T-MOSAiC

Terrestrial Multidisciplinary distributed Observatories

for the Study of Arctic Connections

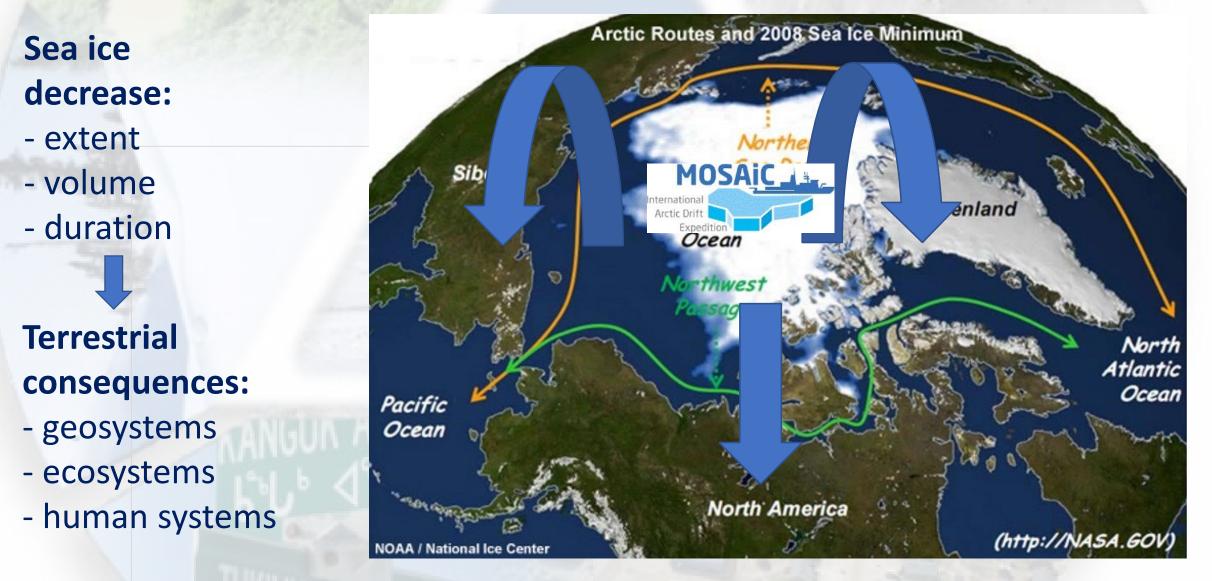
Summary of the Activities

April, 25, 2022

João Canário, Portugal Warwick Vincent, Canada <u>Julia Boike</u>, Germany

T-MOSAiC - Background

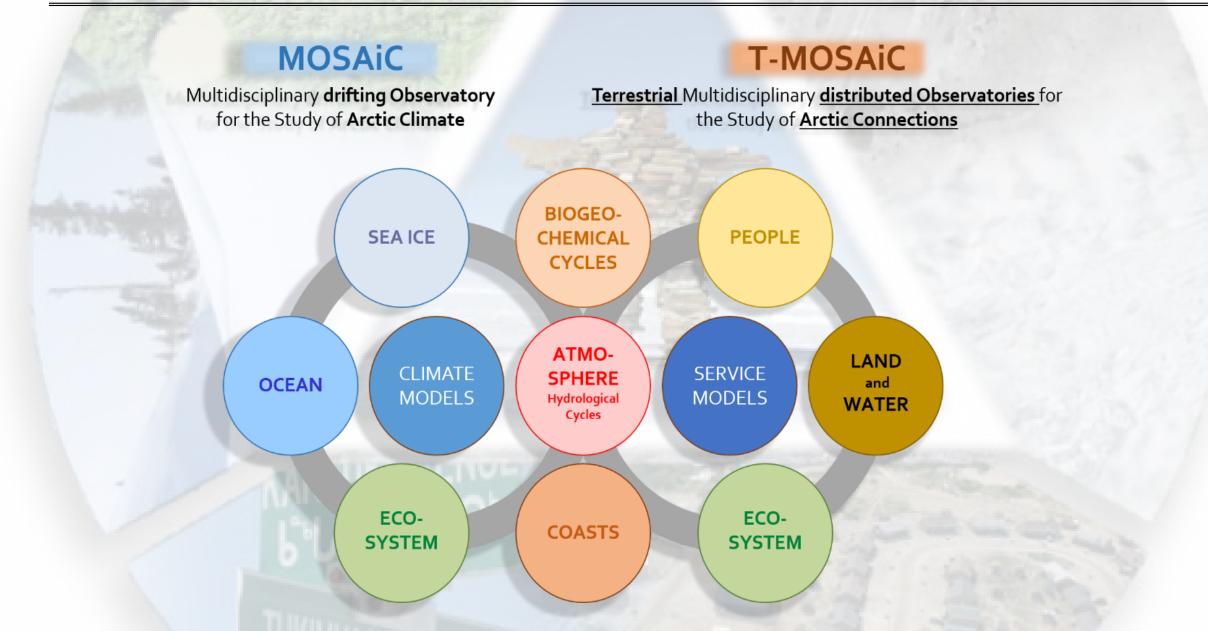
Terrestrial Multidisciplinary distributed Observatories for the Study of Arctic Connections



