

Quentin Nicolas

✉ quentin.nicolas@env.ethz.ch |  [Google Scholar](#) |  [qnicolas.github.io](https://github.com/qnicolas)

Last updated: 2026-08-31

Education

- 08.2019 – 08.2024 **Ph.D., Earth and Planetary Science**
University of California, Berkeley, CA, USA (*Advisor: William R. Boos*)
- 08.2016 – 07.2019 **Engineer's Degree (Master's equivalent) in Applied Mathematics**
École polytechnique, Palaiseau, France
- 08.2014 – 07.2016 **Classe Préparatoire (Intensive Program in Mathematics and Physics)**
Lycée Sainte-Geneviève, Versailles, France

Research Experience

- 01.2025 – now **ETH Postdoctoral Fellow**
ETH Zürich, Switzerland
Extreme rainfall seasons in Earth's tropics
- 08.2019 – 08.2024 **Graduate Student Researcher**
University of California, Berkeley, CA, USA
Orographic precipitation in Earth's tropics
- 06.2023 – 08.2023 **Research Fellow**
Woods Hole Oceanographic Institution, Woods Hole, MA, USA
Simple models of superrotation in planetary atmospheres
- 03.2019 – 07.2019 **Master Thesis Student**
Inria Paris, France
Mathematical modeling of the human liver

Teaching Experience

- 05.2026 **Guest Lecturer**
ETH Zürich
Mesoscale Atmospheric Systems, 32 students
- 08.2022 – 12.2022 **Graduate Student Instructor**
University of California, Berkeley
ME106: Fluid Mechanics, 140 students
- 08.2020 – 12.2020 **Graduate Student Instructor**
University of California, Berkeley
GEOG40: Introduction to Earth System Science, 60 students
- 09.2017 – 06.2018 **Recitation & Tutorial Instructor**
Lycée Sainte-Geneviève
Undgraduate Mathematics, 48 students

Student supervision

- 10.2025 – 04.2026 Alexandra Smirnova, *Understanding Properties of Equatorial Waves using Simple Parameterizations of Convective Clouds*, Master Thesis.
- 09.2023 – 08.2024 Isha Khandwala, *Observational characterization of thermally-forced orographic convection in Colorado during the SAIL campaign*, Bachelor research project.

Grants, Fellowships, & Awards

Grants & Fellowships

2025 – 2026	ETH Fellow , 2-year postdoctoral fellowship (Awarded resources: CHF 237,400)
2023	Geophysical Fluid Dynamics Fellow , Woods Hole Oceanographic Institution (Awarded resources: \$9,393)
2021	H2H8 Graduate Research Grant (Awarded resources: \$10,000)

Awards

2026	ECMWF Code for Earth developer , AI Energy challenge
2025	Weather and Climate Dynamics Highlight Paper for Nicolas & Boos, 2025
2024	Louderback Award , UC Berkeley Earth and Planetary Science Department
2023	Best Student Author Award , Geophysical Journal International
2022	2nd Place Student Oral Presentation , AMS 20th Conference on Mountain Meteorology
2022	Outstanding Student Presentation Award , AGU Fall Meeting 2021

Outreach Activities

08.2026	Strategy planner & Weather forecaster 69th Coupe Aéronautique Gordon Bennett <i>Advising the SUI-2 team for the 2026 gas balloon world championships.</i>
03.2023	Convener & Presenter UC Berkeley Earth Sciences Day, Berkeley, CA, USA <i>Introducing Earth Sciences to undergraduates with limited exposure to physical sciences.</i>
09.2023	Presenter PubScience, Albany, CA, USA <i>Communicating climate science to the SF bay community in local pubs.</i>

Service

2022 – now	Journal Reviewer Geophysical Research Letters, International Journal of Climatology, Journal of Advances in Modeling Earth Systems, Communications Earth & Environment, Quarterly Journal of the Royal Meteorological Society
07.2026	Proposal Reviewer U.S. National Science Foundation

Refereed Publications

11. Vallis, G. K., Matilsky, L. I., and **Nicolas, Q.** (2026). Jets and superrotation in deep and shallow planetary atmospheres. *Philosophical Transactions of the Royal Society A*, accepted.
10. **Nicolas, Q.**, and Hotz, B. (2026). Dry and moist convective upper bounds for near-surface temperatures. *Weather and Climate Dynamics* 7, 843–856.
9. **Nicolas, Q.**, and Vallis, G. K. (2026). Mechanisms of superrotation in slowly rotating and tidally locked planets. *The Planetary Science Journal* 7, 98.
8. **Nicolas, Q.**, and Boos, W. R. (2025). Sensitivity of tropical orographic precipitation to wind speed with implications for future projections. *Weather and Climate Dynamics* 6, 231–244.
7. **Nicolas, Q.**, and Boos, W. R. (2024). Understanding the spatiotemporal variability of tropical orographic rainfall using convective plume buoyancy. *Journal of Climate* 37, 1737–1757.
6. **Nicolas, Q.**, and Buffett, B. (2023). Excitation of high-latitude MAC waves in Earth’s core. *Geophysical Journal International* 233, 1961–1973.
5. **Nicolas, Q.**, and Boos, W. R. (2022). A theory for the response of tropical moist convection to mechanical orographic forcing. *Journal of the Atmospheric Sciences* 79, 1761–1779.

