

Norman J. Steinert

Postdoctoral researcher

✉ nste@norceresearch.no

@ <https://normansteinert.github.io>

👤 Profile

I am an open-minded and enthusiastic Postdoctoral researcher at the Norwegian Research Centre in Bergen, Norway. My work focuses on the investigation of emission overshoot scenarios and Earth system reversibility, as well as the land component in the frame of the global carbon cycle. This includes work on the permafrost-carbon feedback and the biosphere in climate change projections of current generation climate models and corresponding dynamic ecosystem stability. Further, my research interests lie in the analysis of land-atmosphere and land-climate interactions, including thermodynamic and hydrological processes at the land surface. I extend my research to investigating high-latitude ecosystems as potential tipping elements under changing warming conditions.

* Links

[ORCID](#)

[Website](#)

[GoogleScholar](#)

[Research Gate](#)

🎓 Education

PhD in Physics, “Cum Laude”, Complutense University of Madrid, <i>Madrid, Spain</i>	Oct 2017 – Dec 2021
Master of Science in Meteorology, Free University of Berlin, <i>Berlin, Germany</i>	Oct 2013 – Jul 2017
Bachelor of Science in Meteorology, Free University of Berlin, <i>Berlin, Germany</i>	Oct 2010 - Sept 2013

📁 Employment

Postdoc, NORCE - Norwegian Research Centre, <i>Bergen, Norway</i>	Jan 2022 – present
Research assistant, Global forecasters - CIEMAT, <i>Madrid, Spain</i>	Jun 2017 – Sept 2017
Intern, Reuniwatt, <i>Saint-Pierre, La Reunion, France</i>	Oct 2016 – Apr 2017
Student assistant, Max Planck Institute for Meteorology, <i>Hamburg, Germany</i>	Mar 2015 – Sept 2016
Intern, Alfred-Wegener-Institute, <i>Bremerhaven, Germany</i>	Feb 2014 – Apr 2014
Student assistant, FUB - Institute for Meteorology, <i>Berlin, Germany</i>	Nov 2013 – Jan 2015
Intern, ETH - Institute for Atmospheric and Climate Science, <i>Zurich, Switzerland</i>	Jul 2012 – Sept 2012
Student assistant, German Research Center for Geosciences, <i>Potsdam, Germany</i>	Jun 2012 – Nov 2013

Skills

Analytical Thinking



Coding and Scripting



Organization



Climate Modeling



Creative Mindset



Quick Learner



Languages

German



Spanish



English



Norwegian



Mobility

Research stay, *4 months, 2022-2023*, UK Met Office and University of Exeter, Exeter, UK

Research stay, *1 months, 2022*, Utrecht University, *Utrecht, The Netherlands*

Research stay, *3 months, 2021-2022*, Max Planck Institute for Meteorology, *Hamburg, Germany*

Supervision

Callum Christie, Master's project, *2023*, University of Exeter, Exeter, UK

Nagore Meabe Yanguas, Master's thesis, *2023*, Complutense University of Madrid, Spain

Alejandro Campos Saz, Master's thesis, *2022*, Complutense University of Madrid, Spain

Francisco Javier Pérez Pérez, Master's thesis, *2021*, Complutense University of Madrid, Spain

Organization of Meetings

EUCOP6 - 6th European Conference on Permafrost, Session convener: "Modeling of permafrost-climate feedbacks in future scenarios", *2023*, Puigcerdà, Spain.

Publications

Nitzbon J., T. Schneider von Deimling, S. E. Chadburn, G. Grosse, S. Laboor, H. Lee, **N. J. Steinert**, S. M. Stuenzi, S. Westermann, M. Langer: Is Arctic Permafrost a Climate Tipping Element? – Potentials for Rapid Permafrost Loss Across Spatial Scales, To be submitted.

Steinert N, J., E. Burke, J. Schwinger, B. Zhu, T. Gasser, G. Munday, C. Mathison, H. Lee: Quantifying permafrost carbon loss under zero and negative emission pathways, To be submitted

Steinert N, J., J. Schwinger, Robin Chadwick, J.-S. Kug, and H. Lee: Irreversible seasonal changes of surface water availability after temperature overshoot, To be submitted.

García-Pereira, F., J. F. González-Rouco, C. Melo-Aguilar, **N. Steinert**, P. De-Vrese, J. H. Jungclaus, S. Lorenz, S. Hagemann, E. García-Bustamante: Assessment of land energy uptake in the industrial period from observation and simulation-based products, To be submitted.

Martin, M., ... **N. J. Steinert**, ..., et al.: *Ten new insights in climate science 2023*, Submitted to **Global Sustainability**.

