

CONTACT

Takuvik (ULaval & CNRS-INSU) — Institut Nordique du Québec, QC, Canada

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Driver's license

French nationality

ONLINE PROFILES

Google Scholar

@mickaellalande

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mickaellalande.github.io

COMPUTER SKILLS

- **Python** (xarray, dask, etc.), **Fortran**
- **Climate models:** LMDZ/ORCHIDEE (IPSL), CLASSIC (ECCC)
- **HPC:** IDRIS, TGCC
- **VS Code** / JupyterLab
- **Linux** / Windows
- **GitHub** / **GitLab**
- **LaTeX** (Overleaf)
- **AI:** Copilot / CODEX

MICKAËL LALANDE

RESEARCH INTERESTS

Snow Physics – Snow Modeling – Cryosphere – Land Surface Models – Climate Modeling – Mountain & Arctic Regions – Deep Learning

CURRENT POSITION

Postdoc | Mar 2026 - Feb 2027 | U. Laval (Québec, Canada)
Development of a physically based Arctic snow model informed by long-term Arctic observations
(supervised by Florent Dominé)
↳ Snow Model Development - Arctic regions - Observations

PROFESSIONAL EXPERIENCE

Postdoc | Oct 2023 - Oct 2025 | UQTR (Trois-Rivières, Canada)
Snow cover heterogeneity and its impact on the Climate and Carbon cycle of Arctic regions (SnowC² - ESA CCI Fellowship)
(supervised by Christophe Kinnard and Alexandre Roy)
↳ Snow Model Development - CLASSIC - Arctic regions

PhD Student | Oct 2019 - Dec 2022 | IGE (Grenoble, France)
Modeling climate trends and variability in High Mountain Asia to understand cryosphere changes
(supervised by Martin Ménégoz and Gerhard Krinner)
↳ CMIP6 - LMDZ/ORCHIDEE (IPSL GCM) - Snow Cover Parameterization

Master thesis | Feb 2019 - Jul 2019 | IGE (Grenoble, France)
Identification and filtering of oceanic chaos by Machine Learning
(supervised by Thierry Penduff and Redouane Lguensat)
↳ Oceanography - Chaos - Deep Learning - Spatial Altimetry

MSc internship | May 2018 - Jul 2018 | IGE (Grenoble, France)
Impact of Arctic sea ice variability on the northern latitudes
(supervised by Olga Zolina and María Santolaria-Otín)
↳ Hydrological cycle - Models - Reanalyses

EDUCATION

PhD | 2019-2023 | Université Grenoble Alpes (Grenoble, France)
Earth and Environmental Sciences (awarded on 28/02/2023)

MSc | 2017-2019 | Université Grenoble Alpes (Grenoble, France)
Majors in Atmosphere, Climate, and Continental Surfaces
(with highest honors)

LANGUAGES

- **French** (native speaker)
- **English** (fluent)

SCIENCE COMMUNICATION

Science et Climat
YouTube channel created in 2019
www.youtube.com/c/ScienceetClimat

Thès' en Images | T'fais une thèse ?
Modéliser la neige en Himalaya

FLASH | OSUG
Is the current global warming due to human activity?

Allodocs Podcast
#21: How can we make climate projections until 2100, when we can't predict the weather in 10 days?

HMA | OSUG
Exacerbated warming in the High Mountain Asia

PUBLICATIONS

Peer-reviewed journals

In preparation

Domine, F., Tremblay, É., **Lalande, M.**, Sarrazin, D., Poirier, M., Thiboult, A., & Kinnard, C. (in prep.). **Twelve years of meteorological, snow and soil data (2013-2025) from a High-Arctic tundra permafrost site at Bylot Island, Canada, for running and testing snow and land-surface models.**

Ménégoz, M., Santolaria-Otín, M., Terray, L., **Lalande, M.**, García-Serrano, J., & Gastineau, G. (in prep.). **A dynamical contribution to the anthropogenic warming in High Mountain Asia.**

Published

2026

Lalande, M., Roy, A., Wang, L., Verseghy, D., Vionnet, V., Dominé, F., & Kinnard, C. (2026). **Improving the CLASSIC (v1.8) snow model to better simulate Arctic snowpacks**. Geoscientific Model Development, 19(19), 9581-9625. https://doi.org/10.5194/gmd-19-9581-2026

2025

Wang, L., Mudryk, L., Melton, J. R., Mortimer, C., Cole, J., Meyer, G., Bartlett, P., & **Lalande, M.** (2025). **Impact of topography and meteorological forcing on snow simulation in the Canadian Land Surface Scheme Including Biogeochemical Cycles (CLASSIC)**. Geoscientific Model Development, 18(18), 6597-6621. https://doi.org/10.5194/gmd-18-6597-2025