4. Ramesh, N., **Nicolas, Q.**, and Boos, W. R. (2021). The globally coherent pattern of autumn monsoon precipitation. *Journal of Climate* 34, 5687–5705.
3. Golse, N., Joly, F., Combari, P., Lewin, M., **Nicolas, Q.**, Audebert, C., Samuel, D., Allard, M.-A., Sa Cunha, A., Castaing, D., Cherqui, D., Adam, R., Vibert, E., and Vignon-Clementel, I. E. (2021). Predicting the risk of post-hepatectomy portal hypertension using a digital twin: a clinical proof of concept. *Journal of Hepatology* 74, 661–669.
2. Dousse, D., Vibert, E., **Nicolas, Q.**, Terasawa, M., Cano, L., Allard, M.-A., Salloum, C., Ciacio, O., Pittau, G., Sa Cunha, A., Cherqui, D., Adam, R., Samuel, D., Vignon-Clementel, I., and Golse, N. (2020). Indocyanine green fluorescence imaging to predict graft survival after orthotopic liver transplantation: a pilot study. *Liver Transplantation* 26, 1263–1274.
1. Golse, N., Joly, F., **Nicolas, Q.**, Vibert, E., Line, P.-D., and Vignon-Clementel, I. (2020). Partial orthotopic liver transplantation in combination with two-stage hepatectomy: a proof-of-concept explained by mathematical modelling. *Clinical Biomechanics* 73, 195–200.

Presentations

Invited talks

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| 06.2026 | Land-Climate Workshop, University of St. Andrews, <i>Dry and moist upper bounds for extreme surface temperatures</i> |
| 06.2026 | Sorbonne Université, <i>Dry and moist upper bounds for extreme surface temperatures</i> |
| 01.2024 | Sorbonne Université, <i>A quasiequilibrium view of tropical orographic precipitation</i> |
| 12.2023 | École Normale Supérieure, <i>A quasiequilibrium view of tropical orographic precipitation</i> |
| 12.2022 | AGU Fall meeting 2022, <i>Orographic precipitation in the tropics and its sensitivity to climate change</i> |

Contributed talks

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| 05.2026 | EGU General Assembly 2026, <i>Dry and moist convective upper bounds for extreme surface temperatures</i> |
| 05.2025 | EGU General Assembly 2025, <i>Sensitivity of tropical orographic precipitation to wind speed with implications for future projections</i> |
| 12.2023 | AGU Fall Meeting 2023, <i>Convectively coupled mountain waves and the sensitivity of orographic precipitation to warming</i> |
| 12.2022 | AGU Fall Meeting 2022, <i>Understanding the spatio-temporal variability of tropical orographic rainfall using convective plume buoyancy</i> |
| 12.2022 | AGU Fall Meeting 2022, <i>Excitation of high-latitude MAC waves in Earth's core</i> |
| 06.2022 | AMS 20th Conference on Mountain Meteorology, <i>A theory for the response of tropical moist convection to mechanical forcing</i> |
| 06.2022 | AMS 23rd Conference on Atmospheric Fluid Dynamics, <i>A theory for the response of tropical moist convection to mechanical forcing</i> (remote) |
| 12.2021 | AGU Fall Meeting 2021, <i>A theory for the response of tropical moist convection to mechanical forcing</i> (remote) |

Other Professional Experience

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| 06.2018 – 08.2018 | Commissioning Engineer Intern
AREVA NP – OL3 Nuclear Power Plant, Olkiluoto, Finland |
| 10.2016 – 04.2017 | Officer Cadet
French Navy (Frigate <i>Floréal</i>), Réunion island |

Skills & Additional Information

Programming languages: Python, C/C++, some experience in Fortran & Matlab.

Programming tools: Atmospheric & oceanic circulation models (WRF, SAM, MITgcm), various data analysis packages (e.g. pandas, xarray), parallel computing tools (MPI, CUDA, OpenMP, dask). Experienced with Unix-based operating systems.

Languages spoken: French (native), English (fluent), Spanish (B2), German (B1/B2)