

CURRICULUM VITAE

Prof Dr Peter Knippertz

Professor of Meteorology

Institute of Meteorology and Climate Research
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HIGHLIGHTS

- 27 years of research experience at seven institutions in four countries
- Broad research portfolio in dynamical meteorology with a focus on the tropics
- >175 peer-reviewed journal publications (~8300 citations, h-index 52*)
- Experience as leader of large collaborative research (EU FP7, DFG SFB, HGF)
- Prestigious fellowships and awards (e.g. ERC Starting Grant, Emmy Noether)
- Editorial roles for four international journals and one comprehensive book
- More than 60 invited presentations at conferences and institutional seminars
- Supervision of >50 PhD students and 20 Postdocs
- Reviewer of >130 papers and >50 research proposals
- 20 years of successful teaching and student supervision
- 5 years of experience in teaching coordination and curriculum design

WORK EXPERIENCE

since 2025	Co-speaker , Topic "Understanding and Predicting the Climate System: Atmosphere and Land", Helmholtz program "Changing Earth"
since 2021	Head of Institute , Institute of Meteorology and Climate Research Troposphere Research, Karlsruhe Institute of Technology, Germany
2020	Research Sabbatical , Monash University, Melbourne, Australia
since 2013	Professor of Meteorology , Institute of Meteorology and Climate Research, Karlsruhe Institute of Technology, Germany
2012–2013	Professor of Meteorology , School of Earth & Environment, University of Leeds, UK
2011–2012	Reader in Meteorology , School of Earth & Environment, University of Leeds, UK
2009–2011	Lecturer in Dynamical Meteorology , School of Earth & Environment, University of Leeds, UK
2005–2009	Leader of a German Research Foundation (DFG) funded Emmy Noether Independent Junior Research Group , Institute for Atmospheric Physics, University of Mainz, Germany

* ISI Web of Science as of 18 January 2025

- 2005 **Researcher**, Institute of Geophysics and Meteorology, University of Cologne, Germany
- 2003–2005 **German Research Foundation (DFG) Research Fellow**, Department of Atmospheric & Oceanic Sciences, University of Wisconsin–Madison, USA, hosted by Prof Jonathan E. Martin and Prof emer. Stefan L. Hastenrath
- 1999–2003 **Research Assistant**, Institute of Geophysics and Meteorology, University of Cologne, Germany (during my PhD studies)

EDUCATION

- May 2008 **Habilitation in Meteorology, University of Mainz, Germany**
Subject: *Tropical–extratropical interactions and their influence on clouds, precipitation, moisture transports and dust emissions*
Mentor: Prof H. Wernli
- 1999–2003 **PhD studies in Meteorology, Institute of Geophysics and Meteorology, University of Cologne, Germany**
Subject: *Precipitation variability in northwest Africa and the relation to the large-scale atmospheric circulation and to the synoptic activity*
Supervisor: Prof P. Speth, Mark: “summa cum laude”
- May 1999 **Diploma in Meteorology, Institute of Geophysics and Meteorology, University of Cologne, Germany**
Subject: *Cyclone activity and surface wind over the North Atlantic and Europe in a transient GHG scenario experiment*
Supervisor: Prof P. Speth, Mark: “sehr gut” (best mark)
- 1997–1999 **Graduate studies in Meteorology**, University of Cologne, Germany
- 1996–1997 **Visiting Student**, Department of Meteorology, University of Reading, UK
- 1993–1995 **Undergraduate studies in Meteorology**, University of Cologne, Germany

MAIN GRANTS & FELLOWSHIPS

- 2025–2026 **Too much and yet not enough water: smart management in times of hydrological extremes**, HGF SynCom Projects 2024*2025, PI (50k€ total funding)
- 2024–2027 **Entwicklung und Förderung KI-basierter Kurzfrist-Hochwasservorhersagemodelle für Kleine Einzugsgebiete in Deutschland (KI-HopE-De)**, BMBF, Co-I (1.8M€ total funding)
- 2024–2026 **Strengthening predictions of hydro-meteorological extremes through collaborative data harmonization and consistent benchmark datasets**, KIT Future Fields, Co-I (325k€ total funding)
- 2024–2027 **SPAtial ensemble post-pRoCessing using generative Machine Learning (SPARC-ML)**, German Weather Service (DWD) Extramural Research, Co-I (299k€ total funding)
- 2023–2027 **Co-design of a hydro-meteorological information system for sustainable water resources management in southern Africa (CO-HYDIM-SA)**, German Federal Ministry of Education and Research, Co-I (1.2M€ total funding for initial and main phases)
- 2023–2027 **Unterstützung der Implementierung, der Verwertung und des Austausches von Forschungswissen, wissenschaftlichen Dienstleistungen und Technologien für das BMBF-Programm**