García-Pereira, F., J. F. González-Rouco, T. Schmid, C. Melo-Aguilar, C. Vegas-Cañas, **N. J. Steinert**, P. J. Roldán-Gómez, F. J. Cuesta-Valero, A. García-García, H. Beltrami, P. de Vrese: *Thermodynamic and hydrological drivers of the subsurface thermal regime in Central Spain*, **SOIL Discussion**, <https://doi.org/10.5194/egusphere-2023-462>

de Vrese, P., G. Georgievski, J. F. Gonzalez Rouco, D. Notz, T. Stacke, **N. J. Steinert**, S. Wilkenskjeld, and V. Brovkin: *Representation of soil hydrology in permafrost regions may explain large part of inter-model spread in simulated Arctic and subarctic climate*, **The Cryosphere**, 17(5), 2095–2118, <https://doi.org/10.5194/tc-17-2095-2023>.

Schwinger, J., A. Asaadi, **N. J. Steinert**, H. Lee: *Emit now, mitigate later? Earth system reversibility under overshoots of different magnitude and duration*, **Earth System Dynamics**, 13, 1641–1665, 2022.

Martin, M., ... **N. J. Steinert**, ..., et al.: *Ten new insights in climate science 2022*, **Global Sustainability**, 5, e20, 1–20, 2022.

Melo-Aguilar, C. A., J. F., González-Rouco, **N. J., Steinert**, H., Beltrami, F., Cuesta-Valero, A., García-García, F., García-Pereira, E., García-Bustamante, P. Roldán-Gómez, T. Schmid and J. Navarro: *Near-surface soil thermal regime and land–air temperature coupling: a case study over Spain*, **Int. J. Climatol.**, 2022.

González-Rouco, J. F., **Steinert, N. J.**, García-Bustamante, E., Hagemann, S., De-Vrese, P., Jungclaus, J. H., Lorenz, S. J, Melo-Aguilar, C., and: *Increasing the depth of a Land Surface Model: Part I: Impacts on the Subsurface Thermal Regime and Energy Storage.*, **J. Hydrometeorol.**, 22(12), 3211-3230, 2021.

Steinert, N. J., González-Rouco, J. F., De-Vrese, P., García-Bustamante, E., Hagemann, S., Melo-Aguilar, C., Jungclaus, J. H., and Lorenz, S. J.: *Increasing the depth of a Land Surface Model: Part II: Temperature*

Sensitivity to Improved Subsurface Thermodynamics and Associated Permafrost Response., J. Hydrometeorol., 22(12), 3231-3254, 2021.

Steinert, N. J., González-Rouco, J. F., García-Bustamante, E., Melo-Aguilar, C., García-Pereira, F., and Alexeev, V.: *Agreement of Analytical and Simulation-Based Estimates of the Required Land Depth in Climate Models*, **Geophys. Res. Lett.**, 48(20), e2021GRL094273, 2021.

Melo-Aguilar, C., González-Rouco, J. F., García-Bustamante, E., **Steinert, N.**, Jungclaus, J. H., Navarro, J., and Roldán-Gómez, P. J.: *Methodological and physical biases in global to subcontinental borehole temperature reconstructions: an assessment from a pseudo-proxy perspective*, **Clim. Past**, 16, 453–474, <https://doi.org/10.5194/cp-16-453-2020>, 2020.

Melo-Aguilar, C., González-Rouco, J. F., García-Bustamante, E., Navarro-Montesinos, J., and **Steinert, N.**: *Influence of radiative forcing factors on ground–air temperature coupling during the last millennium: implications for borehole climatology*, **Clim. Past**, 14, 1583–1606, <https://doi.org/10.5194/cp-14-1583-2018>, 2018.

🏆 Awards and Grants

- **Best PYRN ECS Poster Presentation Award:** Runner-up
EUCOP6 European Conference on Permafrost, Puigcerdà, Spain, June 2023
- **PhD Thesis Award**, Spanish National Research Council - most relevant theses in 2021
Spanish National Research Council (CSIC), Madrid, Spain, February 2023
- **Fast Track Initiative Grant – LICORICE project** (Effects of climate-driven Land-surface Integrity Changes in permafrost Regions on northward expanding agriculture)
Bjerknes Centre for Climate Research, Bergen, Norway, January 2023
- **RCN Researcher Mobility Grant**
Research Council of Norway, NORCE Norwegian Research Centre, Bergen, Norway, December 2022
- **Utrecht Network Young Researchers Grant**
Utrecht Network, April 2021
- **Top 3 presentations at PhDay Physics Complutense 2019**
Complutense University Madrid, Spain, November 2019
- **Ernst-Reuter-Gesellschaft Travel Grant**
Free University of Berlin, Germany, August 2016