Curriculum Vitae

Marius Winkler

Hamburg, Deutschland

marius.winkler@mpimet.mpg.de

`https://mariuswinkler.github.io/`

Education

Ph.D.   Earth System Sciences, 2021–2025,
Max-Planck-Institut für Meteorologie and
Universität Hamburg, Germany

Dissertation: "Boundary Layer Wind Balances and their Influence on Equatorial Sea-Surface Temperatures"
Advisors: Bjorn Stevens (MPI-M), Juan Pedro Mellado González (UHH)
Emphases: Air-Sea Interaction, Surface Winds, Momentum Analysis, Equatorial Cold Tongue, High-Resolution Modelling (ICON), Climate Physics

M.Sc.   M.Sc. Theoretical Physics, 2018–2020,
École Normale Supérieure de Paris, France and
Technische Universität Berlin, Germany

Thesis: "Phase Response Approaches to Neural Activity Models with Delay"
Advisors: Boris Gutkin (ENS Paris), Eckehard Schöll (TU Berlin)
Emphases: Neuroscience, Nonlinear Dynamics and Control, Colloidal Systems: Theory and Simulation, Advanced Quantum Mechanics

B.Sc.   B.Sc. Physics, 2014–2018,
Technische Universität Berlin, Germany and
École Normale Supérieure de Lyon, France

Thesis: "Synchronization of chimera states in multiplex networks of logistic maps"
Advisor: Eckehard Schöll (TU Berlin)
Emphases: Theoretical and Experimental Physics

Master Craftsman in Bespoke Shoemaking, 2022–2026,
Mariolino Schuhe, Bosau, Germany

Apprenticeship as Journeyman Bespoke Shoemaker, 2012–2014,
Schuhmacherei Hans-Joachim Vauk, Neumünster, Germany

Professional Experience

Postdoc   Max-Planck-Institut für Meteorologie, Hamburg
02/2025–06/2025

Field Scientist Barbados Cloud Observatory, Deebles Point, Barbados
September 2024
Coordinated atmospheric observations and led the radiosonde launch team during the international ORCESTRA campaign on Barbados. Responsibilities included mission planning, team coordination, radiosonde preparation and launches, and postprocessing of collected data to ensure high data quality and scientific usability.

Science Communicator
Social Media Team, Max-Planck-Institut für Meteorologie, Hamburg
08/2021–06/2025
Voluntary member of the institute's social media team within the communications department. Responsibilities include writing and editing posts, developing the editorial plan, coordinating with scientists and external partners, and curating visual content. Temporarily led the team and managed editorial meetings during periods of absence. Ensured content adhered to the institute's communication goals, corporate design, and copyright standards.

Teaching Assistant
Experimental physics lecture given by Prof. Dr. Dähne
01/2018–09/2019

Journeyman   Schuhmacherei Hans-Joachim Vauk,
09/2012–08/2014

Scientific Contributions

Published

- **M. Winkler** (2025a): *Uncovering the Drivers of the Equatorial Ocean Surface Winds*, *Reports on Earth System Science*, PhD Thesis: Winkler, M.

- **M. Winkler**, T. Kölling, J. P. Mellado, and B. Stevens (2025b): *Uncovering the Drivers of the Equatorial Ocean Surface Winds*, *Quarterly Journal of the Royal Meteorological Society*, e4998. doi:10.1002/qj.4998

- H. Segura, X. Pedruzo-Bagazgoitia, P. Weiss, S. K. Müller, T. Rackow, J. Lee, E. Dolores-Tesillos, I. Benedict, M. Aengenheyster, R. Aguridan, **M. Winkler**, et al. (2025): *nextGEMS: Entering the Era of Kilometer-Scale Earth System Modeling*, *Geoscientific Model Development*, 18, 7735–7761. doi:10.5194/gmd-18-7735-2025

- H. Segura, C. Bayley, R. Fiévet, H. Glöckner, M. Günther, L. Kluft, A. K. Naumann, S. Ortega, D. S. Praturi, M. Rixen, H. Schmidt, **M. Winkler**, C. Hohenegger, and B. Stevens (2025): *A Single Tropical Rainbelt in Global Storm-Resolving Models: The Role of Surface Heat Fluxes Over the Warm Pool*, *Journal of Advances in Modeling Earth Systems (JAMES)*. doi:10.1029/2024MS004897

- C. Hohenegger, P. Korn, L. Linardakis, R. Redler, R. Schnur, P. Adamidis, J. Bao, S. Bastin, M. Behravesh, M. Bergemann, J. Biercamp, H. Bockelmann, R. Brokopf, N. Brüggemann, L. Casaroli, F. Chegini, G. Datseris, M. Esch, G. George, M. Giorgetta, O. Gutjahr, H. Haak, M. Hanke, T. Ilyina, T. Jahns, J. Jungclaus, M. Kern, D. Klocke, L. Kluft, T. Kölling, L. Kornblueh, S. Kosukhin, C. Kroll, J. Lee, T. Mauritsen, C. Mehlmann, T. Mieslinger, A. K. Naumann, L. Paccini, A. Peinado, D. S. Praturi, D. Putrasahan, S. Rast, T. Riddick, N. Roeber, H. Schmidt, U. Schulzweida, F. Schütte, H. Segura, R. Shevchenko, V. Singh, M. Specht, C. C. Stephan, J.-S. von Storch, R. Vogel, C. Wengel, **M. Winkler**, F. Ziemen, J. Marotzke, and B. Stevens (2023): *ICON-Sapphire: Simulating the Components of the Earth System and Their Interactions at Kilometer and Sub-Kilometer Scales*, *Geoscientific Model Development*, 16, 779–811. doi:10.5194/gmd-16-779-2023

