December 13th

Convention Center - Room 255-257

B12D-08 Integration of genome-informed microbial traits in ecosystem models reveals divergent methane productions in thawing permafrost

First author: Zhen Li

13:25 - 13:30, Monday, December 13th

Convention Center - Room 255-257

NS13A-03 A Novel Technique for Wavespeed Determination in Ground-Penetrating Radar Applied to the Problem of Constraining Ice Content and Subsurface Geometry in Rock Glaciers

First author: Tyler Meng

15:55 - 16:00, Monday, December 13th

Convention Center - Room 346-347





B13D-05 Footprints in the tundra: Considerations for linking remote sensing observations with flux tower data in the Arctic-Boreal Zone

First author: Erica Orcutt

16:10 - 16:15, Monday, December 13th

Convention Center - Room 231-232

NS13A-06 A Multi-Frequency Ground Penetrating Radar Investigation of Buried Ice Beneath Pyroclastic Deposits at Askja Volcano, Northern Iceland

First author: Emileigh Shoemaker

16:10 - 16:15, Monday, December 13th

Convention Center - Room 346-347

H13G-08 Anabranching prevalence and intensity along the world's 20 largest rivers

First author: Bo Wang

16:30 - 16:35, Monday, December 13th

Convention Center - New Orleans Theater A

C13A-08 Impact of measured and simulated tundra snowpack properties on heat transfer

First author: Victoria R. Dutch

16:46 - 16:54, Monday, December 13th

Convention Center - Room 215-216

H14E-06 The Influence of Shrub Expansion, Frozen Ground, and Seasonality on Diurnal Patterns of Stream Discharge and Chemistry in a Subarctic Headwater Catchment, Yukon, Canada

First author: Arsh Grewal

18:00 - 18:05, Monday, December 13th

Convention Center - Room 271-273

U13B-12 IPCC AR6 WGI Chapter 12: Climate change information for regional impact and for risk assessment

First author: Alexander C Ruane

19:00 - 19:15, Monday, December 13th

Convention Center - Great Hall, Prow Main Stage





Poster Presentations

B15A-1406 Herbivory effects on land cover in the Arctic: Pleistocene shifting-baseline syndrome or too high expectations of top-down mechanisms?

First author: Marc Macias-Fauria and Marcus P Spiegel
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15A-1407 A Physically Based Analytical Model of Permafrost Active Layer Thawing Depth

First author: Modi Zhu
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15A-1409 The Arctic Carbon Monitoring and Forecasting System: a novel forecasting framework to build new understanding and reduce model uncertainty of the permafrost carbon-climate feedback.

First author: Helene Genet
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15A-1410 Permafrost Degradation Partially Explains Variability of Vegetation Spring Phenology over Northern Permafrost Regions

First author: Jian Wang and Desheng Liu
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15A-1411 Permafrost fate in Northwestern Siberia under projected climate change during 21st century

First author: **Wenbo Zhou**
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15A-1412 Quantifying soil thermal regimes and their controls across a discontinuous permafrost environment using a dense network of distributed temperature profiling systems

First author: Chen Wang
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F





B15A-1413 Reducing uncertainty of Arctic ecosystem models through identification of key parameters

First author: Hannah Mevenkamp
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15B-1423 Changing Soil Communities in the Arctic: Impact of Disturbance Induced Permafrost Thaw on Microbial Communities

First author: Margaret Lockwood
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15B-1424 Gas compositions and origins of greenhouse gas in permafrost ice wedges at Batagaika megaslump, Yana Uplands, Northeast Siberia.

First author: Hansu Park
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15C-1432 Hot spots of methane and carbon dioxide fluxes from eddy covariance measurements in the Yukon-Kuskokwim Delta, Alaska

First author: Sarah Ludwig
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15C-1433 Recent acceleration of shrub expansion in Siberian tundra detected at high resolution using convolutional neural networks

First author: Gerald V Frost Jr
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15C-1437 Vegetation shifts trigger strong local BVOC impacts on atmospheric aerosols in high latitudes

First author: Jing Tang
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15C-1439 Sensitivity of erosion-rate in permafrost landscapes to environmental conditions based on a sedimentary record from Burial Lake, AK

First author: Eitan Shelef
19:00 - 21:00, Monday, December 13th





Convention Center - Poster Hall, D-F

B15C-1440 Understanding the drivers, dynamics, and regional patterns of terrestrial ecosystem CO₂ fluxes across the Arctic-Boreal Zone

First author: Anna-Maria Virkkala
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15C-1441 Analyzing Terrestrial Carbon Flux Site Distribution Across the Arctic

First author: Tiffany Windholz
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15C-1444 Degradation, stabilization, and initial aggradation of permafrost following an arctic tundra fire

First author: **Benjamin M Jones**
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15C-1445 Detecting hotspots of ecosystem change with remote sensing across the Arctic

First author: Stefano Potter
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15C-1447 Increases in *Betula nana* Abundance, Triggered by Nutrient Addition, May Alter Plant Communities through both Abiotic and Biotic Pathways

First author: Megan Wilcots
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15C-1449 Preliminary assessment of the micro-topographic impacts of ice-wedge systems using remote sensing and field observations

First author: **Melissa Ward Jones**
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15C-1450 Quantifying hydrologic and cryologic conditions of dominant landscapes on the Coastal Plain of the Arctic National Wildlife Refuge

First author: **Neal J. Pastick**





19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15C-1452 Response of Arctic ecosystems to climate trends in the last two decades

First author: Nima Madani
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15C-1453 Site-level Evaluation of Boreal Forests' Carbon Dioxide and Energy Fluxes along a Permafrost Gradient in CLASSIC

First author: Bo Qu
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15E-1477 Improving characterization of early spring carbon dynamics in high-latitude ecosystems

First author: Yunpeng Luo
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15E-1484 Snowpack-mediated soil freezing and ecosystem productivity

First author: Alexander Gottlieb
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15K-1559 A Roadmap to Illuminating Genes-to-Ecosystems-to-Genes Feedbacks in Thawing Permafrost

First author: Ahmed Zayed
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15K-1560 Exploring Ecometabolomics and Metabolomic Diversity in Response to Permafrost Thaw in Northern Sweden

First author: Viviana Freire Zapata
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15K-1561 Metagenome-assembled genomes from active layer in Ny Ålesund, Svalbard (79°N) show population dynamics related to seasonal thawing and soil depth

First author: Katie Sipes





19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

B15K-1562 Ten Novel Pseudomonas spp. from Svalbard Active Layer are using amino acids for energy.

First author: Raegan Paul
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

C15B-0804 Understanding Alaska & Arctic winter snow projections based on stabilized warming scenarios

First author: Siiri Bigalke
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

C15F-0853 Brooks Range Perennial Snowfields: Extent Detection via Satellite and from the Field in Alaska

First author: Molly E Tedesche
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

C15F-0861 GPS Interferometric Reflectometry Measurements of Snow Depth Corrected with Freezing ground uplifts Over a Permafrost Area in Northern Alaska

First author: Yufeng Hu and Wang Jiatong
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

C15F-0864 NASA SnowEx deployment of CarSAR: a mobile L-Band interferometric synthetic aperture radar platform

First author: Elias J Deeb
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

GC15C-0707 Using a Simple Climate Model to Track Global Carbon Flows Under Negative-Emissions Scenarios

First author: Skylar Gering
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F





H15R-1253 Effects of freeze-thaw cycles on methanogenic toluene biodegradation in cold regions soils

First author: Mehdi Ramezanzadeh
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

H15W-1316 Potential Satellite Monitoring of Surface Organic Soil Properties in Arctic Tundra from SMAP

First author: **Yonghong Yi**
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

NH15F-0509 Projected Rain-on-Snow Events in a sub-Arctic River Basin under Climate Change

First author: Reza Rezvani
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

NS15A-0360 Using a Layer-based Model Parameterization to Globally Invert 2D Electrical Resistivity Data from Submarine Permafrost Environments

First author: Mauricio de Jesús Arboleda Zapata Sr
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

NS15A-0362 Permafrost Degradation Delineation using a Multi-Faceted Geophysical Surveying Approach

First author: **Anna M Wagner**
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

NS15A-0363 Autonomous in situ Subsidence Mapping for Intercomparison of InSAR Based Inference of Permafrost Stability

First author: Lincoln H H Pitcher
19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

NS15A-0364 Investigating Rock Glaciers in the Eastern Sierra Nevada with Ground-Penetrating Radar: Internal Structure, Composition, and Hydrologic Role in a Changing Climate

First author: Maria Springs





19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

NS15A-0365 Shallow Seismic Exploration in Proglacial and Supraglacial Debris-Covered Environments, Malaspina and Sourdough Glaciers, Alaska

First author: Tyler Kuehn

19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

NS15A-0367 Characterization and Confirmation of Ground Ice in the Malaspina Forelands, Alaska through Transient Electromagnetic Methods, Satellite Imagery, and Historical Records