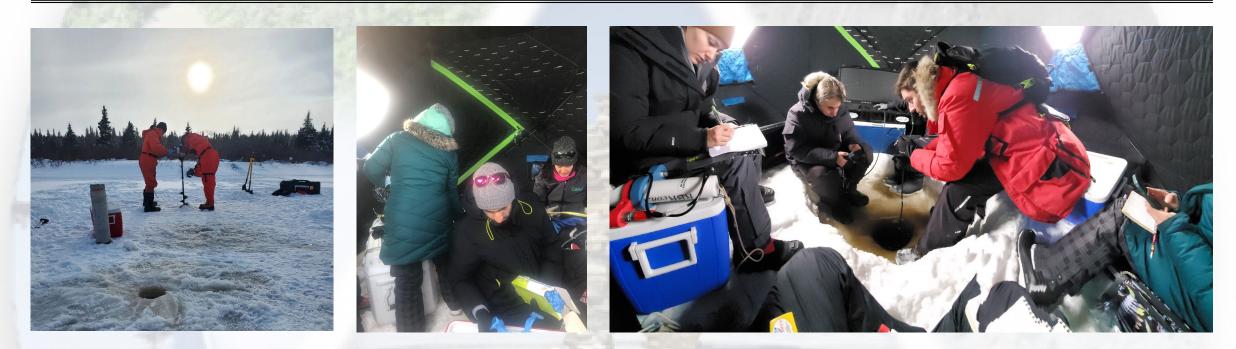
Terrestrial Multidisciplinary distributed Observatories for the Study of Arctic Connections

<u>T-MOSAiC</u>: "What are the implications of changing sea ice, oceanography and climate of Arctic seas for the surrounding land-based geosystems, ecosystems and human systems?"

T-MOSAiC - Background



Fieldwork





Most field activities were cancelled or postponed

Most field activities were cancelled or postponed
One campaign took place in February and some activities with northern residents
Limited maintenance of field and climate stations

Limited maintenance of field and climate stations

Action Group (AG) Activities

74 Activities reported from: scientific sessions in conferences; workshops



16 Workshops, 4 Keynotes, 12 Scientific sessions and > 150 scientific presentations (oral+posters)

Arctic Science Special Issue

Collection

Terrestrial Geosystems, Ecosystems, and Human Systems in the Fast-Changing Arctic (T-MOSAiC)