- WASA zur Verbesserung der Wassersicherheit in Sub-Sahara (WASANet)**, German Federal Ministry of Education and Research, Co-I (830k€ total funding)
- 2021–2024 **Current and future risks of urban and rural flooding in West Africa – An integrated analysis and eco-system-based solutions (FURIFLOOD)**, German Federal Ministry of Education and Research, Co-I (1.4M€ total funding)
- 2021–2023 **A new Testbed for Exploring Machine LEarning in Atmospheric Prediction (TEEMLEAP)**, KIT Future Fields, PI (354k€ total funding)
- 2019–2022 **Dynamics, variability and bioclimatic effects of low clouds in western Central Africa (DYVALOCCA)**, German Research Foundation, Co-I (298k€)
- 2015–2024 **Waves to Weather (W2W)**, German Research Foundation Collaborative Research Centre 165, speaker for Karlsruhe (~21M€ total funding)
- 2017–2021 **Moisture Transport Pathways and Isotopologues in Water Vapour (MOTIV)**, German Research Foundation, Co-I (493k€)
- 2015–2019 **Mittelfristige Klimaprognose (MiKlip)**, German Federal Ministry of Education and Research, Co-I (13 M€ total funding)
- 2013–2018 **Dynamics-Aerosol-Chemistry-Clouds Interactions in West Africa (DACCIWA)**, EU-FP7 consortium, coordinator (8.75M€ total funding)
- 2012–2016 **Improved Seasonal Prediction of the Onset of the West African Monsoon**, UK Natural Environment Research Council (NERC) Open CASE studentship, PI (70k£)
- 2010–2015 **Desert Storms – Towards an Improved Representation of Meteorological Processes in Models of Mineral Dust Emission**, European Research Council Starting Grant, PI (1.36M€)
- 2010–2014 **A Seamless Approach to Assessing Model Uncertainties in Climate Projections of Severe European Windstorms (SEAMSEW)**, AXA Research Fund, PI (450k€)
- 2008–2012 **Upper-Level Extratropical Disturbances over the Low-Latitude North Atlantic: Generation Mechanisms and Predictability**, German Research Foundation, PI (95k€)
- 2005–2010 **Tropical–Extratropical Interactions and their Importance for Intraseasonal Variability and Extreme Events in the Tropics and Extratropics**, German Research Foundation Emmy Noether Advanced Fellowship, PI (600k€)
- 2003–2005 **Tropical–Extratropical Interactions in Northern Africa: Physical Mechanisms, Climatological Characteristics, and Importance for the Precipitation Variability in the Tropics and Subtropics**, German Research Foundation Research Fellowship, PI (65k€)

AWARDS & TRAVEL GRANTS

- 2024 **Quarterly Journal of the Royal Meteorological Society**, top downloaded article during its first 12 months of publication (Knippertz et al., 2022, The Intricacies of Identifying Equatorial Waves)
- 2021–2025 **Henriette Herz Scout** of the Alexander von Humboldt Foundation
- 2020 **Quarterly Journal Editor's Award** for 2019, Royal Meteorological Society, UK

- 2018 **Outstanding Poster Award**, 39th Conference on Hurricanes and Tropical Meteorology, Ponte Vedra, USA, American Meteorological Society, with A. Schlueter, P. Vogel, A. H. Fink and T. Gneiting
- 2013 **Outstanding Poster Award**, Annual Meeting of the European Meteorological Society, with J. Owen and T. Trzeciak
- 2006–2007 **SAMUM (SAharan Mineral dUst experiMent) field campaign**, University of Mainz Research Fund (22k€)
- 2006 **Poster Award**, 27th Conference on Hurricanes and Tropical Meteorology, Monterey, USA, American Meteorological Society, with A. H. Fink
- 2004 **Travel Grant**, World Meteorological Organization (500\$)
- 2004 **Travel Grant**, African Studies Program, University of Wisconsin, USA (300\$)

SUPERVISION OF STUDENTS AND POSTDOCS

BSc students (1, starting 2024, KIT, 1 primary, 0 secondary)

- Marie Müller (Juli 2024)

Diploma students (4, University of Mainz, all primary)

- Esther Hohberger (Sept. 2008)
- Carmen Emmel née Deutscher (Oct. 2008)
- Gregor Gläser (March 2009)
- Florian Berkes (Sept. 2010)

MSc students (3, University of Leeds, all primary)

- Adam Burwell (September 2011, primary)
- Joshua Allen (September 2011, primary)
- Ailsa Barrow (September 2012, primary)

MSc students (37, Karlsruhe Institute of Technology, 14 primary, 24 secondary)

- Peter Brugger (September 2014, secondary)
- Eirini Boleti (March 2015, secondary, external for ETH Zurich)
- Lisa Hannak (August 2015, primary)
- Pila Bossmann (December 2015, secondary)
- Jasmin Hofgärtner (December 2016, primary)
- Kathrin Leydecker (February 2017, secondary)
- Michael Maier-Gerber (February 2017, primary)
- Anna Neubauer (August 2018, primary)
- Lea Eisenstein (December 2018, primary)
- Florian Becker (March 2019, primary)
- Tanja Sauter (April 2019, secondary)
- Tanja Schittko (Mai 2019, secondary)
- Irina Solodovnik (June 2019, secondary)
- Seraphine Hauser (Juli 2019, secondary)
- Tristan Semsch (November 2019, primary)
- Kathrin Deck (November 2019, secondary)
- Freia Then (February 2020, secondary)
- Maren Glattfelder (October 2020, secondary)
- Nico Bauer (February 2022, secondary)
- Felix Krawczyk (February 2022, secondary)
- Fabian Siegmann (March 2022, secondary)
- Fabian Mockert (May 2022, secondary)
- Siyu Li (August 2023, secondary)
- Christian Sperka (February 2024, secondary)
- Nicolas Lo (March 2024, secondary)

