

Curriculum Vitae: Eliza Harris

Personal Information

Date of birth	05.08.1987 (Melbourne, Australia)
Family status	Married; two children (Luisa: 16.04.15 and Antonia: 18.09.17)
Nationality	Australian and British
Languages	English (native), German (fluent), French (basic)
Affiliation	University of Bern, Climate and Environmental Physics
Website	https://climatehomes.unibe.ch/~harris/
Researcher ID	https://orcid.org/0000-0002-7102-8305

Research Interests

- Development, optimization and implementation of complex methodological, data analysis and modelling techniques for novel and challenging data streams
- Use of isotopic composition to identify sources, sinks and chemistry of trace gases and aerosols at the interface between biosphere and atmosphere
- Greenhouse gas emission and consumption processes in a changing global climate

Employment history

Associate Professor and Director of the HFSJG, University of Bern, Switzerland
September 2024 - (1.0 FTE)

Senior Scientist, Swiss Data Science Centre, ETH Zürich, Switzerland
March 2021 - August 2024 (0.80 FTE; 0.9 FTE since October 2022)

Postdoctoral Research Associate, Department of Ecology, University of Innsbruck, Austria
February 2017 - February 2023 (0.85 FTE to March 2022; 0.25 FTE subsequently)

Postdoctoral Fellow, Marie Curie COFUND program, Empa, Switzerland
October 2013 - February 2017 (0.9 FTE)

Postdoctoral Research Associate, Massachusetts Institute of Technology, USA
September 2012 - September 2013 (1.0 FTE)

Education

Habilitation in Biogeosciences

University of Innsbruck, Austria: 09.2020 - 11.2021

Venia Legendi granted by the Department of Environmental Systems Science at ETHZ, 01.08.2022

Doctoral degree, summa cum laude (Supervisor: Dr. Peter Hoppe)

Max Planck Institute for Chemistry / Johannes Gutenberg University, Germany: 2009 - 2012

Thesis title: *Using sulfur isotope fractionation to understand atmospheric oxidation of SO₂*

Bachelor degree with Honours in Antarctic Science, first class

University of Tasmania, Australia: 2005 - 2008

Thesis title: *Weathering processes and remediation options for polychlorinated biphenyl and polycyclic aromatic hydrocarbon contamination at Kinnvika Station, Svalbard*

Recent grants and funding

- **World Food System Centre (ETHZ)/Fenaco research program on Smart Sustainable Farming (Co-PI)** for ‘Chemiresistive sensors for effective Agricultural N management and N₂O mitigation’ (199,876 CHF), 2024-2026
- **RUFORUM-GRA Graduate Research Grants (co-applicant)** for ‘Building climate resilient mixed crop-livestock and agro-pastoral farming systems in Elgeyo Marakwet County through agroecology: Quantification, reduction and community sensitization on greenhouse gas emissions’ (80,000 USD), 2024-2025
- **SNF Scientific Exchange Grant (PI)** for ‘State-space modelling for a unified understanding of N₂O emissions across soil and aqueous systems’ (IZSEZO_211196, 11,367 CHF) to visit *Lincoln University*, New Zealand, 11-12.2022
- **SNF project grant (PI)** for ‘Combining measurements, modelling and machine learning to improve N₂O accounting for sustainable agricultural development in sub-Saharan Africa’ (200021_207348, 660,564 CHF), 2022-2026
- **Austrian Science Foundation (FWF) stand-alone project (PI)** co-financed by the Land Tirol ‘NitroTrace: Using isotopes to trace the effects of climate extremes on N₂O emissions and the nitrogen cycle in managed grasslands’ (363,454 Euro), 2018-2022

Recent publications

- Boyd Pernov, J., **Harris, E.**, Volpi, M., Baumgartner, T., Hohermuth, B., Henne, S., Aeberhard, W., Becagli, S., Quinn, P. K., Traversi, R., Upchurch, L. M. and Schmale, J. (2024) *Pan-Arctic methanesulfonic acid aerosol: source regions, atmospheric drivers, and future projections*, npj Climate and Atmospheric Science, doi: 10.1038/s41612-024-00712-3
- **Harris, E.**, Fischer, P., Lewicki, M., Lewicka-Szczebak, D., Harris, S.J. and Perez-Cruz, F. (2023) *Technical Note: TimeFRAME - A Bayesian mixing model to unravel isotopic data and quantify trace gas production and consumption pathways for timeseries data*, Biogeosciences, doi: 10.5194/bg-21-3641-2024.
- Daly, E., Hernandez-Ramirez, G., Congreves, K.A., Clough, T., Voigt, C., **Harris, E.** and Ruser, R. (2023) *Soil organic nitrogen priming to nitrous oxide: a synthesis*, Soil Biology and Biochemistry, doi: 10.1016/j.soilbio.2023.109254.
- Renfrew, D., Vasilaki, V., Nika, E., **Harris, E.**, and Katsou, E. (2023) *Tracing wastewater resources: Unravelling the circularity of waste using source, destination, and quality analysis*, Water Research, doi: 10.1016/j.watres.2023.120901.
- **Harris, E.**, Gasser, L., Volpi, M., Perez-Cruz, F., Bjelic, S., and Obozinski, G. (2023) *Harnessing data science to improve molecular structure elucidation from tandem mass spectrometry*, Structural Chemistry, doi: 10.1007/s11224-023-02192-2
- **Harris, E.**, Yu, L., Mohn, J., Henne, S., Bai, E., Barthel, M., Bauters, M., Boeckx, P., Dorich, C., Farrell, M., Krummel, P. B., Loh, Z. M., Reichstein, M., Six, J., Steinbacher, M., Wells, N. S., Bahn, M. and Rayner, P. (2022) *Warming and redistribution of nitrogen inputs drive an increase in terrestrial nitrous oxide emission factor*, Nature Communications, 13, doi: 10.1038/s41467-022-32001-z.