First author: Natalie Wagner

19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

P15F-2153 In preparation for Emirates Mars Infrared Spectrometer (EMIRS) data: Using Thermal Emission Spectrometer (TES) Aerobraking observations to analyze diurnal temperatures and characterize thermophysical properties

First author: Maryam Mohammed Yousuf

19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

PP15B-0905 Holocene pore-ice water isotope variations from permafrost peat soils in southern Alaska

First author: **Lesleigh Anderson**

19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F

S15F-0314 Real-time Data Product Streams for Permafrost Monitoring with Distributed Acoustic Sensing

First author: Samantha Paulus

19:00 - 21:00, Monday, December 13th
Convention Center - Poster Hall, D-F





Tuesday, December 14th

Online Only Presentations

A25U-09 Modern Aridity in the Russian Altai Derived from the Tree-Ring Stable Isotopes in the Context of the Past 1500 Years

First author: Olga V. Churakova (Sidorova)

19:00 - 20:15, Tuesday, December 14th

Online Only

B25N-02 Drivers of Arctic vegetation shifts across levels of biological organization

First author: Gabriela Schaeppman-Strub

19:00 - 20:15, Tuesday, December 14th

Online Only

B25N-03 Implications of Alder Shrub Expansion on Soil Properties in Arctic Alpine Tundra

First author: Allison M Welch

19:00 - 20:15, Tuesday, December 14th

Online Only

B25N-04 Plant water use and evaporative partitioning across seasons and species in a subarctic, alpine catchment: Implications for treeline advance and shrub proliferation

First author: Erin M M Nicholls and Sean Carey

19:00 - 20:15, Tuesday, December 14th

Online Only

B25N-05 Vegetation greening and winter ground temperature decoupling across the Canadian Arctic

First author: Sarah G. Evans

19:00 - 20:15, Tuesday, December 14th

Online Only

B25N-07 Mechanisms of post-fire larch forest recovery in far northeastern Siberia

First author: Heather Dawn Alexander

19:00 - 20:15, Tuesday, December 14th

Online Only





B25N-11 Implications of beaver proliferation on arctic tundra ecosystems: a comparison of sediment microbiomes from beaver ponds and tundra lakes

First author: Kelly Shannon

19:00 - 20:15, Tuesday, December 14th

Online Only

B25N-12 Soil Carbon and Nitrogen, Plant Functional Groups, and Plant Tissue Nutrient Content Across Successional Stages of Ice-wedge Degradation and Re-stabilization in the Tundra of Prudhoe Bay, Alaska

First author: Kelcy Kent

19:00 - 20:15, Tuesday, December 14th

Online Only

B25O-09 Seasonality buffers carbon budget variability across heterogeneous landscapes in Alaskan Arctic tundra

First author: Joshua Hashemi

19:00 - 20:15, Tuesday, December 14th

Online Only

eLightning/Hybrid Presentations

SY21B-06 Water Security and the Hydric Potential of Andean Cryosphere.

First author: Sebastian Ruiz Pereira

11:15 - 11:18, Tuesday, December 14th

Convention Center - eLightning Theater VII

Oral Presentations

C22C-01 Soil Freezing Characteristic Curves: a Review of Seven Decades of Measurements

First author: **Elise Devoie**

12:45 - 12:50, Tuesday, December 14th

Convention Center - Room 215-216





B22D-01 Disturbance suppresses the aboveground carbon sink in North American boreal forests

First author: Jonathan Wang

12:50 - 12:55, Tuesday, December 14th

Convention Center - Room 252-254

H22C-02 Global Patterns in Shallow Groundwater Warming due to Climate Change

First author: Susanne Benz

12:50 - 12:55, Tuesday, December 14th

Convention Center - New Orleans Theater A

C22C-02 Numerical Simulation of Groundwater Flow in Partially Frozen Soils to Investigate Aufeis Formation

First author: Alexi Lainis

12:50 - 12:55, Tuesday, December 14th

Convention Center - Room 215-216

A22E-02 Exchange of Biogenic Volatile Organic Compounds in Soil – Source or Sink?

First author: Riikka Rinnan

12:55 - 13:00, Tuesday, December 14th

Convention Center - Room 280-282

B22D-02 Developing a ground observation network to monitor carbon fluxes across the Arctic-boreal zone

First author: **Brendan M Rogers**

12:55 - 13:00, Tuesday, December 14th

Convention Center - Room 252-254

C22C-03 Long-Term Trends from the Circumpolar Active Layer Monitoring (CALM) Program

First author: **Kelsey E Nyland**

12:55 - 13:00, Tuesday, December 14th

Convention Center - Room 215-216

B22D-03 Above Ground biomass stocks, pool ages and fluxes in the largest arctic delta, the Lena Delta in Siberia

First author: Birgit Heim

13:00 - 13:05, Tuesday, December 14th

Convention Center - Room 252-254





C22C-04 Analysis of permafrost – vegetation interactions based on long-term ground surface observations

First author: Nikolay I Shiklomanov
13:00 - 13:05, Tuesday, December 14th
Convention Center - Room 215-216

OS22A-04 Application of machine learning to characterize gas hydrate reservoirs in permafrost settings

First author: Leebyn Chong
13:02 - 13:07, Tuesday, December 14th
Convention Center - Room 225-227

C22C-05 RECONSTRUCTION OF ROCK GLACIERS DYNAMICS IN ALPINE ENVIRONMENT, FROM MODERN TO HOLOCENE TIMESCALES

First author: **Benjamin Lehmann**
13:05 - 13:10, Tuesday, December 14th
Convention Center - Room 215-216

C22C-06 Alpine Permafrost Modeling: The Influence of Complex Topography and Lateral Fluxes

First author: Jonas Beddrich
13:10 - 13:15, Tuesday, December 14th
Convention Center - Room 215-216

EP22A-06 Influence of waves and temperature on permafrost bluff retreat at Barter Island, NE Alaska

First author: Ann Gibbs
13:10 - 13:15, Tuesday, December 14th
Convention Center - Room 228-230

B22D-06 Exploring environmental conditions driving high spatial variability in CO₂ and CH₄ fluxes in a boreal wetland

First author: **Mary Farina**
13:15 - 13:20, Tuesday, December 14th
Convention Center - Room 252-254

C22C-08 Mapping Retrogressive Thaw Slumps Using ArcticDEM and Machine Learning

First author: Chunli Dai
13:20 - 13:25, Tuesday, December 14th
Convention Center - Room 215-216





B23C-01 A Synthesis of Wildfire Impacts on Permafrost Thaw Depth Across Arctic and Boreal Ecosystems

First author: Michael M Loranty

15:50 - 15:55, Tuesday, December 14th

Convention Center - Room 252-254

GC23C-01 A Perspective on Continental Heat Storage Estimates and Methods

First author: Francisco Jose Cuesta-Valero

15:50 - 15:55, Tuesday, December 14th

Convention Center - Room 208-210

B23C-02 Arctic Tundra Fires Promote Greater Methane Hotspot Occurrence in the Yukon-Kuskokwim Delta, Alaska, USA

First author: Elizabeth Yoseph

15:55 - 16:00, Tuesday, December 14th

Convention Center - Room 252-254

EP23C-04 Defining the Equatorial Extent of Subsurface Ice on Mars through Global Geomorphic Mapping

First author: Gareth A Morgan

16:00 - 16:05, Tuesday, December 14th

Convention Center - Room 220-222

B23C-04 Fire Regimes across Eastern Siberian Taiga and Tundra from 2001-2020

First author: **Anna Talucci**

16:05 - 16:10, Tuesday, December 14th

Convention Center - Room 252-254

B24D-01 A shifting foundation – changes in Canada's northern forests in response to permafrost thaw

First author: Jennifer Lynn Baltzer

17:35 - 17:40, Tuesday, December 14th

Convention Center - Room 252-254

U24A-01 Automated Recognition of Human-Built Infrastructure in the Arctic Permafrost Landscapes using Commercial Satellite Imagery

First author: **Elias Manos**

17:35 - 17:50, Tuesday, December 14th

Convention Center - D-2





B24D-03 Integrating Field Observations and Multi-scale Remote Sensing to Understand Tall Shrub Distribution and Environmental Limits in Arctic Tundra

First author: Daryl Yang

17:45 - 17:50, Tuesday, December 14th

Convention Center - Room 252-254

B24D-04 Plasticity of Important Physiological Traits in Common Boreal Plants Along a Permafrost Thaw Gradient in Interior Alaska.