- Judith Gerighausen (April 2024, primary)
- Fabian Chow (May 2024, secondary)
- Jasmin Haupt (May 2024, secondary)
- Yangfan Zhou (May 2024, primary)
- Dorothea Schwärzel (Juli 2024, secondary, external for Uni. Heidelberg)
- Lina Lucas (November 2024, secondary, external for Uni. Heidelberg)
- Isabel Pena Sánchez (January 2025, primary)
- Nicole Knopf (ongoing, secondary)
- Cédric Froideveaux (ongoing, primary)
- Alexander Jong (ongoing, secondary)
- Sarah Paratoni (ongoing, primary)
- Amit Sextus (ongoing, primary)

PhD students (54)

- Florian Meier (primary, 2005–2010, thesis not submitted)
- Luise Fröhlich (primary, 2006–2011, including maternity leave)
- Lars Wiegand (primary, 2008–2011)
- Arwen Twitchett (primary, 2009–2012, supervision taken over from D. Parker)
- Alex Roberts (primary, 2010–2014)
- Jennifer Pirret née Owen (primary, 2010–2014)
- Sophie Cowie (primary, 2010–2014)
- Tim Baker (primary, 2010–2015)
- Stephanie Fiedler (primary, 2011–2014)
- Rory Fitzpatrick (primary, 2012–2016)
- Marlon Maranan (secondary, 2014–2019)
- Thomas Engel (secondary, 2015–2016, not completed)
- Peter Vogel (secondary, 2015–2019)
- Andreas Schlüter (primary, 2015–2019)
- Pila Bossmann (secondary, 2015–2016, not completed)
- Enrico Di Muzio (secondary, 2015–2019)
- Joseph Njeri (secondary, 2015–2019)
- Titike Bahaga (secondary, 2015–2019)
- Alberto Caldez-Alvarez (secondary, 2015–2019)
- Philipp Zschenderlein (secondary, 2017–2020)
- Georgios Papavasileiou (secondary, 2017–2020)
- Christopher Diekmann (secondary, 2017–2021)
- Michael Maier-Gerber (secondary, 2017–2022)
- Elzina Bala (primary, 2018–2022, not completed)
- Jan Wandel (secondary, 2019–2022)
- Benedikt Schulz (secondary, 2019–2023)
- Lea Eisenstein (primary, 2019–2023)
- Maurus Borne (primary, 2019–2023)
- Seraphine Hauser (secondary, 2019–2023)
- Hyunju Jung (primary, 2019–2023)
- Simon Ageet (secondary, 2019–2023)
- Athul Rasheeda Satheesh (primary, 2020–2024)
- Raffael Aellig (secondary, 2020–2024)
- Eva-Maria Walz (secondary, 2019–2024)
- Thomas Kociok (primary, since 2017)
- Mareike Burba (primary, since 2019)
- Matthias Fischer (secondary, since 2019)
- Selina Kiefer (secondary, 2020–2024)
- Shun Yiu ("Brett") Chung (primary, since 2021)
- Hannah Meyer (secondary, 2021–2025)
- Nina Horat (primary, 2021–2025)
- Melissa Latt (primary, 2021–2025)
- Musa Ssemujju (secondary, since 2022)
- Fabian Mockert (secondary, since 2022)

- Felix Rein (primary, 2023–2025, not completed)
- Julia Thomas (primary, since 2023)
- Elias Hühn (secondary, since 2023)
- Siyu Li (primary, since 2023)
- Mathis Tonn (secondary, since 2024)
- Tobias Biegert (secondary, since 2024)
- Yiping Yu (secondary, since 2024)
- Kavil Kambrath Gokul (secondary, since 2024)
- Yukun Yang (primary, since 2024)
- Nastaran Najari (primary, since 2025)

Postdocs (20)

- Kerstin Schepanski (2009–2013)
- Jenny Davis (2010–2011)
- Tomasz Trzeciak (2010–2014)
- Bernd Heinold (2011–2012)
- Carl Gilkeson (2013)
- Bradley Jemmet-Smith (2013–2015)
- Florian Pantillon (2013–2019)
- Stephanie Fiedler (2014–2015)
- Anke Kniffka (2014–2018)
- Gregor Pante né Gläser (2014–2020)
- Roderick van der Linden (2018–2022)
- Alexander Lemburg (2020–2023)
- Beth Woodhams (2022–2024)
- Hyunju Jung (2023–2024)
- Maurus Borne (2023–2024)
- Jannik Wilhelm (2021–2024)
- Marlon Maranan (since 2019)
- Dwaipayan Chatterjee (since 2024)
- Ehsan Sharifi (since 2025)
- Tobias Selz (since 2025)

TEACHING

2022–2023	Faculty teaching award for best lecture in Geophysics and Meteorology
July 2019	Summer School, Kumasi, Ghana
since 2013	Lecture series on Theoretical Meteorology, Tropical Meteorology, Numerical Weather Prediction, Statistics in Meteorology ; seminar series on Climate Change , Karlsruhe Institute of Technology, Germany
2010–2011	Lecture series on Dynamics of Weather Systems , University of Leeds, UK
July 2010	Ewiem Nimdie Summer School, Kumasi, Ghana
2009–2010	Field teaching summer school, Isle of Arran, Scotland, UK
2008–2009	Lecture series on Numerical Methods, Data Assimilation, Predictability & Verification , University of Mainz
2006–2009	Supervision of student seminar presentations, University of Mainz
2006–2008	Lecture series on Tropical–Extratropical Interactions , University of Mainz
2005–2007	Lecture series on Tropical Meteorology , University of Mainz (among top ten evaluated optional lectures of the Department of Physics, Mathematics & Computer Sciences)