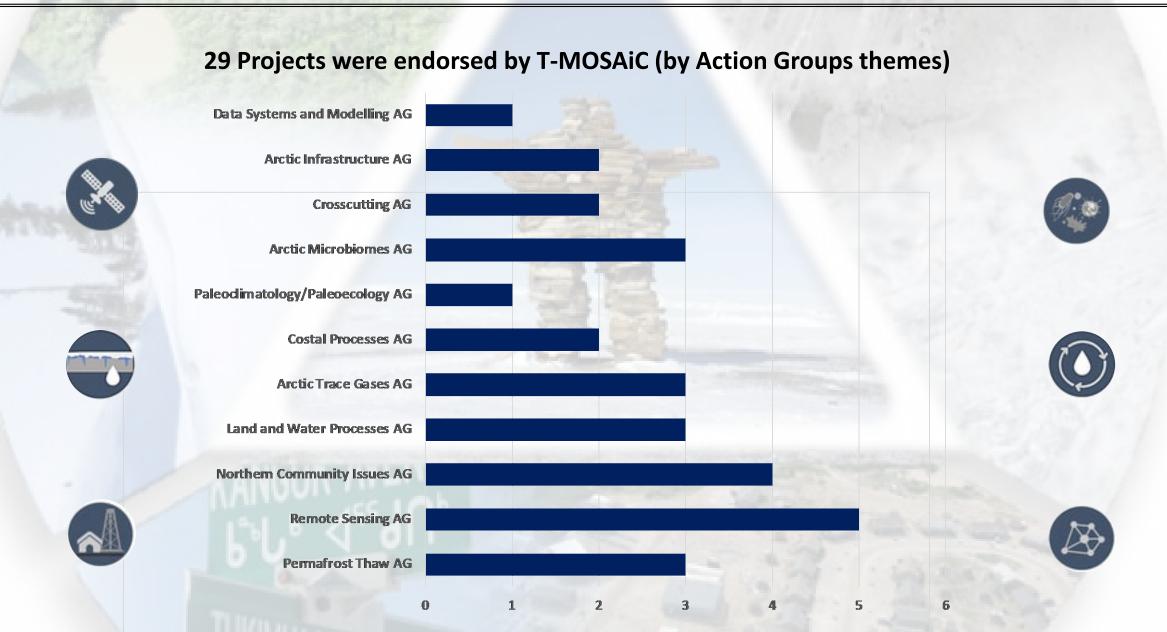
This special virtual compilation brings together researchers from different countries and disciplines to examine the effects of environmental change on Arctic landscapes, terrestrial ecosystems, and northern communities. The reviews and research articles address themes within the circumpolar project "Terrestrial Multidisciplinary distributed Observatories for the Study of Arctic Connections" (T-MOSAiC).

Curators

Guest Editor
déric Bouchard est Editor
ory H. R. Henry
t Editor

https://cdnsciencepub.com/topic/as-terrestrial)

Projects

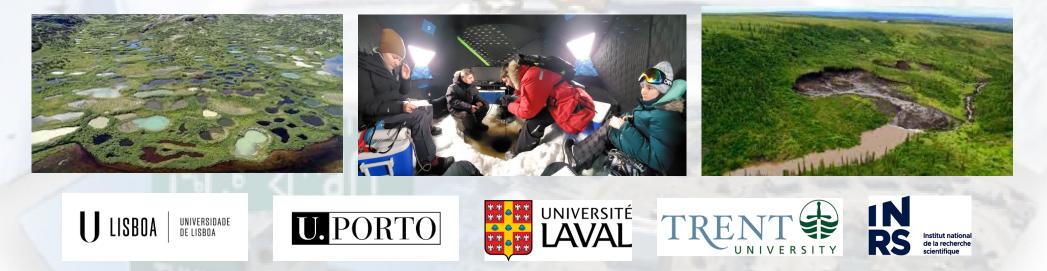


Projects: PERMAMERC

Mercury Biogeochemistry, Fate and Impact in Permafrost Thaw Ecosystems (2021-2024)

PI: João Canário (University of Lisbon)

- PERMAMERC intends to contribute to understand the Hg cycle in permafrost thaw systems: from Hg
 methylation processes to gas exchange in permafrost thaw surface waters, and the photochemical and
 microbiological processes involved.
- **PERMAMERC** will contribute to understand the importance permafrost thaw in the global Hg cycle and to provide scientific based knowledge related to impacts on Arctic ecology, ecosystem services and human health.



MODAAT Home Map Overview MODAAT Console About





Development of interoperability
standards for AWS data during
MOSAiC/T-MOSAiC Year 2018
and delivery of test station data
via ERDDAP data server

https://sig-gis.cen.ulaval.ca/modaat

Standardized Monitoring of Permafrost Thaw (Julia Boike)



Standardized monitoring of permafrost thaw: a user-friendly, multi-parameter protocol (2021). Boike, J., Chadburn S., Martin, J., Zwieback, S., Althuizen, I. H. J., Anselm N., Cai, L., Coulombe, S., Lee, H., Liljedahl, A. K., Schneebeli, M., Sjöberg, Y., Smith, N., Smith, S. L., Streletskiy, D. A., Stuenzi, S. M., Westermann, S. and Wilcox, E. J. . *Arctic Science*. https://doi.org/10.1139/AS-2021-0007

Newsletters



restrial Multidisciplinary distributed Observatories for the Study

Manufacture of A July 2020

New section of the T.MOLAIC Neuroletter

In each resentences we would like to highlight publications from 1 MOSAC colleagues that are relevant to FADAU thereas, to please let us know when you have new articles that you would like to share with with up. "Extreme events" is one of the 7-MOSAC system level themes, and recent publications on this subject include an article from the laboratory of Tarlien Orioteman (orchair of the Arctic Trace Gas AG). ane from the laboratories of Warwork kinsent (pochar of TAKSAC and member of Land & Water Processes All and Manak Unlish Interder of TACASC Treating Committeel, and another from Christopher Mcp and collegates, than the used and Water Processes AS Dava below for details).