2023

Lalande, M., Ménégoz, M., Krinner, G., Ottlé, C., & Cheruy, F. (2023). **Improving climate model skill over High Mountain Asia by adapting snow cover parameterization to complex-topography areas.** The Cryosphere, 17, 5095–5130, https://doi.org/10.5194/tc-17-5095-2023

2021

Lalande, M., Ménégoz, M., Krinner, G., Naegeli, K., & Wunderle, S. (2021). **Climate change in the High Mountain Asia in CMIP6**. Earth System Dynamics, 12(4), 1061–1098. https://doi.org/10.5194/esd-12-1061-2021

PhD thesis

Lalande, M. (2023). **Modeling climate trends and variability in High Mountain Asia to understand cryosphere changes** (2023GRALU005), Theses, Université Grenoble Alpes. https://theses.hal.science/tel-04368947

COMMUNITY INVOLVEMENT



Club plein-air l'AVAL (member 2026-present)

Club de marche moi mes souliers (member 2023-2026)

Zarah (member 2023-2026)

Club Grenoble Rando Université (member 2019-2023)



Mobilisation climat Trois-Rivières (member 2023-2026)



The Canadian Association of Postdoctoral Scholars (member 2024-present)

Support Our Science (member 2024-present)

UNION ENGAGEMENT



Elected **Vice-President to ASTRE UQTR-AFPC postdoctoral researchers** (2024-2026)

Creation of the **postdocs' unit in the ASTRE UQTR-AFPC** union (2024)

CONFERENCES

Lalande, M., Kinnard, C., Roy, A.: **Improving the CLASSIC Snow Model to Better Simulate Arctic Snowpacks,** AGU24, Colloque CEN 2025, EGU25, IGE lab seminar

Lalande, M., Kinnard, C., Roy, A.: **Snow cover heterogeneity and its impact on the Climate and Carbon cycle of Arctic regions,** Colloque CEN 2024, CGU 2024, COHERENT-C/CLASSIC workshop 2024, CCI Colocation 2024

Lalande, M., Ménégoz, M., Krinner, G., and Ottlé, C**: Adaptation of a snow cover scheme for complex topography areas: regional calibration over High Mountain Asia and application in global models,** JMSC2022, International Symposium on Snow 2022, International Mountain Conference 2022, EGU2022, SnowHydro2022

Lalande, M., Ménégoz, M., and Krinner, G.: **Climate change in the High Mountain Asia simulated with CMIP6 models,** EGU2021

Penduff, T., **Lalande, M.**, Lguensat, R., Close, S., and Speich, S.: **Attenuating the ocean chaotic variability in altimetric observations: from band-pass filtering to machine learning,** AGU2019, OST/ST2019

GRANTS

ESA CCI Research Fellowship | 01/10/2023 - 30/09/2025 | UQTR / RIVE / GLACIOLAB (Trois-Rivières, Canada)

Snow cover heterogeneity and its impact on the Climate and Carbon cycle of Arctic regions (SnowC^2)

(ESA referents: Anna Maria Trofaier and Clement Albergel)

TEACHING

ERCA school | Jan 2022 | UGA (Grenoble, France)

Practical works (4h), https://github.com/mickaellalande/ERCA (referent Didier Voisin)

Climatic and Environmental Variability | 2020 - 2021 | UGA

Tutored project (~ 6h), Python (3h), Practical works (6h) (referent Théo Vischel)

HOBBIES

- Hiking
- Snowboard
- Guitar

TRAVELS

- **Japan** (1 year Working Holiday Visa in Kyoto | 2014 - 2015)
- **New Zealand** (3 months backpacking | 2012)
- **Other destinations:** China, Hong Kong, Philippines, United States

TRAINING & PEER REVIEW

MC-Toolkit | 2019 - 2022 | IGE (Grenoble, France)
Organizer of numerical tools meetings for research (Python, etc.)

Mountain Research School | Jun - Jul 2021 | French Alps
Interdisciplinary school to address issues in mountain territories

Lautaret Field Course | Feb - Mar 2018 | French Alps
Snow-Atmosphere interface (mass and energy balance of the surface, nivology, thermics, chemistry; referent Ghislain Picard)

Peer-review Activities
Journal of Advances in Modeling Earth Systems (JAMES)
Journal of Geophysical Research: Atmospheres
Journal of Mountain Science
The Cryosphere