2001–2002 Supervision of an ERASMUS exchange student from Portugal, University of Cologne

INVITED SCIENTIFIC PRESENTATIONS

Sept. 2024 ECMWF Workshop on Diagnostics for Global Weather Prediction, Reading, UK: *Diagnosing tropical waves*

Sept. 2024 HIWeather Final Conference, Munich, Germany: *New diagnostics and hybrid forecasting systems for high-impact weather: Selected highlights from "Waves to Weather"*

April 2023 University of Hamburg, Hamburg, Germany: *How to improve rainfall forecasts in the Tropics?*

March 2023 TRR 165/181 Joint Conference on "Scale interactions, data-driven modeling, and uncertainty in weather and climate", Ingolstadt, Germany: *The intricacies of identifying equatorial waves*

March 2023 The Hebrew University, Jerusalem, Israel, Online: *Forecasting rainfall in the Tropics – Which way to go?*

Oct. 2022 International Conferences on Air Quality in Africa (ICAQ'Africa 2022), Online: *The potential of increasing man-made air pollution to reduce rainfall over southern West Africa*

Sept. 2022 SynCom Workshop on Early Warning for Natural Hazards, Potsdam, Germany: *EWS for severe weather events*

March 2021 NCAR Advancing Air Quality and Carbon Science in Africa, Online: *The potential of increasing man-made air pollution to reduce rainfall over southern West Africa*

Nov. 2020 WWRP HIWeather Workshop, Online: *How can we improve the prediction of rainfall over tropical Africa?*

May 2020 EAE Seminar, Monash, Australia: *How to improve weather and climate predictions for the tropics?*

April 2020 Bureau of Meteorology Seminar, Melbourne, Australia: *How to improve weather and climate predictions for the tropics?*

Dec. 2019 Colloquium of atmospheric science, Mainz, Germany: *How to improve weather and climate predictions for the tropics?*

Nov. 2019 Physics seminar, Karlsruhe, Germany: *And it won't snow in Africa – Bessere Wetter- und Klimavorhersagen für die Tropen*

Sept. 2019 METKOM2019, Frankenberg, Germany: *Wie machen wir die Wettervorhersage probabilistischer?*

June 2018 International Cooperative for Aerosol Prediction (ICAP) 10th working group meeting, Exeter, UK: *The role of moist convection for dust emission*

April 2018 BACCHUS final project meeting, Zurich, Switzerland: *The DACCIIWA Project: Dynamics-Aerosol-Chemistry-Cloud Interactions in West Africa*

April 2018 European Geosciences Union General Assembly, Vienna, Austria: *The relationship between Warm Conveyor Belts, Tropical Moisture Exports and Atmospheric Rivers*

Feb. 2017 IMK-IFU Seminar, Garmisch-Partenkirchen, Germany: *The Challenge to observe, model and understand the West African monsoon system*

Jan. 2017 97th AMS Annual Meeting, Seattle, USA: *The challenge of modeling the meteorology of dust emission: Lessons learned from the Desert Storms project*

May 2016 ETH Zurich, Switzerland: *The challenge of modeling the meteorology of dust emission: Lessons learned from the Desert Storms project*

- June 2015 DLR-IPA, Weßling, Germany: *Dust storms – The challenge of modelling the meteorology of dust emission using weather and climate models*
- Dec. 2014 Royal Meteorological Society, Reading, UK: *Dust Forecasting*
- Oct. 2014 Bernhard-Nocht Institute, Hamburg, Germany: *Wüstenstürme*
- July 2014 Leibniz-Institute for Tropospheric Research, Leipzig, Germany: *Dust storms – The challenge of modelling the meteorology of dust emission using weather and climate models*
- May 2014 German Meteorological Society, Offenbach, Germany: *Wüstenstürme – Über die Herausforderung die Meteorologie von Staubemission mit Wetter- und Klimamodellen zu erfassen*
- June 2013 University of Munich, Munich, Germany: *Vorhersagen europäischer Sturmsysteme von der Meso- bis zur Klimaskala*
- March 2013 AXA CATNAT Workshop, London, UK: *Can we trust climate models to realistically represent severe European windstorms?*
- May 2012 4th International Cooperative in Aerosol Prediction Workshop, Frascati, Italy: *Meteorological controls on dust emission and implications for modelling*
- April 2012 European Geosciences Union General Assembly, Vienna, Austria: *Diagnosing the influence of diabatic processes on the explosive deepening of extratropical cyclones over the North Atlantic Ocean*
- Nov. 2011 University of East Anglia, Norwich, UK: *Predicting European wind storms from days to decades*
- Nov. 2011 Karlsruhe Institute of Technology, Germany: *Sturmvorhersagen von der Meso- bis zur Klimaskala*
- July 2011 Karlsruhe Institute of Technology, Germany: *Staubstürme – Eine große Herausforderung auf dem Weg zur Erdsystemmodellierung*
- July 2011 Financial Services KTN and The Lighthill Risk Network, London, UK: *Uncertainties in Climate Projections of Severe European Windstorms*
- May 2011 University of Reading, UK: *Dust storms: A great challenge on the way to Earth system modelling*
- Nov. 2010 European Centre for Medium-Range Weather Forecasts, Reading, UK: *Towards an improved representation of meteorological processes in models of mineral dust emission*
- Nov. 2010 Imperial College, London, UK: *Towards an improved representation of meteorological processes in models of mineral dust emission*
- Oct. 2010 UK Met Office, Exeter, UK: *Towards an improved representation of meteorological processes in models of mineral dust emission*
- May 2010 Royal Meteorological Society, Leeds, UK: *Volcanic ash over Europe - When volcanology meets meteorology* (public lecture with Anja Schmidt)
- Nov. 2009 University of Leipzig, Germany: *Staubstürme – Beobachtungen, Modellierung und zukünftige Herausforderungen*
- Nov. 2009 University of Mainz, Germany: *Staubstürme – Beobachtungen & Modellierung und zukünftige Herausforderungen*
- Nov. 2009 University of Cologne, Germany: *Einfluss extratropischer synoptischer Störungen auf die Tropen* (advanced training seminar, German Meteorological Society)
- Dec. 2008 Laboratoire Interuniversitaire des Systèmes Atmosphériques, Universités Paris, France: *Atmospheric density currents*
- Dec. 2008 Institute for Climate and Atmospheric Science, University of Leeds, UK: *Convective cold pools over the northwestern Sahara*