First author: **William Cox**

17:50 - 17:55, Tuesday, December 14th

Convention Center - Room 252-254

B24E-04 Wildfire accelerates carbon losses of high-latitude ecosystems

First author: Zelalem A Mekonnen

17:50 - 17:55, Tuesday, December 14th

Convention Center - Room 260-262

B24E-05 Future Increases in Lightning-ignited Boreal Fires Driven by Joint Increases in Dry Fuels and Lightning

First author: Thomas Duchnik Hessilt

17:55 - 18:00, Tuesday, December 14th

Convention Center - Room 260-262

EP24B-06 Testing the Hypothesis that Short-Lived, Debris-Flow-Like Processes Occurred on Vesta and Ceres, Using Laboratory Experiments and Geomorphological Analyses

First author: Jennifer E. C. Scully

17:55 - 18:00, Tuesday, December 14th

Convention Center - Room 220-222

H24A-01 Cold Regions Process Hydrology: Principles, Processes, Management and Prospects

First author: John W Pomeroy

18:00 - 18:45, Tuesday, December 14th

Convention Center - New Orleans Theater A

EP24B-08 Small Crater Relaxation and Ice Abundance at Northern Mid-Latitudes on Mars

First author: Alister Cunje

18:05 - 18:10, Tuesday, December 14th

Convention Center - Room 220-222





B24B-08 Increased soil N₂O emissions from the Arctic-Boreal region: A non-negligible non-carbon climate feedback

First author: Naiqing Pan

18:10 - 18:15, Tuesday, December 14th

Convention Center - Room 231-232

B24D-08 Time-series maps of shrub cover, stratified by genus and height class, from 1984-2020 reveal patterns of shrubification at multiple ecological resolutions in Arctic and Oroarctic Alaska and Northwest Canada

First author: Matthew J Macander

18:10 - 18:15, Tuesday, December 14th

Convention Center - Room 252-254

EP24A-08 A new mechanism for nearshore geomorphic change and sediment transport by shore ice

First author: Lucas Zoet

18:10 - 18:15, Tuesday, December 14th

Convention Center - Room 228-230

PP24A-07 Paleolacustrine Archives of Thermoerosion from Arctic Alaska

First author: **Melissa L Chipman**

18:15 - 18:20, Tuesday, December 14th

Convention Center - Room 225-227

Poster Presentations

B25D-1485 Nutrient Uptake Dynamics in Antarctic Polar Desert Streams

First author: Christa Torrens

19:00 - 21:00, Tuesday, December 14th

Convention Center - Poster Hall, D-F

B25E-1499 Biophysical Fractional Cover (FCover) composition retrieval in Svalbard Islands with the new generation of satellite sensors

First author: Emiliana Valentini

19:00 - 21:00, Tuesday, December 14th

Convention Center - Poster Hall, D-F





B25M-1644 Assimilation of the Global Fire Emissions Database (GFED) burned area dataset into Community Land Model version 5: Its impacts on the carbon and water fluxes in high latitudes

First author: Hocheol Seo and Yeonjoo Kim

19:00 - 21:00, Tuesday, December 14th

Convention Center - Poster Hall, D-F

B25M-1649 Fire Severity and Carbon Combustion in Larch Forest Ecosystems of Northeast Siberia

First author: Clément Delcourt

19:00 - 21:00, Tuesday, December 14th

Convention Center - Poster Hall, D-F

C25B-0835 Alaska Coastal Center: Matchmakers for Coastal Research and Communities

First author: Matthew S Balazs

19:00 - 21:00, Tuesday, December 14th

Convention Center - Poster Hall, D-F

C25F-0876 Numerical modelling of pan-arctic erosion using globally-available forcing data

First author: Rebecca Rolph

19:00 - 21:00, Tuesday, December 14th

Convention Center - Poster Hall, D-F

C25F-0878 Surface Temperatures of Coastal Rock Walls in the High Arctic (Kongsfjorden, Svalbard)

First author: Juditha Schmidt

19:00 - 21:00, Tuesday, December 14th

Convention Center - Poster Hall, D-F

C25F-0881 Spatial Variability of Permafrost Soil Organic Carbon in the Coastal Bluffs of Elson Lagoon, Alaska

First author: Sasha Peterson

19:00 - 21:00, Tuesday, December 14th

Convention Center - Poster Hall, D-F





C25F-0883 Permafrost thaw and coastal erosion between 1950 and 2100 at three coastal communities in Arctic Alaska, past observations and future projections

First author: **Louise Melanie Farquharson**

19:00 - 21:00, Tuesday, December 14th

Convention Center – Poster Hall, D-F

C25F-0884 News from the Pan-Arctic Initiative on the Spatial and Temporal Dynamics of Arctic Coasts

First author: Anna M. Irrgang

19:00 - 21:00, Tuesday, December 14th

Convention Center - Poster Hall, D-F

EP25D-1343 Evolution of Arctic continental shelves: modelling morphodynamic feedbacks to climate-driven increases in sea states

First author: John Malito

19:00 - 21:00, Tuesday, December 14th

Convention Center - Poster Hall, D-F

EP25H-1410 Contemporary Formation of Layered Sedimentary Rocks on Mars

First author: Robert L Huguenin

19:00 - 21:00, Tuesday, December 14th

Convention Center - Poster Hall, D-F

GC25H-0739 Legacies of fire in fluvial yields of carbon and nitrogen from boreal catchments

First author: Tamara Harms

19:00 - 21:00, Tuesday, December 14th

Convention Center - Poster Hall, D-F

H25H-1128 Terrestrial Water Storage Regime and Its Response to Climate Change in the Endorheic Tibetan Plateau

First author: Liuming Wang

19:00 - 21:00, Tuesday, December 14th

Convention Center - Poster Hall, D-F

H25S-1237 Exploring the Impacts of Warming Induced Cryosphere Changes on Watershed Dynamics in the Heihe River Basin

First author: Amanda Triplett and Laura E Condon

19:00 - 21:00, Tuesday, December 14th





Convention Center - Poster Hall, D-F

H25W-1283 Hydrochemistry and Controlling Factors in the Upper Indus River Basin (UIRB), Western Himalaya

First author: Mohd Aadil Bhat

19:00 - 21:00, Tuesday, December 14th

Convention Center - Poster Hall, D-F

P25E-2194 Heat Flow Probe for Europa Deployable from a Small Lander.

First author: Kara Naegeli

19:00 - 21:00, Tuesday, December 14th

Convention Center - Poster Hall, D-F

PP25D-0956 Radiocarbon Constraints on the Sources and Cycling of Organic Carbon in Mackenzie Delta Lakes

First author: Julie Lattaud

19:00 - 21:00, Tuesday, December 14th

Convention Center - Poster Hall, D-F

PP25D-0959 Widespread trends in brGDGT distributions span over a dozen sample types

First author: Jonathan Raberg

19:00 - 21:00, Tuesday, December 14th

Convention Center - Poster Hall, D-F

PP25E-0980 Understanding formation of ice wedges and origin of trapped greenhouse gas at Zyryanka, Northeastern Siberia

First author: Nayeon Ko

19:00 - 21:00, Tuesday, December 14th

Convention Center - Poster Hall, D-F

PP25F-0991 Rapid Decline in Global Marine Oxygen During Carbon Excursion of the Paleocene-Eocene Thermal Maximum (PETM)

First author: Jane Wadhams

19:00 - 21:00, Tuesday, December 14th

Convention Center - Poster Hall, D-F



Wednesday, December 15th

Online Only Presentations

EP35A-07 Organic carbon burial by river meandering offsets bank-erosion carbon fluxes in discontinuous permafrost

First author: **Madison Douglas**

19:30 - 19:38, Wednesday, December 15th

Online Only

eLightning/Hybrid Presentations

B34D-01 Influence of Increased Carbon and Nitrogen Availability on Nitrogen Processing in Headwater Arctic Streams

First author: Allison Herreid

17:35 - 17:38, Wednesday, December 15th

Convention Center - eLightning Theater IV

B34D-02 Increasing Freshwater and Dissolved Organic Carbon Flows to Northwest Alaska's Elson Lagoon

First author: Michael A Rawlins

17:38 - 17:41, Wednesday, December 15th

Convention Center - eLightning Theater IV

B34D-04 Application of Machine Learning Approaches to Identify Factors Important for Tree Growth in Boreal Zones

First author: Mark Carroll

17:44 - 17:47, Wednesday, December 15th

Convention Center - eLightning Theater IV

B34D-06 Combining new advances in modeling dynamic vegetation and nutrient competition to improve boreal forest predictions to changing climate

First author: Jennifer A. Holm

17:50 - 17:53, Wednesday, December 15th

Convention Center - eLightning Theater IV





B34D-09 Enhanced Plant P and Unchanged Soil P Stocks After a Quarter-Century of Experimental Warming in Arctic Tundra

First author: Jennie McLaren

17:59 - 18:02, Wednesday, December 15th

Convention Center - eLightning Theater IV

B34D-10 Lines of Evidence for Complex Responses of Freeze-Thaw Characteristics to Compound Changes in Temperature and Snowpack

First author: Ali Nazemi and Shadi Hatami

18:02 - 18:05, Wednesday, December 15th

Convention Center - eLightning Theater IV

Oral Presentations

EP31B-01 Arctic Deltas are Ice-dominated: development of a quantitative descriptor of ice as a process control

First author: **Irina Overeem**

11:02 - 11:07, Wednesday, December 15th

Convention Center - Room 228-230

B31E-01 The Vulnerability of Permafrost Carbon to Climate Change: Key Findings from a Decade of Synthesis

