Special section of the T-MOSAiC Newsletter on Permafrost Thaw and the T-MOSAiC Workshop

In this newsletter, we announce the T-MOSAiC final workshop that will be held online on Monday December 6. We also highlight recent developments made by the Permafrost Thaw AG.
For more details, please contact the secretariat.

SPECIAL ISSUES

Special T-MOSAiC Issue of Arctic Science

The T-MOSAiC special issue of *"Arctic Science"* is open for submissions until March 31st 2022. Please visit the T-MOSAiC website for updated information or contact the secretariat: https://www.t-mosaic.com/

Special Issues on Remote Sensing

Special joint Issue of Journal of Unmanned Vehicle Systems (changing to Drone Systems and Applications) / Arctic Science: 'Unoccupied Vehicle Systems in Arctic Research and Monitoring' All papers published in this collection will be made open access at no cost to authors with a flexible deadline of an expression of interest this summer and a deadline in the autumn. Guest Editors: Dr. Isla Myers-Smith, Dr. Jeffrey Kerby, Dr. Dustin Whalen.

Special issue of Remote Sensing: 'Advanced Technologies in Wetland and Vegetation Ecological Monitoring' with a deadline of 31 March 2022. Guest Editors: Dr. Sergio Vargas Zesati, and Dr. Jeremy May.

Special issue of JGR Biogeosciences: 'The Earth in living color: spectroscopic and thermal imaging of the Earth: NASA's Decadal Survey Surface Biology and Geology Designated Observable' with a deadline of 31 August 2022. Guest Editors: David S Schimel, Benjamin Poulter, Natasha Stavros, Phil Townsend, Nancy Glenn.

Special issue of Remote Sensing: 'Multi-Scale Analysis for Detecting the Processes, Causes, and Impacts of Permafrost Change and of Disruptive Events' with a deadline of 30 Nov 2021. Guest Editors: Michael Lim, Gonçalo Vieira and Dustin Whalen

CONFERENCES

Scientific Session at ASM2021 on Artic Microbiomes endorsed by the T-MOSAiC correspondent AG

The ArcticChange2021 conference will take place online in December 2021. The call for submission of abstracts is now open, and the Arctic Microbiomes AG is pleased to endorse a scientific session entitled, "Microbiomes as sentinels of a changing Arctic" (TER48), in the "Terrestrial" section of the meeting's topical sessions. Here is the abstract for this session:

"Among the life forms that live in Arctic environments, microorganisms are the major contributors to nutrient and energy cycles, biodiversity and biomass. Microbial processes underpin Arctic food webs. Therefore, understanding their dynamics and interactions is vital to understanding the ecology of the biome as a whole, especially considering the rapid warming in this region. Although the impact of climate change on microbial communities remains unclear, the unique microbial ecosystems associated with fragile Arctic environments such as glaciers, ice-covered seas and permafrost will surely be adversely affected. Changes in microbial communities can ripple throughout food webs and alter the availability and quality of resources collected by Northerners on the land, directly impacting their microbiomes. Therefore, the response of microbial communities to warming will impact not only ecosystem health but also human health. This session aims to

advance our understanding of environmental and human microbiomes and how they interact and overlap in the context of a rapidly changing Arctic."

For more information, please use this link.

T-MOSAiC Open Workshop

T-MOSAiC final workshop will take place during the 2021 ArcticNet Science Meeting. In this sixth and final workshop, participants will report on progress, future plans and opportunities.

Date: Monday 6 December 2021

Time: 12h30 to 14h30 (EST Canada), 17h30 to 19h30 (GMT).

AGENDA

1. Welcome and workshop objectives (Warwick & João)
2. Action Group (AG) reports and wrap-up summaries.
3. Status of the T-MOSAiC special issues (João, Gonçalo, Anne/Jérôme & Warwick
4. 'Beyond T-MOSAiC' and ASSW2022 (João & Warwick)
5. Discussions and close

Access the meeting:

zoom

Topic: T-MOSAiC Workshop Time: 6 Dec. 2021 05:30 PM GMT
Link: https://zoom.us/j/96407126627?pwd=aTFrTlVEa1A2cTVESkQ4andHVHYxdz09
Meeting ID: 964 0712 6627
Password: j9NF5M

Special Section: Permafrost Thaw

Edited by Julia Boike and the co-chairs of the Permafrost Thaw Action Group

Recent achievements of the Permafrost Thaw AG, include:

1) Paper on protocols soon to be published: https://doi.org/10.1139/AS-2021-0007

2) Release of mobile app myThaw (iOS and Android)
3) Video tutorials for myThaw and about how to set up your transect
4) Database with incoming data sets

The permafrost thaw AG is happy to announce that their paper "**Standardized monitoring of permafrost thaw: a user-friendly, multi-parameter protocol**" is accepted and about to be published in the journal "Arctic Science".

The protocol provides a guideline for standardized collection of field data for quantifying permafrost thaw. It addresses the need for integrated observations of multiple connected components of permafrost landscapes, including soils, snow and vegetation. Multi-parameter observations are necessary to understand and predict permafrost thaw, which is increasingly affecting infrastructure, ecosystems and human livelihoods

The protocol is structured according to spheres (and parameters): snow (snow depth), permafrost (thaw depth), vegetation (vegetation height), water (water level) and soil (texture and organic layer thickness). The figure below summarizes the measurements.

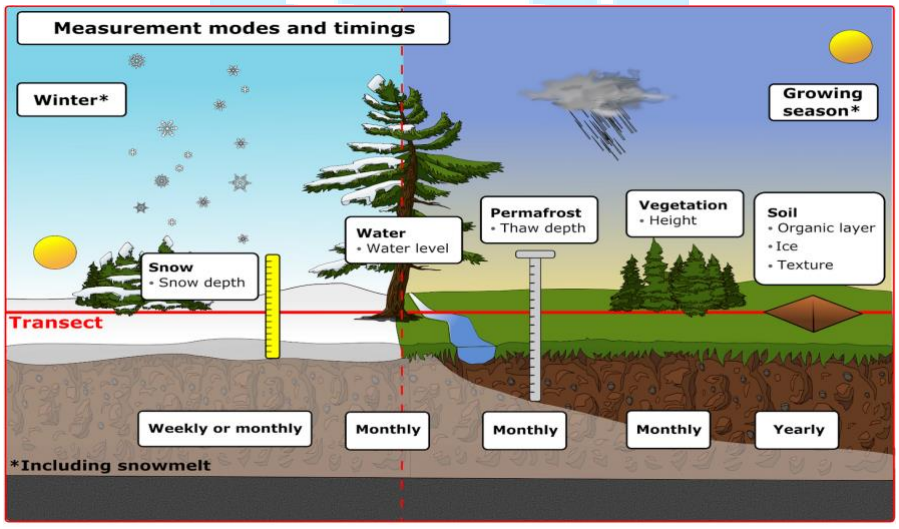

Figure 1: Spheres with the associated parameters, measurement modes and observation timings along one transect over one seasonal cycle.

We have established a growing database with data sets from already seven pan-arctic sites online: https://dashboard.awi.de/?dashboard=10738 and hopefully there are many more to come. Based on our protocol we produced a mobile app myThaw for iOS and Android as well as several video tutorials on YouTube.

For more information, see our www page: https://www.t-mosaic.com/permafrost-thaw.html