- Dec. 2008 Institute for Atmospheric and Climate Science, ETH Zürich, Switzerland: *Atmospheric density currents*
- Sept. 2008 Third International Dust Workshop, Leipzig, Germany: *Dust and hurricanes linkages*
- June 2008 Institute of Meteorology and Geophysics, University of Innsbruck, Austria: *Ursachen und Auswirkungen extratropischer Wettersysteme in den niederen Breiten*
- May 2008 PANDOWAE Workshop, Höfen, Germany: *Upper-level disturbances over the low-latitude North Atlantic: Dynamics, forecast quality and predictability*
- Jan. 2008 Institut Pierre Simon Laplace, Paris, France: *Impact of extratropical upper-level disturbances on WAHL and SAL during the 8–12 June 2006 period*
- Nov. 2007 MARUM Africa Workshop, University of Bremen, Germany: *Meteorological conditions for dust mobilisation in the Sahara*
- Nov. 2007 Institute of Meteorology, University of Leipzig, Germany: *Extremniederschläge, Staubstürme und Wolkenbänder: Wie beeinflussen extratropische Wettersysteme die niederen Breiten?*
- June 2007 Department of Meteorology, University of Reading, UK: *Meteorological conditions for dust mobilisation in the Sahara*
- June 2007 Meteorological Institute, University of Munich, Germany: *Meteorologische Bedingungen für Staubmobilisierung in der Sahara*
- May 2007 Institute of Meteorology and Climate Research, University of Karlsruhe, Germany: *Meteorologische Bedingungen für Staubmobilisierung in der Sahara*
- May 2007 Institute for Atmospheric and Climate Science, ETH Zürich, Switzerland: *Meteorological conditions for dust mobilization in the Sahara*
- Dec. 2006 Second THORPEX International Science Symposium, Landshut, Germany: *AMMA and tropical–extratropical interactions*
- Sept. 2006 Institute of Tropospheric Research, Leipzig, Germany: *Mechanismen der Staubmobilisierung in der Sahara*
- Nov. 2005 Institute for Atmospheric Physics, University of Mainz, Germany: *Tropisch-extratropische Wechselwirkungen und extreme Wettersituationen in Westafrika*
- May 2005 Department of Atmospheric & Oceanic Sciences, University of Wisconsin–Madison, USA: *Tropical–extratropical interactions and extreme weather situations in West Africa*
- March 2005 Department of Atmospheric & Oceanic Sciences, McGill University, Montréal, Canada: *Tropical-extratropical interactions and extreme weather situations in West Africa*
- Feb. 2005 Atmospheric Science Department, University of Alabama in Huntsville, USA: *Tropical plumes and extreme precipitation in West Africa*
- Nov. 2004 Department of Earth and Atmospheric Sciences, State University of New York at Albany, USA: *Tropical plumes and extreme precipitation in West Africa*
- Nov. 2004 Department of Atmospheric Sciences, University of Washington, Seattle, USA: *Tropical plumes and extreme precipitation in West Africa: Moisture transport, precipitation generation, and large-scale dynamic and diabatic processes*
- Oct. 2004 NOAA-CIRES Climate Diagnostics Center, Boulder, USA: *Tropical plumes and extreme precipitation in West Africa: Moisture transport,*