Terrestrial Multidisciplinary distributed Observatories for the Study of Arctic Connections

Newsletter nº 5 September 2020

ASSW 2021 Science Conference moves to virtual

Given the ongoing COVID-19 situation in Europe, North America and elsewhere, the ASSW2021 Local Organizing Committee (LOC) in coordination with IASC has made the decision to move the conference to an online event, with the possible exception of the business meetings that involve fewer participants. The ASSW2021 organizers are now planning for ASSW2021 to be an exciting online Science Conference, with wide participation throughout the world. We expect it will be an excellent opportunity to discuss Arctic science, engineering, education and outreach, as well as Indigenous and local community issues. The LOC is very much looking forward to meeting you all online in March next year.





Terrestrial Multidisciplinary distributed **Diservatories for the Mudy** of Arttle Connections

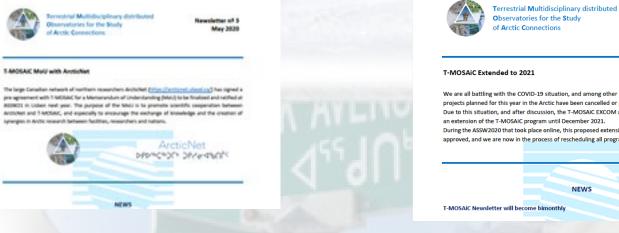
ASSW 2023 mound to halfy online format

liters that organing (2048) 19 structure in Europe, North America and sharehere, the AREADER Literal Organizing Gammittee (UC) decided to more all the meeting to policy knowal. The UC are applying tracets as received online ALLIGORS, which will also alow for order scores across the parel. We receive that it will be a very good apportunity to discurs Anite screece, expressing, education, as well as trageness and local constantly score. Hence, we are bailing brieved to meeting you all sidne your and to reported a very Tractor Antist (102). For more information, well many acceleration



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14 Newsletters (last to be released in April/May 2022)





April 2020

We are all battling with the COVID-19 situation, and among other consequences, many of our T-MOSAiC projects planned for this year in the Arctic have been cancelled or postponed. Due to this situation, and after discussion, the T-MOSAiC EXCOM and SCOM decided to propose to IASC During the ASSW2020 that took place online, this proposed extension of T-MOSAiC was well received and approved, and we are now in the process of rescheduling all programmed activities.



Terrestrial Multidisciplinary distributed Observatories for the Study of Arctic Connections

Newsletter nº 1 February 2020

Newsletter of 7

January 3071

Welcome to our first newsletter for T-MOSAiC

Many T-MOSAiC projects are now well underway and contributing towards our goal of an improved understanding of northern geosystems, ecosystems and human systems. These projects include new observations around the circumpolar Arctic, environmental sampling and archiving, conceptual syntheses and review articles, field workshop and conference session activities, and data compilations and analyses. This T-MOSAiC Newsletter will be published regularly, and our Secretariat will be happy to receive contributions from all T-MOSAiC Action Groups and collaborators. Looking forward to hearing from you over the course of T-MOSAiC 2020!

The T-MOSAiC Chairs and Secretariat NEWS Special T-MOSAiC Issue of Arctic Science

Scientific Papers and Special Issues



45 Scientific Papers and still many more in the pipeline



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Structural Characterization of Disselved Organic Matter in Permatnost Postland Lakes

Oligar Falles, ^{11,11}, Samuel C. Daniel, ¹¹, Martin Hale, ¹⁴, Harviel F. Planet, ¹⁴, Public forms, ¹¹, Complex Testics,¹, Amer. M. S. Weite, ¹⁶, Righter R. R. S. Frank, ¹⁶, and ¹⁶

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(Market) - The Adjustment

T-MOSAiC 2.0 discussion points

- Flexibility in governance
- Focus on big research questions and not in Action Groups
- Science Plan revision and update
- Closer interaction with IASC WG
- Stronger involvement of other organizations (SAON, INTERACT, IPA, APECS, etc)
- Apply for specific funding (EU, NSF, ESA, Bilateral calls, Erasmus+, etc)
- T-MOSAIC <-> H-MOSAIC

T-MOSAiC

Terrestrial Multidisciplinary distributed Observatories

for the Study of Arctic Connections



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