Aikaterini Tavri

Postdoctoral Research Associate
Department of Earth, Environmental, and Planetary Sciences
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Education

PhD in Microwave Remote Sensing of Sea Ice 2023
Department of Geography, University of Victoria, BC, Canada
Dissertation: *Assessment of Arctic sea ice properties during advanced melt using C- and L-band polarimetric synthetic aperture radar*

MSc in Satellite Application Engineering 2016
Earth-oriented space science and technology (ESPACE),
Technische Universität München, Germany
Dissertation: *Flood monitoring based on multi-temporal Sentinel-1 data – a synergistic approach of amplitude data with interferometric coherence*

BSc in Environmental Sciences and Oceanography 2013
Department of Marine Sciences, University of the Aegean, Lesvos, Greece
Dissertation: *Spiral eddies in the Aegean Sea derived by satellite radar data*

Teaching Experience

Instructor 2019 - 2023
University of Victoria
Courses: Remote Sensing of the Environment with active sensors, Geocaching, Introduction to Remote Sensing

Teaching Assistant 2017 - 2022
Department of Geography, University of Victoria
Courses: Remote Sensing of the Environment with active sensors, Geocaching, Introduction to Remote Sensing, Advanced topics in Remote Sensing, Physical Geography

Undergraduate Mentor for student projects at the ICE lab 2021 - 2023
University of Victoria

Invited lectures and science communication 2018 - 2023
University of Victoria, Nerd Nite Victoria

Research Experience

Research Assistant 2022 - 2023

Department of Geography, University of Victoria
Supervisor: Dr. Randall Scharien
Project Title: Snow Microwave Radiative Transfer (SMRT) sea ice model sensitivity analysis for winter and summer sea ice conditions.

Research Assistant 2022
Department of Mechanical Engineering, University of Victoria
Supervisor: Prof. Curran A. Crawford
Project Title: Development of a City of Victoria Neighborhood DC Fast Charger Site Selection Guide, using a spatial analysis model

INSPIRE Ambassador and Project Manager 2022
Department of Computer Science and Engineering, University of Victoria
Supervisor: Prof. Daniela Damian
Project Title: Resilient Urban Systems & Habitat (RUSH) (https://inspireuvic.org/rush) website development and outreach.

Publications

Macdonald, G. J., Scharien, R. K., Duncan, K., Farrell, S. L., Rezania, P., & **Tavri, A.** (2024). Arctic sea ice topography information from RADARSAT Constellation Mission (RCM) synthetic aperture radar (SAR) backscatter. *Geophysical Research Letters*, *51*(4), e2023GL107261.

Tavri, A., Scharien, R., & Geldsetzer, T. (2023). Melt Season Arctic Sea Ice Type Separability Using Fully and Compact Polarimetric C-and L-Band Synthetic Aperture Radar. Canadian Journal of Remote Sensing, 49(1), 2271578. DOI: https://doi.org/10.1080/07038992.2023.2271578.

Macfarlane, A. R., Schneebeli, M., Dadic, R., **Tavri, A.,** Immerz, A., Polashenski, C., ... & Fons, S. (2023). a Database of Snow on Sea Ice in the Central Arctic Collected during the MOSaiC expedition. Nature: Scientific Data, 10(1), 398. DOI: https://doi.org/10.1038/s41597-023-02273-1.

Nicolaus, M., Perovich, D.K., Spreen, G., Granskog, M.,...,**Tavri, A.**, ... & Wendisch, M. (2022). Overview of the MOSAiC expedition—Snow and sea ice. Elementa: Science of the Anthropocene 10(1). DOI: https://doi.org/10.1525/elementa.2021.000046.

Scharien, R.K, Geldsetzer, T., Mead, J., Nandan, V., Mahmud, M., & **Tavri, A.** (2021). Surface-based and Fully Polarimetric L-band Frequency Scatterometer System for Field Measurements of Sea Ice, 2021 IEEE 19th International Symposium on Antenna Technology and Applied Electromagnetics (ANTEM), pp. 1-2. DOI: 10.1109/ANTEM51107.2021.9518497.

Scharien, R. K., Geldsetzer, T., Nasonova, S., Cafarella, S., & **Tavri, A**. (2018, July). Assessment of seasonal sea ice type and roughness regime discrimination using a unique C-and L-band SAR database. In *IGARSS 2018-2018 IEEE International Geoscience and Remote Sensing Symposium* (pp. 7352-7353). IEEE.

Martinis, S., Brcic, R., Plank, S., Manuel, **Tavri, A.**, Rodriguez, G. F. (2017). The use of the Sentinel-1 InSAR Browse service on ESA's Geohazards Exploitation Platform for improved disaster monitoring. Fringe 2017

Tavri, A., Singha, S., Lehner, S., & Topouzelis, K. (2016). Observation of sub-mesoscale eddies over Baltic Sea using TerraSAR-X and Oceanographic data. In *Proceedings of Living Planet Symposium*.

Tavri, A., Topouzelis, K., & Tragou, E. (2014). Spiral eddies in the Aegean Sea derived by satellite radar data. In Second International Conference on Remote Sensing and Geoinformation of the Environment (RSCy2014), Vol. 9229, pp. 373-381. DOI: https://doi.org/10.1117/12.2066291.