First author: **Edward Schuur**

11:05 - 11:10, Wednesday, December 15th

Convention Center - Room 252-254

B31E-02 Increasing winter snow accelerates loss of organic carbon from permafrost soils

First author: Shawn Pedron

11:10 - 11:15, Wednesday, December 15th

Convention Center - Room 252-254

EP31B-02 The relationship between lake spatial distribution and permafrost processes on arctic deltas

First author: **Lawrence M Vulis**

11:11 - 11:16, Wednesday, December 15th

Convention Center - Room 228-230





B31E-03 Investigating Regional Patterns of Soil Respiration in Alaska and Canada

First author: **Jennifer Watts**

11:15 - 11:20, Wednesday, December 15th

Convention Center - Room 252-254

B31D-04 Molecular-scale Characterization of the Nanogeochemical Environment in Soils and Surface Waters to Measure the Impacts of Climate Change on Trace Elements in Boreal Ecosystems

First author: Chad Cuss

11:20 - 11:26, Wednesday, December 15th

Convention Center - Room 255-257

B31A-05 Assessing Canadian boreal forest-tundra growth drivers via community analysis

First author: Elise Heffernan

11:25 - 11:30, Wednesday, December 15th

Convention Center - Room 238-239

B31E-06 Annual Dynamics of Retrogressive Thaw Slumps across NE Siberia with LandTrendr

First author: Alexandra Runge

11:30 - 11:35, Wednesday, December 15th

Convention Center - Room 252-254

B31E-07 The uncertainty in InSAR-based active layer soil water storage estimates over the Arctic Foothills

First author: Yue WU

11:35 - 11:40, Wednesday, December 15th

Convention Center - Room 252-254

B31E-08 Understanding Active Layer Thickness Variability Under Changing Climatic Conditions Across the North American Taiga-Tundra Ecotone

First author: **Bradley Gay**

11:40 - 11:45, Wednesday, December 15th

Convention Center - Room 252-254

B32E-02 An analysis of methane emissions from four peatland sites in the Hudson Bay Lowlands

First author: Elyn Humphreys

12:55 - 13:00, Wednesday, December 15th





Convention Center - Room 228-230

S32B-02 Tracking soil thaw and permafrost degradation across multiple timescales using ambient seismic noise

First author: **Stephanie R. James**

12:55 - 13:00, Wednesday, December 15th

Convention Center - Room 338-339

GC32C-03 High-Resolution Modelling of Climatic Hazards Relevant for the Northern Transportation Sector

First author: Bernardo Stephan Teufel

13:00 - 13:05, Wednesday, December 15th

Convention Center - Room 220-222

B32E-04 Present and future global lake methane emissions are lower than expected

First author: Mingyang Guo

13:05 - 13:10, Wednesday, December 15th

Convention Center - Room 228-230

B32B-05 Forest classification using airborne SAR and Lidar data in interior Alaska

First author: Yuhuan Zhao

13:10 - 13:15, Wednesday, December 15th

Convention Center - Room 238-239

OS33A-01 Advancing coastal hazard modeling with satellite data integration and assimilation

First author: Li H Erikson

15:45 - 15:57, Wednesday, December 15th

Convention Center - Room 223

EP33A-03 Fusing geospatial datasets to identify patterns and controls on Arctic coastal erosion

First author: **Anastasia Piliouras**

15:55 - 16:00, Wednesday, December 15th

Convention Center - Room 217-219

H33B-07 Improving Predictive Understanding of the Impacts of Frozen Soil on Streamflow through Modeling and Data Analysis

First author: Jetal Agnihotri

16:15 - 16:20, Wednesday, December 15th





Convention Center - Room 271-273

H34B-01 A novel application and multi-objective optimization of CTSM: Arctic hydrology in Alaska and Yukon River Basin

First author: Yifan Cheng
17:30 - 17:35, Wednesday, December 15th
Convention Center - Room 271-273

H34G-04 Freeze-Thaw Retrieval with the Cyclone Global Navigation Satellite System (CYGNSS)

First author: Hugo Carreno-Luengo and Christopher S Ruf
17:45 - 17:50, Wednesday, December 15th
Convention Center - New Orleans Theater A

G34A-06 High-salinity liquid water as a source of uncertainty in bedfast lake ice mapping on the Arctic Coastal Plain in northern Alaska

First author: **Helena Bergstedt**
17:55 - 18:00, Wednesday, December 15th
Convention Center - Room 348-349

B34A-08 Opposing trajectories of land-ocean primary productivity across the Arctic coastal margins

First author: Cynthia Garcia-Eidell
17:57 - 18:00, Wednesday, December 15th
Convention Center - Room 231-232

C34B-06 Observed and Modeled Streamflow Response to Hydroclimatic Changes in Alaska

First author: Dylan Blaskey
17:57 - 18:02, Wednesday, December 15th
Convention Center - Room 215-216

EP34A-07 Broad-scale controls on large river anabranching from remote sensing

First author: Bo Wang
18:00 - 18:05, Wednesday, December 15th
Convention Center - Room 217-219

EP34A-09 Satellite analysis reveals global spatial and temporal variation in river suspended sediment transport

First author: Evan Dethier
18:10 - 18:15, Wednesday, December 15th





Convention Center - Room 217-219

ED34A-12 UnstableGround: An Interactive Website to Visualize and Communicate How the Arctic is Changing.

First author: **Erin MacDonald**

18:35 - 18:40, Wednesday, December 15th

Convention Center - Room 298-299

Poster Presentations

B35G-1499 Integrating Microbial, Isotopic and Landscape-Scale Observations to Quantify Methane Emissions and Isotopic Fluxes from Global High-Latitude Ecosystems

First author: McKenzie Ann Ann Kuhn

19:00 - 21:00, Wednesday, December 15th

Convention Center - Poster Hall, D-F

C35D-0911 Detection And Attribution of Active Layer Changes in The Northern Hemisphere

First author: Hong Guo and Song Feng

19:00 - 21:00, Wednesday, December 15th

Convention Center - Poster Hall, D-F

C35D-0913 Surface Energy Balance of Arctic Rivers from High Resolution Climate Scenarios

First author: Bradley Lockhart and Amanda H Lynch

19:00 - 21:00, Wednesday, December 15th

Convention Center - Poster Hall, D-F

C35F-0926 Simulating Arctic hydrology with WaSiM

First author: **Ronald P Daanen**

19:00 - 21:00, Wednesday, December 15th

Convention Center - Poster Hall, D-F

C35F-0927 Temperature contrast during water infiltration into frozen soil - Challenges for numerical models

First author: Thomas Heinze

19:00 - 21:00, Wednesday, December 15th

Convention Center - Poster Hall, D-F





C35F-0928 Coupled heat-solute transport processes in permafrost-affected groundwater systems

First author: Aaron Mohammed
19:00 - 21:00, Wednesday, December 15th
Convention Center - Poster Hall, D-F

C35F-0929 Detecting changes in permafrost active layer thickness from baseflow recession

First author: Matthew G Cooper
19:00 - 21:00, Wednesday, December 15th
Convention Center - Poster Hall, D-F

C35F-0930 Potential Influences of Rising Non-linearity in Catchment Storage-Discharge Relationships as the Extent of Frozen Ground Decreases

First author: Alexa Hinzman
19:00 - 21:00, Wednesday, December 15th
Convention Center - Poster Hall, D-F

C35F-0931 High-Resolution Thaw Dynamics of Two Latitudinally Distant Alaska Thermokarst Sites: A Field Study

First author: **Joel Eklof**
19:00 - 21:00, Wednesday, December 15th
Convention Center - Poster Hall, D-F

C35F-0932 Exploring coupled surface hydrology and freeze-thaw dynamics around Toolik Lake, Alaska, using ICESat-2 and InSAR data

First author: **Marnie Bryant**
19:00 - 21:00, Wednesday, December 15th
Convention Center - Poster Hall, D-F

C35F-0933 A user-friendly, multi-parameter protocol for monitoring permafrost thaw

First author: **Simon Zwieback**
19:00 - 21:00, Wednesday, December 15th
Convention Center - Poster Hall, D-F

C35F-0934 Assessing the Impacts of Rapid Climate Change on Arctic Soil Conditions by Combining Satellite and In Situ Measurements

First author: Jenna Cai
19:00 - 21:00, Wednesday, December 15th
Convention Center - Poster Hall, D-F





C35F-0935 Long- and Short-term temporal analysis of satellite-derived Permafrost terrains of Himachal Pradesh, India

First author: Ipshita Priyadarsini Pradhan and Dericks P Shukla

19:00 - 21:00, Wednesday, December 15th

Convention Center - Poster Hall, D-F

C35F-0936 A Comparison of First-Order Permafrost Estimates in High Mountain Asia Using Remotely Sensed Land Surface Temperature, Air Temperature, and Snow Reanalysis Products

