



MICKAËL LALANDE

RESEARCH INTERESTS

Snow - Models - Parameterizations - General Circulation Models - CMIP6 - Mountain Areas - 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 latitude
(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)

CONTACT



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Driving licence



French nationality

SOCIAL NETWORKS



@LalandeMickael



@mickaellalande



@mickaellalande



mickaellalande.github.io

COMPUTER SKILLS

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

LANGUAGES

- French (native speaker)
- English (fluent)

SCIENCE POPULARIZATION



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

HOBBIES

- Hiking
- Snowboard
- Guitar

TRAVELS

- Japan (1 year Working Holiday
Visa in Kyoto | 2014 - 2015)
- New Zealand (3 months
backpacking | 2012)

PUBLICATIONS

Peer-reviewed journals

Submitted

Lalande, M., Roy, A., Wang, L., Versegny, D., Vionnet, V., Dominé, F., & Kinnard, C. (2026). **Improving the CLASSIC (v1.8) Snow Model to Better Simulate Arctic Snowpacks**. *EGUsphere*, 1-57.
<https://doi.org/10.5194/egusphere-2026-492>

In preparation

Domine, F., Tremblay, É., Lalande, M., Sarrazin, D., Poirier, M., Thibault, 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

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>

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>

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., Ménégos, 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., Ménégos, 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 (SnowC²)
(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)

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)

Journal Peer Review

Journal of Advances in Modeling Earth Systems (JAMES)

Journal of Geophysical Research: Atmospheres

Journal of Mountain Science

The Cryosphere