	<i>precipitation generation, and large-scale dynamic and diabatic processes</i>
Feb. 2004	Department of Atmospheric & Oceanic Sciences, University of Wisconsin–Madison, USA: <i>Understanding rainfall variability as part of managing water scarcity in northwest Africa</i>
Jan. 2004	African Studies Program, University of Wisconsin–Madison, USA: <i>Understanding rainfall variability as part of managing water scarcity in northwest Africa</i>
Jan. 2004	Institute for Atmospheric Physics, University of Mainz, Germany: <i>Physikalische Mechanismen von extremen Niederschlagsereignissen in Westafrika im Zusammenhang mit tropisch-extratropischen Wechselwirkungen</i>
Jan. 2004	Institute of Geophysics and Meteorology, University of Cologne, Germany: <i>Physikalische Mechanismen von extremen Niederschlagsereignissen in Westafrika im Zusammenhang mit tropisch-extratropischen Wechselwirkungen</i>
Dec. 2003	Department of Earth & Atmospheric Sciences, Purdue University, West Lafayette, USA: <i>Extreme precipitation events in West and northwest Africa in connection with tropical-extratropical interactions and Precipitation in subtropical northwestern Africa: Tropical vs. extratropical influences</i>
Oct. 2003	Department of Atmospheric & Oceanic Sciences, University of Wisconsin–Madison, USA: <i>Precipitation in northwest Africa: Tropical vs. extratropical mechanisms</i>

MEMBERSHIPS IN LEARNED SOCIETIES

since 2009	Royal Meteorological Society (RMetS), Fellow since 2019
since 2006	European Geosciences Union (EGU)
1999–2002	European Geophysical Society (EGS)
since 1999	German Meteorological Society (DMG)

EDITORIAL ROLES

since 2019	Co-editor of <i>Weather and Climate Dynamics</i>
2018–2023	Invited guest editor for <i>Atmospheric Chemistry and Physics / Atmospheric Measurement Techniques</i> Special Issue “New observations and related modelling studies of the aerosol–cloud–climate system in the Southeast Atlantic and southern Africa regions”
2012–2014	Lead editor of Springer book <i>Mineral Dust – A Key Player in the Earth System</i> with J.-B. Stuut (ISBN 978-94-017-8977)
2010–2019	Associate editor for <i>Quarterly Journal of the Royal Meteorological Society</i>
2009–2011	Associate editor for <i>Monthly Weather Review</i>
2008–2010	Associate editor for the AMMA Workpackage 2.1 Special Issue in <i>Quarterly Journal of the Royal Meteorological Society</i>

ACADEMIC ROLES

2024	External PhD examiner for Godfred Torsah, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana
2024–2025	External member of search committee for a full professor in Atmospheric Dynamics at the Department of Atmospheric and Cryospheric Sciences, University of Innsbruck, Austria
2024	External PhD examiner for Lambert Delbeke, University of Toulouse, Toulouse, France
2023	Chair of search committee for a junior professorship “Experimental Cloud Research”, KIT, Germany
2023	External PhD examiner for Sebastian Giersch, University of Hannover, Hannover, Germany
2023	External PhD examiner for David Ragatoa, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana
2021	External PhD examiner for Marian Osei, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana
2021	External PhD examiner for Derrick Danso, Université Grenoble Alpes (UGA), Grenoble, France
2014–2019	Director of Student Education, Meteorology, Faculty of Physics, Karlsruhe Institute of Technology
2018	External PhD examiner for Winifred Atiah, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana
2018	External PhD examiner for Jeffrey Aryee, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana
2018	External PhD examiner for Ambrogio Volonté, University of Reading, UK
2013	External PhD examiner for Nick Earl, University of East Anglia, Norwich, UK
2011	Leader of a search committee for a new Lecturer in Meteorology, University of Leeds, UK
2008	Jury member for the PhD defence of Diana Bou Karam, Institut Pierre Simon Laplace, Paris, France
1997–2003	Student representative of the Institute of Geophysics and Meteorology, University of Cologne, Germany

COMMITTEES AND ADVISORY BOARDS

since 2019	External advisor to University of Leeds Met Office Strategic (LUMOS) Research Group
since 2018	Member of Steering Board, Center for Mathematics in Sciences, Engineering, and Economics (MathSEE), KIT, Karlsruhe, Germany
since 2017	Member of World Weather Research Programme (WWRP) HIWeather Steering Group (Processes & Predictability theme)
since 2015	Member of Steering Board, Center for Climate and Environment, KIT, Karlsruhe, Germany
2018–2021	Member of Regional Steering Committee for North Africa - Middle East – Europe of the World Meteorological Organization (WMO) Sand and Dust Storm Warning and Advisory Assessment System (SDS-WAS)

2013–2018	Member of the Advisory Board of the EU-funded “Impact of Biogenic versus Anthropogenic emissions on Clouds and Climate: towards a Holistic UnderStanding” (BACCHUS) project led by Ulrike Lohmann (ETH Zurich)
2011–2014	Member of the Advisory Board of the AXA Research Fund project “Regional Assessment of Climate impact on European WINDstorms” (RACEWIN) project led by David Stephenson (University of Exeter)
2010–2013	Member of the steering committee of the <i>BBC Weather Test</i>
2005–2010	Chair of the Interest Group on “AMMA and aspects of tropical–extratropical interactions” initiated by the THORPEX Working Group on Predictability and Dynamical Processes (WG PDP)