First author: Kyung Kim

19:00 - 21:00, Wednesday, December 15th

Convention Center - Poster Hall, D-F

C35F-0937 Inventorying rock glaciers in the arid West Kunlun of China using SAR interferometry and deep learning

First author: **Yan Hu**

19:00 - 21:00, Wednesday, December 15th

Convention Center - Poster Hall, D-F

C35F-0938 Rock Glacier Inventory, Permafrost Probability Distribution Modeling and Associated Hazards in the Hunza River Basin, Western Karakoram, Pakistan

First author: Javed Hassan

19:00 - 21:00, Wednesday, December 15th

Convention Center - Poster Hall, D-F

C35F-0939 Assessing Permafrost Behavior in High Mountain Asia with Physics-Based Models

First author: Ryan Haagenson

19:00 - 21:00, Wednesday, December 15th

Convention Center - Poster Hall, D-F

C35F-0940 Permafrost hazard mapping in the discontinuous permafrost zone of Alaska

First author: **Dmitry Nicolsky**

19:00 - 21:00, Wednesday, December 15th

Convention Center - Poster Hall, D-F





C35F-0941 Snow-cover Effects on the Active Layer Above Permafrost: Results of Long-term Ground Surface Temperature Observations in Northern Alaska

First author: **Raven Jezell Mitchell**

19:00 - 21:00, Wednesday, December 15th
Convention Center - Poster Hall, D-F

C35F-0942 Multiscale modeling of thermo-hydrologic processes in frozen soils

First author: Jinhua Hu

19:00 - 21:00, Wednesday, December 15th
Convention Center - Poster Hall, D-F

C35F-0943 Analysis of the Impact of Physics Representation on Permafrost Modeling

First author: Bo Gao

19:00 - 21:00, Wednesday, December 15th
Convention Center - Poster Hall, D-F

C35G-0963 Extrapolating snowpack properties from small temperature sensors in two watersheds on the Seward Peninsula, Alaska, USA

First author: **Emma Lathrop**

19:00 - 21:00, Wednesday, December 15th
Convention Center - Poster Hall, D-F

GC35E-0735 A Geoengineered Arctic: Optimizing High-Latitude Stratospheric Aerosol Geoengineering via Seasonal Injection and Analyzing the Effects on Sea Ice, Permafrost, and Ice Sheet Melt

First author: Walker Lee

19:00 - 21:00, Wednesday, December 15th
Convention Center - Poster Hall, D-F

GC35E-0748 Saving Glacial Ice Through Localized Surface Albedo Modification

First author: Leslie A Field

19:00 - 21:00, Wednesday, December 15th
Convention Center - Poster Hall, D-F





H35C-1053 Development and Assessment of a Quick Subsurface Thermal Characterization Method to Map Soil Thermal and Physical Properties

First author: Jack Lamb

19:00 - 21:00, Wednesday, December 15th

Convention Center - Poster Hall, D-F

H35M-1179 Multinomial simulation of land cover evolution in discontinuous permafrost zones of Northwest Territories.

First author: Shaghayegh Akbarpour

19:00 - 21:00, Wednesday, December 15th

Convention Center - Poster Hall, D-F

H35W-1295 Improving land surface seasonal dynamics in permafrost areas by using soil moisture assimilation

First author: Akhilesh Sivaraman Nair

19:00 - 21:00, Wednesday, December 15th

Convention Center - Poster Hall, D-F

NH35A-0465 Space Based Assessment and Review of Chamoli, Uttarakhand (North India) Rockslide Event of February 07, 2021

First author: Chandra Mohan Bhatt

19:00 - 21:00, Wednesday, December 15th

Convention Center - Poster Hall, D-F

NH35E-0502 A Dendro-Geomorphological Analysis of the Slate Creek Landslide, Alaska

First author: Mackenzie Young

19:00 - 21:00, Wednesday, December 15th

Convention Center - Poster Hall, D-F



Thursday, December 16th

eLightning/Hybrid Presentations

SY45A-03 The cryosphere and climate change communication: Messengers, messages, and outcomes of framing climate change as thawing ice

First author: Kristin Timm

19:06 - 19:09, Thursday, December 16th

Convention Center - eLightning Theater VI

Oral Presentations

H41B-05 What is a watershed? Shifting perspectives from long term research in the McMurdo Dry Valleys, Antarctica

First author: Anna Bergstrom

11:20 - 11:25, Thursday, December 16th

Convention Center - Room 271-273

H42B-02 Reducing uncertainty in simulations of thaw in ice-rich permafrost

First author: Charles Abolt

12:55 - 13:00, Thursday, December 16th

Convention Center - New Orleans Theater B

ED42A-05 Sands of Time: The Poetry of Coastal Erosion

First author: Hywel Griffiths

13:10 - 13:15, Thursday, December 16th

Convention Center - Room 291-292

B43D-01 The assessment and role of the permafrost carbon feedback in IPCC reports through the AR6

First author: Charles D Koven

15:50 - 15:55, Thursday, December 16th

Convention Center - Room 255-257

B43C-01 Progress and puzzles in the history of atmospheric methane

First author: Edward J Brook

15:50 - 17:10, Thursday, December 16th

Convention Center - La Nouvelle Orleans C





B43D-02 Did permafrost carbon contribute to global warming at the end of the last ice age?

First author: Benjamin Gaglioti
15:55 - 16:00, Thursday, December 16th
Convention Center - Room 255-257

B43D-03 Multistability of permafrost carbon storages due to positive water-energy-carbon feedbacks simulated by Earth System model

First author: Victor Brovkin
16:00 - 16:05, Thursday, December 16th
Convention Center - Room 255-257

B43D-04 Quantifying Arctic methane emissions from Alaska's North Slope and Northeast Siberia from 2010-2020 using high-frequency atmospheric measurements

First author: Rebecca Ward
16:05 - 16:10, Thursday, December 16th
Convention Center - Room 255-257

B43D-05 Assessing Arctic Atmospheric Methane Monitoring by Comparing Satellite Missions to In Situ Observations.

First author: Martijn Pallandt
16:10 - 16:15, Thursday, December 16th
Convention Center - Room 255-257

B43D-06 Incorporating Permafrost into Climate Mitigation and Adaptation Policy and Action

First author: **Susan Natali**
16:25 - 16:30, Thursday, December 16th
Convention Center - Room 255-257

B43D-07 Soil Properties, Soil Organic Matter Composition and Vulnerability of Arctic Hillslope Catenas

First author: Roser Matamala
16:30 - 16:35, Thursday, December 16th
Convention Center - Room 255-257

PP43B-08 Early Holocene permafrost retreat in West Siberia amplified by reorganization of westerly circulation

First author: Jonathan Baker
16:30 - 16:35, Thursday, December 16th





Convention Center - Room 217-219

B43D-08 A synthesis of in-situ emissions and dissolved sub-surface $\delta^{13}\text{C}$ - CH_4 , $\delta^{13}\text{C}$ - CO_2 , and δD - CH_4 from northern wetlands, lakes, and seasonally-inundated ecosystems

First author: Kathryn A Bennett

16:35 - 16:40, Thursday, December 16th

Convention Center - Room 255-257

NS43A-06 Near-surface cryosphere geophysics as a nexus for interdisciplinary research between the arctic hydrosphere, biosphere, and permafrost systems

First author: Andy Parsekian

16:35 - 16:45, Thursday, December 16th

Convention Center - Room 338-339

C43A-07 New Hydrometeorological Instrument Cluster at Inglefield Land, NW Greenland

First author: Sarah Esenther

16:39 - 16:48, Thursday, December 16th

Convention Center - Room 215-216

B43D-09 Altered Microbial Structure and Function after Thermokarst Formation

First author: Futing Liu

16:40 - 16:45, Thursday, December 16th

Convention Center - Room 255-257

B43D-10 Enhanced methane production following simulated nitrogen resource pulse during thaw in lowland permafrost systems

First author: Catherine M Dieleman

16:45 - 16:50, Thursday, December 16th

Convention Center - Room 255-257

C44A-01 Monitoring the human footprint across the Arctic coastal region in the context of climate change impact assessment

First author: **Annett Bartsch**

17:32 - 17:37, Thursday, December 16th

Convention Center - Room 225-227





C44A-02 Towards Understanding the Relationship Between Coastal and Riverine Processes and Civil Infrastructure in the Arctic

First author: **Albin Rosado**

17:37 - 17:42, Thursday, December 16th

Convention Center - Room 225-227

C44A-03 Feedbacks between sea-level rise, groundwater flow, and permafrost extent in the coastal zone

First author: Julia Guimond

17:42 - 17:47, Thursday, December 16th

Convention Center - Room 225-227

C44A-04 Groundwater Flow and Transport in a Coastal Aquifer in the Arctic

First author: Cansu Demir

17:47 - 17:52, Thursday, December 16th

Convention Center - Room 225-227

C44A-06 Coastal wave exposure in northern Alaska

First author: Lucia Hosekova

17:57 - 18:02, Thursday, December 16th

Convention Center - Room 225-227

IN44A-06 Semantic segmentation of Isolated wetland in discontinuous permafrost regions of the Northwest Territories using deep convolutional neural networks