Seminars / Contributed talks / Community talks

Tavri A., "Exploring Melting Sea Ice: Unraveling Radar Backscatter Variability in the Melt Season with Multifrequency and Multipolarimetric Synthetic Aperture Radar", Ocean Ice and Atmosphere seminar, University of Bremen, July 4th, 2023.
Tavri, A., Scharien, R., "C- and L-band SAR scattering mechanism retrievals for the MOSAiC floe in the melt season", presentation in the 2nd MOSAiC Science Conference: Cross-cutting Science to Advance Modeling Capabilities, Feb 13-17, 2023, Boulder.
Tavri, A., Scharien, R., "Sea Ice Type Separability During Advanced Melt Season Using C- and L- Band Synthetic Aperture Radar", presentation in the 43rd Canadian Symposium on Remote Sensing, July 11-15, 2022, Quebec City.
Tavri, A., "Melt season Arctic sea ice type discrimination and seasonal attribution using advanced Synthetic Aperture Radar, "invited online talk to the Society of Naval Architects and Marine Engineers -arctic section, May 19th, 2021.
Tavri, A., Scharien, R., "Melt Season Arctic Sea Ice Type Discrimination using Compact Polarimetric Synthetic Aperture Radar Data", presentation in IGARSS, July 12-16, 2021, Brussels.
Tavri, A., Scharien, R., "Sea ice type separability during melt conditions using C-band frequency compact-polarimetric synthetic aperture radar data", presentation in Arctic Science Summit Week - ASSW2021, 19-26 March 2021, online, Lisbon.

Tavri, A., Scharien, R., "Arctic Sea Ice Type Separability During Advanced Melt from Fully and Compact Polarimetric C-Band Frequency Synthetic Aperture Radar Data", presentation in the 42nd Canadian Symposium on Remote Sensing, July 11-15, Yellowknife June 21-24, 2021
Tavri, A., Scharien, R., "C-band, fully-polarimetric and simulated compact-polarimetric synthetic aperture radar data for sea ice type separability during the seasonal advanced melt period", video presentation in EO for polar science workshop, 2020, virtual.

Tavri A., "My Arctic adventure: the sea ice remote sensing mate on the Multidisciplinary drifting Observatory for the Study of Arctic Climate (MOSAiC) expedition", NerdNite Victoria, public talk, 2020.

Grants and Awards

- NASA ROSES-2024 A.16-Cryosphere, PI: Horvat C., Co-I: **Tavri, A.** Investigating the impact of ocean surface waves on passive microwave retrievals of sea ice concentration (applied) ($155000/year for 3 years to Brown University).
- Gilian Sherwin Scholarship for teaching excellence, Department of Geography, University of Victoria (1500CAD, 2020).
- John W. Davies Memorial Award, Society of Naval Architects and Marine Engineers (SNAME), (2500 CAD, 2020).
- IEEE, IGARSS, Women in Geosciences award, research photo competition ($500, 2020).
- Travel Awards from the Canadian Remote Sensing Society (CRSS) (1500CAD), the International Glaciological Society (IGS) (1000CAD), and the European Space Agency (ESA) (500 euro).
- Early career scientist awards from the International Arctic Science Committee (IASC) and the University of Colorado, Boulder ($1200).
- Marine Environmental Observation, Prediction and Response Network (MEOPAR) HQP scholarship (2017-2020) (21000 CAD/yr).

Fieldwork and summer schools

- Multidisciplinary drift observatory for the study of the Arctic climate (**MOSAiC**) expedition participant (2020).

Tasks: sea ice remote sensing team; studied sea ice geophysical properties with ground-based optical and microwave instruments during the melt season; installed and monitored GNSS sensors, ground-based scatterometers, and radar sensors; conducted experiments and snow pit measurements daily.

- ESA 2nd Advanced training course on remote sensing of sea ice 11 – 16 June in Svalbard, Norway (2018).

Programming Skills

Python, Matlab, IDL, RStudio, Javascript (GEE)
Software: QGIS, ENVI, ArcGIS, PCI-Geomatica, SNAP

Professional Service

- As a reviewer:
  Journals: Annals of Glaciology, Canadian Journal of Remote Sensing
- As a committee member:
  Association of Polar Early Carrer Scientists (APECS): member and participant in 3 group projects for remote sensing datasets, science communication, and outreach to younger audiences (2020-2023)
  Marine Environmental Observation, Prediction and Response Network (MEOPAR): research management committee, student member (2020-2021)
  Canadian Meteorological and Oceanographic Society (CMOS) Vancouver Island: student representative and co-organizer for CMOS 2021 Congress student committee and organizer of monthly talks on climate (2018-2022)
  Community climate science seminars (CCSS): chair (2018-2022)
  Graduate Affairs Committee (GAC), University of Victoria: Student representative (2019-2021)
  Canadian Association of Geographers (CAG) and Western Canadian Association of Geographers (WDCAG): conference volunteer, co-organizer (2018-2019)

Memberships

- Americal Geophysical Union (AGU)
- Canadian Remote Sensing Society (CRSS)
- IEEE Geoscience and Remote Sensing Society

Languages: English (fluent), Greek (native), German (beginner), Spanish (beginner)