- **M. Winkler**, G. Dumont, E. Schöll, and B. Gutkin (2021): *Phase Response Approaches to Neural Activity Models with Distributed Delay*, *Biological Cybernetics*, December 2021. doi:10.1007/s00422-021-00910-9

- **M. Winkler**, J. Sawicki, I. Omelchenko, A. Zakharova, V. Anishchenko, and E. Schöll (2019): *Relay Synchronization in Multiplex Networks of Discrete Maps*, *Europhysics Letters*, 126(5), 50004. doi:10.1209/0295-5075/126/50004

Submitted

- **M. Winkler**, M. Rixen, F. Beucher, F. Couvreux, C. C. Nam, P. Peyrillé, H. Schmidt, H. Segura, K.-H. Wieners, E. Alkilani-Brown, A. A. Coly, G. Biagioli, M. M. Bell, E. Brito, E. Chauvin, J. Capo, D. Colón-Burgos, A. Dawes, J. C. da Luz, Z. Demiralay, V. Douet, V. Ducastin, C. Dufaux, J.-L. Dufresne, F. Favot, T. Fiolleau, E. Fons, G. George, H. M. Glöckner, S. Gonçalves, L. Gouttesoulard, L. Hayo, W.-T. Hsiao, S. Kennison, M. Kopelman, T.-Y. Lee, E. Le Gall, M. Lovato, E. Luschen, N. Maury, B. McKim, L. Netz, D. Ousseynou, K. Peters-von Gehlen, C. Pope, B. Poujol, N. Rivera Maldonado, N. Robbins-Blanch, N. Rochetin, D. Rowe, P. Romero Jure, J. H. Ruppert Jr., J. Segura Bermudez, J. C. Starr, M. Stelzner,

C. Stoll, M. Syrett, A. Tekoe, J. Trules, C. Welty, D. Klocke, R. Vogel, S. Bony, A. A. Wing, and B. Stevens (2025c): *Atmospheric Radiosoundings from Ship and Island Platforms during the 2024 ORCESTRA Field Campaign*

In Preparation

- **M. Winkler**, J. P. Mellado, and B. Stevens (2025d): *On the Role of the Surface Flux Parametrization in Tropical Convection under Low Wind Speed Regimes*

- H. Segura, A. Peinado, S. Bastin, R. Shevchenko, **M. Winkler**, D. S. Praturi, and I. Dragaud (2025e): *Precipitation Accelerating Ocean Currents in a km-Scale Earth System Model*

Talks

- Uncovering the Drivers of the Equatorial Ocean Surface Winds, Ocean Sciences Meeting, New Orleans, USA, February 18–23, 2024

- What Drives Equatorial Boundary Layer Winds?, Pan-GASS, Monterey, USA, July 25–29, 2022

Posters

- *Storm-Resolving Model ICON at the Air-Sea Interface: Insights into Momentum Dynamics and Parameterization Challenges*, EGU, Vienna, Austria, April 28–May 02, 2025

- From Sea Surface Temperature to Equatorial Surface Winds, CFMIP-GASS Conference, Paris, France, July 09–13, 2023

- *Phase Response Approaches to Neural Activity Models with Delay*, Dynamics Days Digital, Berlin (virtual), August 24–27, 2020

- *Relaissynchronisation in Multiplex-Netzwerken unter Einfluss der logistischen Gleichung*, DPG-Frühjahrstagung, Regensburg, March 31–April 05, 2019

- *Synchronization of Chimera States in Multiplex Networks of Logistic Maps*, Bachelor-Symposium, Young German Physical Society, Berlin, November 21, 2018

- *Synchronization of Chimera States in Multiplex Networks of Logistic Maps*, International Conference on Control of Self-Organizing Nonlinear Systems, Rostock, September 09–13, 2018

Hackathons and Workshops

- Hackathon: km-Scale Hackathon 2025 Hamburg node, Germany, May 12–16, 2025

- Hackathon: NextGEMS C4, Hamburg, Germany, March 4–8, 2024

- Hackathon: NextGEMS C3, Madrid, Spain, May 29–June 2, 2023

- Hackathon: NextGEMS C2, Vienna, Austria, June 28–July 3, 2022

- Hackathon: NextGEMS C1, Berlin, Germany, October 19–22, 2021

- Hackathon: DYAMOND, Hamburg, Germany, July 14–16, 2021

- Workshop: Dynamics of Coupled Oscillator Systems, Weierstrass Institute for Applied Analysis and Stochastics, Berlin, November 19–21, 2018

Skills

Programming

- **Proficient:** Python, Xarray, Numpy, Scipy

- **Experienced:** CDO, Linux, Mathematica, LaTeX, MS Office

- **Familiar:** Fortran, Julia, C++/C

Languages

- **German:** C2

- **English, French:** C1

- **Spanish:** A2

- **Latin:** Proficiency Certificate

Awards

- ERASMUS+ Scholarship, 10/2019–03/2020

- PROMOS Scholarship (DAAD), 04/2020–06/2020

- ERASMUS+ Scholarship, 09/2016–08/2017