First author: Shaghayegh Akbarpour

17:58 - 18:03, Thursday, December 16th

Convention Center - Room 288-290

C44A-07 Evaluation of Offshore Wave Climates along the Alaskan North Slope using K-means Clustering

First author: Diana L Bull

18:02 - 18:07, Thursday, December 16th

Convention Center - Room 225-227

B44A-07 Delineating Particulate Organic Matter Sources in the Major Arctic Rivers: The Importance of Contemporary Autochthony

First author: Megan Irene Behnke

18:05 - 18:10, Thursday, December 16th

Convention Center - Room 228-230





C44A-08 Biodegradability of Organic Matter Eroding Along the Alaska Beaufort Sea Coast

First author: Emily M Bristol

18:07 - 18:12, Thursday, December 16th

Convention Center - Room 225-227

B44A-08 Multi-Decadal Declines in Particulate Mercury and Sediment Export from Russian Rivers in the Pan-Arctic Basin

First author: Scott Zolkos

18:10 - 18:15, Thursday, December 16th

Convention Center - Room 228-230

Poster Presentations

A45F-1903 Simulation of Cold Processes in the CMIP6 Land-Historical Simulations

First author: Lawrence Mudryk

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

A45H-1935 Evaluating GEOS-S2S-2 seasonal and subseasonal forecasts of soil moisture in the High Mountain Asia region

First author: Elias Charbel Massoud

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

B45C-1645 What explains the year-to-year variation in the start and end of the photosynthetic growing season of boreal black spruce forests?

First author: Mariam El-Amine

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

B45G-1703 Integrating Redox and Soil Geochemical Interactions with Carbon Cycling in a Land Surface Model

First author: Benjamin N Sulman

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F





B45G-1705 Accelerated spin-up of Community Land Model version 5 (CLM5) with coupled terrestrial carbon and nitrogen cycles

First author: Cuijuan Liao

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

B45J-1745 Arctic River Integrated Observations through Synoptic Sampling (RIOS): Aquatic Networks Reveal Ecosystem Export of Carbon and Nutrients in Permafrost Watersheds

First author: Ariel Shogren

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

B45J-1747 Thawing-induced changes in stream-catchment interactions and stream water quality in permafrost catchments in boreal and arctic Alaska

First author: **Joshua C Koch**

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

B45J-1748 Testing the linear relationship between recession dynamics and active layer thickening over 336 catchments located in permafrost regions

First author: Flore Sergeant

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

B45J-1749 Effects of watershed position, landscape connectivity, and ice wedge degradation on dissolved organic matter dynamics at Prudhoe Bay, AK

First author: **Claire Griffin**

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

B45J-1750 Antecedent precipitation influence on storage and transport of nitrate and DOM in boreal catchments

First author: Jake Cavaiani

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F





B45J-1751 Greenhouse Gas Emissions From Permafrost Peat Altered by Gradual Drying but Depends on Landscape Position and Peat

Biogeochemistry

First author: Aelis Spiller

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

B45J-1752 Soil moisture inputs from enhanced snowfall impact nitrogen availability and the greenhouse gas balance of High Arctic mesic tundra

First author: Jacqueline Hung

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

B45J-1753 A new local testate amoebae transfer function from northwest Siberian permafrost peatlands

First author: Agnieszka Halaś

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

B45J-1754 Regional ground water and surface water interactions due to changing active layer dynamics in the Yukon River Basin.

First author: Ryan Toohey

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

B45J-1755 Linking water and oxygen availability to biogeochemical redox cycling and carbon release in Arctic soils

First author: **Erin C C Berns**

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

B45J-1756 Carbon cycling in sub-Antarctic and Antarctic lakes

First author: Liza McDonough

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

B45K-1757 Drying reduces carbon sink strength and carbon stock in northern circumarctic peatlands

First author: Min Jung Kwon

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F





B45K-1758 Enhancing STEM education and soil monitoring with a durable DIY low-cost soil temperature data logger

First author: **Salvatore Rex Rex Curasi**

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

B45K-1759 Extracellular Enzyme Activities and Mineralogy of Thawing Permafrost Soils Near Bayelva, Svalbard.

First author: Murray Stokes

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

B45K-1760 Holocene Carbon Dynamics from a Permafrost Peatland in the Sporadic Permafrost Zone, Kenai Peninsula, Alaska

First author: **Miriam Jones**

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

B45K-1761 In fire and ice: how do non-linear processes affect the permafrost carbon feedback?

First author: Rachael Treharne

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

B45K-1762 Phenological characteristics in year-round stem respiration of a boreal black spruce (*Picea mariana*) stand on permafrost, interior Alaska

First author: Yongwon Kim

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

B45K-1763 Quantifying the Known Unknown: Including Marine Sources of Greenhouse Gases in Climate Modeling

First author: Jennifer Mary Frederick

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

B45K-1764 Temperature Sensitivity of Permafrost Carbon Release Mediated by Mineral and Microbial Properties

First author: **Yuanhe Yang**

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F





B45L-1778 Pan-Arctic Riverine Dissolved Organic Matter: Synchronous Molecular Stability, Shifting Sources and Subsidies

First author: Robert G Spencer

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

B45N-1798 Permafrost mercury sources and implications for methylation among Alaskan ecoregions

First author: Scott Zolkos

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

C45D-1041 Detecting Buried Ice Masses; Transantarctic Mountains, Antarctica

First author: Jaakko Putkonen

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

H45D-1210 Impacts of Warming on Frozen Soil Permeability over the Ohio River Basin through Recession Flow Analysis

First author: Aaron Goldtooth

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

H45R-1386 A Spatiotemporal Surface Water Classification in the Mackenzie Delta and Tuktoyaktuk Peninsula

First author: Mayah Obadia

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

H45T-1421 High Altitude Soil Testing (HAST): Increasing Accessibility of Data from the Alpine Tundra and Other Remote Locations

First author: **Martha E Apple**

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

IN45C-0480 Enabling Integration of climate system data with Ontology

First author: Armita Davarpanah

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F





OS45B-1155 Evaluation of numerical model uncertainty through the Coastal Model Test Bed.

First author: Tyler Hesser

19:00 - 21:00, Thursday, December 16th

Convention Center - Poster Hall, D-F

Friday, December 17th

Online Only Presentations

C52A-01 The future of community- and policy- relevant thermokarst research: Lessons learned and a call to action

First author: **Merritt R Turetsky**

12:46 - 12:56, Friday, December 17th

Online Only

C52A-02 Impacts of permafrost thaw on the biogeochemistry of boreal peatland complexes; accounting for all ecosystem transitions

First author: David Olefeldt

12:56 - 13:06, Friday, December 17th

Online Only

C52A-03 Recent warming reverses forty-year decline in Catastrophic lake drainage and hastens Gradual lake drainage across northern Alaska

First author: **Mark J Lara**

13:06 - 13:11, Friday, December 17th

Online Only

C52A-04 Carbon Release Accelerated by Abrupt Thaw at Eight Mile Lake, AK

First author: **Heidi Rodenhizer**

13:11 - 13:16, Friday, December 17th

Online Only





C52A-05 New process-based model for Methane Emissions from Ponds (MeEP) reveals length of ice-free season has strong impact on increased emissions under warming

First author: Zoé Rehder

13:16 - 13:21, Friday, December 17th

Online Only

C52A-06 High-resolution frost heave map at the fire scars in Batagay, NE Siberia, derived by L-band InSAR and validation with field observation

First author: Kazuki Yanagiya

13:21 - 13:26, Friday, December 17th

Online Only

C52A-07 Evaluating the Effects of Tundra Fires on Soil Microtopography and Hydrologic Surface Networks in Polygonal Permafrost Landscapes

First author: **Tabea Rettelbach**

13:26 - 13:31, Friday, December 17th

Online Only

C52A-08 High performance image analysis workflow designs for operational-scale Arctic permafrost mapping applications

First author: Chandi Witharana

13:31 - 13:36, Friday, December 17th

Online Only

C55E-01 The Permafrost Discovery Gateway

First author: Anna K Liljedahl

19:00 - 20:15, Friday, December 17th

Online Only

C55E-02 Arctic Beaver Observation Network (A-BON): Tracking a new disturbance regime

First author: Ken D Tape

19:00 - 20:15, Friday, December 17th

Online Only

C55E-03 Fine-scale ground truth of ground displacement in the Anaktuvuk River Fire (ARF) for satellite and airborne L-band SAR

First author: **Go Iwahana**

19:00 - 20:15, Friday, December 17th

Online Only





C55E-04 InSAR-based analysis of Seasonal permafrost deformation in the Yukon Wildlife Refuge

First author: **Soumitra Sakhalkar**

19:00 - 20:15, Friday, December 17th

Online Only

C55E-05 Understanding the effect of image augmentation methods on automated recognition of permafrost features from high-resolution satellite imagery