CONFERENCE AND WORKSHOP ORGANISATION

2019	Organizing committee, 6th “Staubtag” dust workshop, Karlsruhe, Germany
2019	Convener of the interdivision session <i>Atmospheric composition, weather and climate in Sub-Saharan Africa</i> at the General Assembly of the European Geosciences Union, Vienna, Austria
2017	Organizing committee, Conference on Predictability and Multi-Scale Prediction of High Impact Weather, Landshut, Germany
2012	Main organiser of a workshop on European windstorms at the University of Leeds, Leeds, UK
2012	Co-Organizer of Special Evening Session “75 Years of AEW Research: Historical Perspectives, Recent Advances, and Future Challenges” at 30 th Conference on Hurricanes and Tropical Meteorology, American Meteorological Society, Ponte Vedra Beach, FL, USA
2010–2011	Organizing committee for the Annual Meeting of the <i>Royal Meteorological Society</i>
2010	Co-convener of the session <i>Tropical Meteorology and Tropical–Extratropical Interactions</i> and jury member for Poster Award at the German-Austrian-Swiss Meteorology Symposium 2010
2008–2019	Convener of the interdivision session <i>Aeolian dust: initiator, player, and recorder of environmental change</i> at the General Assembly of the European Geosciences Union, Vienna, Austria
2007	Co-convener of the session <i>Tropical Meteorology</i> at the German-Austrian-Swiss Meteorology Symposium 2007
2007	Laudation for Prof emer. Stefan Hastenrath on the occasion of the Alfred-Wegener medal award celebration at the German-Austrian-Swiss Meteorology Symposium 2007

REVIEWER ROLES

2020–2028	Elected member of the Review Board “Atmosphere, Ocean and Climate Research” of the German Research Foundation (DFG)
since 2003	Reviewer* of >130 papers for <i>Science</i> , <i>Nature Climate Change</i> , <i>Nature Communications</i> , <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <i>Monthly Weather Review</i> , <i>Journal of</i>

* see <https://publons.com/researcher/1371734/peter-knippertz/peer-review/>

	<i>Climate, Journal of the Atmospheric Sciences, Journal of Geophysical Research: Atmospheres, Geophysical Research Letters, Environmental Research Letters, Quarterly Journal of the Royal Meteorological Society, Climate Dynamics, Atmospheric Research, Atmospheric Chemistry and Physics, Atmospheric Science Letters, Bulletin of the American Meteorological Society, Journal of Advances in Modeling Earth Systems, Climate Research, Aeolian Research, International Journal of Climatology, Atmospheric Environment, Journal of Hydrometeorology, Tellus, Weather and Forecasting, EOS, Journal of Hydrology, Meteorology and Atmospheric Physics, Natural Hazards and Earth System Science, Journal of Applied Meteorology and Climatology, Scientific Research and Essays, Space Science Reviews, The Open Atmospheric Science Journal, Theoretical and Applied Climatology, Climate of the Past</i>
since 2005	Reviewer of >50 research proposals for German Research Foundation (DFG), Federal Ministry of Education and Research (BMBF, Germany), Alexander von Humboldt Foundation (AvH, Germany), German Academic Exchange Service (DAAD), National Science Foundation (NSF, USA), National Oceanic & Atmospheric Administration (NOAA, USA), L'Agence Nationale de la Recherche (ANR, France), Natural Environment Research Council (NERC, UK), European Facility for Airborne Research (EUFAR), Dutch Research Council (NOW), Israel Science Foundation (ISF), German Israeli Foundation (GIF), Israeli Ministry of Science, Technology and Space, Chilean Research Foundation (CONICYT), ETH Zurich Postdoctoral Fellowship Program, European Science Foundation
2013	Review panel for the HALO (High Altitude and Long Range Research Aircraft) Programme, German Research Foundation
2011	Review panel for AXA Research Fund
2011	Review panel for Postdoc Research Projects for the Greek Ministry of Education, Lifelong Learning and Religious Affairs
2010	Review panel Geophysics and Atmospheric Sciences of the Academy of Finland

FIELD WORK

2016	International field campaign of <i>Dynamics-Aerosol-Chemistry-Clouds Interactions in West Africa (DACCIWA)</i> , five West African countries
2011–2012	Aircraft campaign of the <i>Diabatic Influences on Mesoscale Structures in Extratropical Storms (DIAMET)</i> project, UK
2008	Second international <i>SAMUM (SAharian Mineral dUst experiMent)</i> field campaign, Cape Verde
2006	First international <i>SAMUM (SAharian Mineral dUst experiMent)</i> field campaign, Morocco
2000–2002	Set-up of a surface station network in southern Morocco as part of the <i>An Integrated Approach to the Efficient Management of Scarce Water Resources in West Africa (IMPETUS)</i> project

OUTREACH ACTIVITIES

Nov. 2024	Science Innovation Days, World Café and Panel Discussion, Eberhard Karls Universität Tübingen
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- Oct. 2024 Interview about ex-Hurricane "Kirk", RadioH100,0
- Aug. 2024 Interview "Tödlicher Windstoß aus dem Nichts", Badische Neueste Nachrichten
- Aug. 2024 Interview "Klimawandel erhöht Hochwasser-Risiken", Badische Neueste Nachrichten
- July 2024 Interview "Macht die KI jetzt bessere Wettervorhersagen?", MDR Wissen (<https://www.mdr.de/wissen/wettervorhersage-besser-durch-ki-gewitter-100.html>)
- July 2024 Interview „Wettervorhersage für einen Monat bleibt ein Traum“ for "Stuttgarter Zeitung" (Nr. 149, 01 July; <https://www.stuttgarter-zeitung.de/inhalt.meteorologe-ueber-wetterkapriolen-klimawandel-und-wetterprognosen-wie-geht-es-weiter.9e6b8db2-e647-41bb-ad91-8074f17eb80b.html>)
- July 2024 Statement zu "Bessere Wettervorhersage mit maschinellem Lernen" für science media center Germany (picked up, e.g., by Frankfurter Allgemeine Zeitung, Braunschweiger Zeitung, Der Tagesspiegel)
- April 2024 Interview on AI and weather prediction for "Deutsche Welle" (<https://www.dw.com/de/wird-wetter-durch-ki-genauer-vorhersagbar/a-68871692>)
- Nov. 2023 Interview on AI and weather prediction for "Alle Wetter" (HR3 TV)
- Sept. 2022 Presentation and discussion with citizens entitled "Vom Bauernkalender zur künstlichen Intelligenz – Die stille Revolution der Wettervorhersage" in the framework of Café Météorologique during the EMS Annual Meeting in Bonn
- 2021 Contribution to book by David Nelles and Christian Serrer "Machste dreckig – Machste sauber: Die Klimälösung"
- Jul. 2021 Climate Workshop at the Carl-Engler-Schule in Karlsruhe in the framework of "Scientists For Future"
- June 2021 Presentation and discussion with citizens entitled „Was bedeutet das 1,5-Grad Ziel?“ organized by "Mannheim kohlefrei"
- Jan. 2021 Presentation and discussion with citizens entitled „Wann wird's mal wieder richtig Winter? -Der Klimawandel" as part of „Swantjes Digitales Kaffeekränzchen" (www.Swantje-Sperling.de)
- Dec. 2020 Presentation in the framework of "Wissenschaftsreihe EFFEKTE Karlsruhe" entitled "Wie funktioniert Wettervorhersage?"
- Aug. 2020 Contribution to Wheeling, K. (2020), Mathematical insights into the West African monsoon, Eos, 101, <https://doi.org/10.1029/2020EO148254>.
- Jan. 2020 Presentation at "KIT im Rathaus" entitled "Vom Bauernkalender zum Supercomputer – Die stille Revolution der Wettervorhersage"
- Dec. 2019 Climate Workshop at the Carl-Engler-Schule in Karlsruhe in the framework of "Scientists For Future"
- Nov. 2019 Climate Workshop at the [Lessing-Gymnasium](#) in Karlsruhe in the framework of "Scientists For Future"
- Sept. 2019 Workshop for Fridays For Future entitled "Klimaphysik für Einsteiger"
- Aug. 2019 Interview for Deutsche Welle entitled "[Westafrika bleibt die Luft weg](#)", radio/internet, Germany
- June 2019 Public lecture on "Saharastaub, Feuer, Abgase: Luftverschmutzung in Afrika", Effektivvoll am KIT, Karlsruhe, Germany
- since 2018 Initiative "Wahrscheinlich Wetter" to foster public understanding of probabilistic forecasts

- 2018 Contribution to book by Christian Serrer and David Nelles "Kleine Gase – Große Wirkung: Der Klimawandel"
- 2017 Contribution to book by Stefan Klein "Das All und das Nichts"
- since 2005 Interviews and contributions for TV (e.g. SWR, ARD, BBC), radio (e.g. BBC, Radio Regenbogen), newspapers (e.g. Mainzer Rheinzeitung, Badische Neueste Nachrichten) and magazines (e.g. GEO)

PROFESSIONAL TRAINING

- 2025 *Helmholtz KLIMA Medientraining 4K: Klima, Kamera, Kompetenz, Kommunikation*, HGF, Berlin, Germany
- 2024 *Genderkompetenz-Modul 4: Gendergerechter Umgang in Auswahlverfahren*, KIT, Germany
- 2023 *Genderkompetenz-Modul 3: Genderkompetenz in der Personalauswahl*, KIT, Germany
- 2012–2013 *Tomorrow's Leaders Programme*, University of Leeds, UK
- June 2012 *Strategies for Successful Change*, University of Leeds, UK
- June 2010 *Effective Research Student Supervision for the Science, Engineering and Medically –Related Disciplines*, University of Leeds, Leeds, UK
- Feb. 2010 *Effective Research Student Supervision: The Role of the Internal Examiner*, University of Leeds, Leeds, UK
- Nov. 2009 *Virtual Learning Environment*, University of Leeds, Leeds, UK
- July 2008 *Applying for European Research Council Starting Grants*, German Research Foundation, Bonn, Germany
- June 2008 *Basic Methods of E-Learning*, Institute for Media Pedagogy, University of Mainz, Mainz, Germany
- March 2007 *Project Management, Communication and Presentation*, German College for Administration Science (DHV), Speyer, Germany
- Oct. 2006 *Career Paths in Science and Research*, German Research Foundation, Berlin, Germany
- Nov. 2005 *Media Skills Training for Scientists*, German Research Foundation, Bonn, Germany
- Jan. 2005 *New Chances for Young Scientists in Germany*, German Academic International Network, Chicago, USA
- Sept. 2004 *Perspectives and Challenges of Higher Education and Science Policy*, German Research Foundation & German Academic Exchange Service, Boston, USA