First author: **Amit Hasan**

19:00 - 20:15, Friday, December 17th

Online Only

C55E-06 Interannual and seasonal surface displacement near the settlement in Churapcha, eastern Siberia, revealed by ALOS-2

First author: Takahiro Abe and Yoshihiro Iijima

19:00 - 20:15, Friday, December 17th

Online Only

C55E-07 Optimal Talik Geometry under Thermokarst Lake in Quasi Equilibrium State in Arctic Coastal Plain

First author: Noriaki Ohara

19:00 - 20:15, Friday, December 17th

Online Only

C55E-08 The Warming Arctic: the Roles of Thermokarst Lakes in Permafrost Terrestrial Ecosystems

First author: **Deniz Vural**

19:00 - 20:15, Friday, December 17th

Online Only

C55E-09 Modeling Arctic Lakes with the LAKE2.0 Model

First author: **Jason Clark**

19:00 - 20:15, Friday, December 17th

Online Only

C55E-10 The role of advective heat transfer in affecting permafrost thaw and methane emissions at a hillslope thermokarst bog

First author: **Jing Tao**

19:00 - 20:15, Friday, December 17th

Online Only





PP55E-02 Synchronicity of deep-sea methane flux and intermediate water temperature variability in Alaskan Beaufort Margin during the late Holocene

First author: Masao Uchida

19:00 - 20:15, Friday, December 17th

Online Only

eLightning/Hybrid Presentations

B54E-07 Investigating the Impacts of Climate Warming on Mineral and Organic Permafrost Soil Carbon

First author: Jillian Sanders

17:48 - 17:51, Friday, December 17th

Convention Center - eLightning Theater IV

B54E-08 Small waterbodies reduce the carbon sink strength of a polygonal tundra landscape in Eastern Siberia

First author: Lutz Beckebanze

17:51 - 17:54, Friday, December 17th

Convention Center - eLightning Theater IV

U55A-09 Recharge or Runoff? Climate Warming Implications for Frozen Ground Control of Hydrologic Partitioning

First author: Katrina Rabeler

19:24 - 19:27, Friday, December 17th

Convention Center - eLightning Theater V

Oral Presentations

B51C-01 Net methane and carbon dioxide exchange from European Arctic wetlands in Summer 2019: Airborne quantification and bottom-up intercomparison

First author: Patrick Barker

11:00 - 11:05, Friday, December 17th

Convention Center - Room 252-254





EP51B-01 Detecting the Imprint of Climate Change in High Mountain Hazards: Challenges and Opportunities

First author: Mylene Jacquemart

11:00 - 11:05, Friday, December 17th

Convention Center - Room 228-230

EP51B-02 Climate change and landscape instability in High Mountain Asia

First author: Dongfeng Li

11:05 - 11:10, Friday, December 17th

Convention Center - Room 228-230

H51G-02 Hydrogen Isotopes in Boreal Conifers as Indicator of Extreme Hydrological Changes

First author: Olga V. Churakova (Sidorova)

11:10 - 11:15, Friday, December 17th

Convention Center - Room 267-268

B51C-04 The role of northern peatlands in the global carbon cycle

First author: Chunjing Qiu

11:15 - 11:20, Friday, December 17th

Convention Center - Room 252-254

B51D-04 Shortened fire intervals stimulate carbon losses from heterotrophic respiration and reduce understorey plant productivity in boreal forests

First author: Jason A Shabaga

11:15 - 11:20, Friday, December 17th

Convention Center - Room 238-239

EP51B-04 Cold Regions Erosion in a Warming World: An Evaluation of the Temperature-Dependence of Erosion in the High European Alps

First author: Donovan Dennis and Dirk Scherler

11:15 - 11:20, Friday, December 17th

Convention Center - Room 228-230

B51B-05 Evaluating a deep-learning approach for mapping retrogressive thaw slumps across the Arctic

First author: Ingmar Nitze

11:25 - 11:30, Friday, December 17th

Convention Center - Room 231-232





EP51B-06 Permafrost Riverbank Erosion in Frozen Flume Experiments

First author: **Madison Douglas**

11:25 - 11:30, Friday, December 17th

Convention Center - Room 228-230

EP51B-07 Climate-driven changes to channel erosion rates in the Mackenzie River Basin since 1985

First author: Jordan Fields

11:30 - 11:35, Friday, December 17th

Convention Center - Room 228-230

H52A-01 Modeled snow intercomparison over Fairbanks, Alaska domain: spatial and interannual variability from Land Information System simulations

First author: Melissa Wrzesien

12:45 - 12:50, Friday, December 17th

Convention Center - Room 243-245

GC52C-03 Linking Climate Change and Human Systems: A Case Study of Arctic Pipelines

First author: Nina Blahut

13:00 - 13:05, Friday, December 17th

Convention Center - Room 208-210

ED52A-04 Building local capacity for community-based micrometeorological monitoring

First author: Oliver Sonnentag

13:05 - 13:10, Friday, December 17th

Convention Center - Room 291-292

GC52C-04 Connecting permafrost degradation and informal road network development in Subarctic taiga

First author: Dmitry Kobylkin

13:05 - 13:10, Friday, December 17th

Convention Center - Room 208-210

A52B-08 Tracking ice nucleating particles from permafrost to the atmosphere through thermokarst lake and oceanic transport

First author: Kevin Robert Barry

13:20 - 13:25, Friday, December 17th

Convention Center - Room 278-279





GC52C-07 Effect of the Deepening of Driven Active Layer on the Hydrology and Hydrochemistry within the Yukon River Basin

First author: Edda A Mutter

13:20 - 13:25, Friday, December 17th

Convention Center - Room 208-210

ED52A-08 The Permafrost Monthly Alert (PMA) Program: Improving International Access to Permafrost Literature in Engineering and Science

First author: **Michael R Lilly**

13:25 - 13:30, Friday, December 17th

Convention Center - Room 291-292

P53B-01 Thermal Environments and Volatile-trapping Potential of Lunar Pits and Caves

First author: Andrew Wilcoski

15:46 - 15:51, Friday, December 17th

Convention Center - Room 395-396

B53A-03 Remarkable Interannual Variability in the Carbon Sink Strength of an Alaskan Boreal Peatland Complex Based Upon a Decade of Eddy Covariance Measurements

First author: Eugenie Susanne Euskirchen

15:55 - 16:00, Friday, December 17th

Convention Center - Room 231-232

H53B-03 Remotely Investigating the Spatial and Temporal Distribution of Soil Moisture in the McMurdo Dry Valleys of Antarctica: Hydrological and Ecological Implications

First author: Mark R Salvatore

15:55 - 16:00, Friday, December 17th

Convention Center - New Orleans Theater B

B53D-03 Methane Emissions from Northern Wetlands During the Holocene : A Synthesis Approach to Account for Wetland Expansion and Fen-Bog-Permafrost Transitions

First author: Claire C Treat

16:03 - 16:11, Friday, December 17th

Convention Center - Room 252-254





S53A-05 Seismic Monitoring of Rock Glaciers : new Insights on Observations and Modelling Permafrost

First author: Antoine Guillemot
16:05 - 16:10, Friday, December 17th
Convention Center - Room 346-347

C53B-04 The seasonal contrast of aerosols that can seed ice formation in central Arctic clouds

First author: Jessie Creamean
16:07 - 16:14, Friday, December 17th
Convention Center - Room 217-219

S53A-07 Investigation of Slope Failure using Seismic Ambient Noise Correlation

First author: Tjaart de Wit
16:15 - 16:20, Friday, December 17th
Convention Center - Room 346-347

EP54A-01 Shifting Biogeochemistry in Arctic Rivers: Patterns Emerging from 17+ Years of Sampling by the Arctic Great Rivers Observatory

First author: **James W McClelland**
17:30 - 17:35, Friday, December 17th
Convention Center - Room 225-227

GC54A-01 Bioclimatic modeling seed mass of major conifers of Siberian taiga in a warming climate

First author: Elena I. Parfenova
17:35 - 17:42, Friday, December 17th
Convention Center - Room 206-207

S54A-04 Revealing the signature of ground frost in continuous seismic data with machine learning

First author: Rene Steinmann
17:45 - 17:50, Friday, December 17th
Convention Center - Room 346-347

A54C-06 Status of testing, and calibration of the miniaturized Laser Heterodyne Radiometer (mini-LHR), and a timeline for deploying a global ground network of CH₄ and CO₂ sensors

First author: Emily Lynn Wilson
17:55 - 18:00, Friday, December 17th





Convention Center - Room 286-287

EP54B-04 How Frost Weathering Drives Erosion in High Alpine Environments

First author: Daniel Draebing

17:56 - 18:03, Friday, December 17th

Convention Center - Room 220-222

H54G-08 River and Basin Profiler: a module for extracting watershed boundaries, river centerlines, and catchment statistics

First author: Tal Zussman

18:05 - 18:10, Friday, December 17th

Convention Center - Room 271-273

Poster Presentations

A55C-1386 Optimization of Maximum Photosynthetic Carboxylation Rate ($V_{c,max}$) in CLASSIC for North America's Boreal Forests using Eddy Covariance Data

First author: Bo Qu

19:00 - 21:00, Friday, December 17th

Convention Center - Poster Hall, D-F

A55M-1567 The New NOAA Barrow Atmospheric Baseline Observatory – Facility Upgrades and New Collaboration Opportunities Near Utqiagvik, Alaska

First author: Brian A Vasel

19:00 - 21:00, Friday, December 17th

Convention Center - Poster Hall, D-F

A55N-1593 Influence of Natural Variability on Simulated Changes in Arctic Permafrost

First author: Killian McSweeney

19:00 - 21:00, Friday, December 17th

Convention Center - Poster Hall, D-F

A55S-1671 A Machine Learning Approach to Fire Source Attribution for the Improvement of Arctic Fire Emission Models

First author: Justin J Fain

19:00 - 21:00, Friday, December 17th

Convention Center - Poster Hall, D-F





B55C-1219 Assessing the Timing of Shifts in 20th Century Carbon Stocks in Eastern Canadian Peatlands

First author: Nicole K Sanderson
19:00 - 21:00, Friday, December 17th
Convention Center - Poster Hall, D-F

B55C-1228 Recent Warming-induced Shift to Sphagnum-dominated Vegetation in Permafrost Peatlands of Nunavik (Quebec)

First author: Camille Girard
19:00 - 21:00, Friday, December 17th
Convention Center - Poster Hall, D-F

B55D-1231 Latitudinal Permafrost Peatland Distribution and Land Cover Changes in the Hudson Plains, Canada

First author: Mikhail Mack
19:00 - 21:00, Friday, December 17th
Convention Center - Poster Hall, D-F

B55D-1232 Temperature sensitivity and moisture optimum for CO₂ production in northern peatland soils measured by laboratory incubation experiments

First author: Eunji Byun
19:00 - 21:00, Friday, December 17th
Convention Center - Poster Hall, D-F

C55B-0579 An Open Source GNSS Interferometric Reflectometry Software Package in Python to Support Cryosphere Research

First author: Kelly Enloe
19:00 - 21:00, Friday, December 17th
Convention Center - Poster Hall, D-F

C55D-0625 Measurements and controls on mid-winter alpine ground thermal regime in the Purcell Mountains, British Columbia

First author: Kevin Ostapowich
19:00 - 21:00, Friday, December 17th
Convention Center - Poster Hall, D-F

C55D-0626 Modelling Water Release from Degrading Permafrost in Arid Mountain Environments

First author: **Cassandra Koenig**
19:00 - 21:00, Friday, December 17th





Convention Center - Poster Hall, D-F

ED55C-0305 Interdisciplinary Access to Geographic Information Science: Peer Teaching in Higher Education

First author: Amber R Ignatius

19:00 - 21:00, Friday, December 17th

Convention Center - Poster Hall, D-F

EP55A-1057 Active Layer Thickness as a Function of Soil Water Content in Alaska and Canada

First author: **Leah Clayton**

19:00 - 21:00, Friday, December 17th

Convention Center - Poster Hall, D-F

EP55A-1110 Potential volcanic origin of channel systems in Arcadia Planitia, Mars

First author: Holden Gehringer

19:00 - 21:00, Friday, December 17th

Convention Center - Poster Hall, D-F

EP55C-1123 Reproducing dynamic sediment-discharge relationships driven by time-varying sediment availability in cold basins: the sediment-availability-transport model

First author: Ting Zhang

19:00 - 21:00, Friday, December 17th

Convention Center - Poster Hall, D-F

EP55C-1124 Signatures of Permafrost Processes in Fluvial Network Morphology and Change on the Seward Peninsula, Western Alaska, USA

First author: Joanmarie Del Vecchio

19:00 - 21:00, Friday, December 17th

Convention Center - Poster Hall, D-F

EP55C-1130 Using Temperature Sensors to Track the Thaw and Erosion Fronts in an Experimental Permafrost Riverbank

First author: Maria Schmeer

19:00 - 21:00, Friday, December 17th

Convention Center - Poster Hall, D-F

EP55D-1134 Does Climate Zone Affect Delta Morphology?

First author: Benjamin Peters

19:00 - 21:00, Friday, December 17th





Convention Center - Poster Hall, D-F

EP55G-1187 Geology and Topography Control Frost Weathering in High Alpine Rockwalls

First author: Till Mayer and Daniel Draebing

19:00 - 21:00, Friday, December 17th

Convention Center - Poster Hall, D-F

GC55A-0408 High-Resolution Regional Climate Simulations of Alaskan Hydroclimatic Change

First author: Andrew James Newman

19:00 - 21:00, Friday, December 17th

Convention Center - Poster Hall, D-F

GC55E-0475 The Features of Hydrologic and Thermal Regimes of Coarse Blocky Materials in High Mountains, Central Asia and their Impact on River Runoff.

First author: **Sergey S Marchenko**

19:00 - 21:00, Friday, December 17th

Convention Center - Poster Hall, D-F

GC55E-0477 Estimating Costs of Mid-21st Century Climate Change Impacts on Societies and Infrastructure in the Circumpolar Arctic

First author: **Dmitry A Streletskiy**

19:00 - 21:00, Friday, December 17th

Convention Center - Poster Hall, D-F

GC55E-0478 Methods of maintenance of stability of engineering infrastructure in Eurasian cryolithozone

First author: **Valery I Grebenets**

19:00 - 21:00, Friday, December 17th

Convention Center - Poster Hall, D-F

GC55E-0479 Risks of stability of transport systems in the Western sector of the cryolithozone of Russia with the development of dangerous cryogenic processes

First author: Fedor Iurov

19:00 - 21:00, Friday, December 17th

Convention Center - Poster Hall, D-F





GC55E-0480 Snowbank impacts on frozen foundations in cities of continuous permafrost zone

First author: Vasily Andreevich Tolmanov
19:00 - 21:00, Friday, December 17th
Convention Center - Poster Hall, D-F

GC55J-0526 Understanding permafrost and agriculture interactions for ensuring sustainable, adaptable and resilient permafrost-agroecosystems

First author: **Melissa Ward Jones**
19:00 - 21:00, Friday, December 17th
Convention Center - Poster Hall, D-F

GC55J-0529 Connecting Climate Change and Seismic Resilience of Alaskan Infrastructure Systems

First author: Matthew Turner
19:00 - 21:00, Friday, December 17th
Convention Center - Poster Hall, D-F

GC55J-0530 Potential for development of the process of thermokarst in the zone of discontinuous permafrost in Alaska.

First author: **Alexander L Kholodov**
19:00 - 21:00, Friday, December 17th
Convention Center - Poster Hall, D-F

GC55J-0531 Approach to Estimate Current and Future Destabilization Risk to Energy Facilities on Permafrost

First author: Jefferson Antwi-Agyei
19:00 - 21:00, Friday, December 17th
Convention Center - Poster Hall, D-F

GC55J-0532 Understanding the Changing Natural-Built Landscape in an Arctic Community: An Integrated Sensor Study in Utqiagvik, Alaska

First author: MacKenzie Nelson
19:00 - 21:00, Friday, December 17th
Convention Center - Poster Hall, D-F

GC55J-0536 Geopolitical and Strategic Impacts of the Polar Thaw on North Atlantic Security

First author: Barry Zellen
19:00 - 21:00, Friday, December 17th
Convention Center - Poster Hall, D-F





GC55J-0537 The New England Arctic Network

First author: Katharine Duderstadt
19:00 - 21:00, Friday, December 17th
Convention Center - Poster Hall, D-F

H55F-0807 Impacts of Climate Warming on Frozen Ground Regimes and Groundwater Recharge

First author: Katrina Rabeler and Steven P Loheide III
19:00 - 21:00, Friday, December 17th
Convention Center - Poster Hall, D-F

H55K-0857 Estimating Hydraulic and Thermal Properties of an Antarctic Active Layer through Column Experiments

First author: Jeonga Kim
19:00 - 21:00, Friday, December 17th
Convention Center - Poster Hall, D-F

H55W-0995 Developing A Systems Perspective on Wildfire Impacts to Water Resources and Infrastructure

First author: Jodi L. Ryder
19:00 - 21:00, Friday, December 17th
Convention Center - Poster Hall, D-F

P55E-1979 Investigation of geomorphological signatures of permafrost in the polar lunar areas with VIPER

First author: Nick Gorkavyi
19:00 - 21:00, Friday, December 17th
Convention Center - Poster Hall, D-F

P55E-1980 Utilizing a new laboratory BRDF dataset for Apollo regolith samples with known surface properties: Interpreting Diviner's visible off-nadir data and setting accurate scattering functions within thermal models.

First author: Rowan Curtis
19:00 - 21:00, Friday, December 17th
Convention Center - Poster Hall, D-F

