

Julian Quinting

PhD

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Education

- 11/2011 – 01/2015 **Karlsruhe Institute of Technology**, Karlsruhe, Germany
Doctoral Student, Advisor: *Dr. Sarah Jones*
Research: The impact of tropical convection on the dynamics and predictability of midlatitude Rossby waves: a climatological study
- 10/2006 – 10/2011 **Karlsruhe Institute of Technology**, Karlsruhe, Germany
Master Student, Advisor: *Dr. Sarah Jones*
Research: Structural characteristics of Typhoon Sinlaku (2008) during its extratropical transition: an observational study
- 06/2006 **High-school graduation (Abitur)**, Walram Gymnasium Menden, Germany

Work Experience

- 02/2018 – present **Karlsruhe Institute of Technology**, *Research Associate in group of Dr. Christian Grams*, Karlsruhe, Germany.
Research: Subseasonal predictability of North Atlantic-European Weather regimes and the role of diabatic outflow
- 01/2016 – 01/2018 **Monash University**, *Postdoctoral Research Fellow in group of Dr. Michael Reeder*, Melbourne, Australia.
Research: Dynamics of heat waves and hybrid cyclones in the Southern Hemisphere
- 01/2015 – 12/2015 **ETH Zurich**, *Postdoctoral Research Fellow in group of Dr. Heini Wernli*, Zurich, Switzerland.
Research: North Atlantic Waveguide and Downstream Impact Experiment (NAWDEX)
- 10/2013 – 12/2013 **University at Albany**, *Visiting Scientist with Dr. Lance Bosart*, Albany, United States.
- 03/2011 – 05/2011 **Naval Postgraduate School**, *Visiting Scientist with Dr. Patrick Harr and Dr. Michael Bell*, Monterey, United States.

Community Service

- Associate Editor for Monthly Weather Review of the American Meteorological Society

- Member of the International Commission on Dynamical Meteorology (ICDM) of IUGG
- Member of the organizational team for the MathSEE Symposium 2023, Karlsruhe, Germany
- Co-convener of the “Atmospheric Rossby waves and Jet Dynamics, and their Impacts on Extreme Weather and Climate Events” Session, EGU general assembly 2022, Vienna
- Member of the science committee for the 19th Cyclone Workshop 2019, Kloster Seeon
- Co-convener of the “Dynamical Meteorology” Session, EGU general assembly 2019, Vienna
- Reviewer for journals: Quarterly Journal of the Royal Meteorological Society, Journal of Climate, Monthly Weather Review, Climate Dynamics, Geophysical Research Letters, Weather and Forecasting, Weather and Climate Dynamics, Journal of Southern Hemisphere Earth Systems Science
- Invited chief forecaster during NAWDEX field campaign 2016, Keflavik, Iceland
- Invited forecaster during HyMeX field campaign 2012, Corsica, France

Grants & Fellowships

- 2023: Co-PI in Federal Ministry of Education and Research (BMBF) project, ClimXtreme – a research network on climate change and extreme events, 275k€
- 2023: Co-PI in KIT YIN Grant, Data-driven weather models: Towards improved uncertainty quantification, interpretability and efficiency, 27k€
- 2022: PI of ERC Starting Grant, Advancing Sub-Seasonal Predictions at Reduced computational Effort (ASPIRE), 1,500k€
- 2021: PI of bridge-PhD funded by KIT Center Mathematics in Sciences, Engineering, and Economics, Probabilistic weather regime prediction: Combining physical models and generative machine learning, 105k€
- 2021: Co-PI in KIT Excellence Fund Future Fields project, A new Testbed for Exploring Machine Learning in Atmospheric Prediction (TEEMLEAP), 354k€
- 2019: DAAD Partnership Program with the University of Tsukuba, Japan, 20k€
- 2013: Karlsruhe House of Young Scientists Research Travel Grant for research visit at the University at Albany, United States
- 2013: International Association of Meteorology and Atmospheric Sciences Travel Grant to the Davos Atmosphere and Cryosphere Assembly, Davos, Switzerland
- 2012: Karlsruhe House of Young Scientists Travel Grant to the 4th International Workshop on Extratropical Transition, St. Adele, Canada
- 2012: Karlsruhe House of Young Scientists “Event Planning Support” Grant for the PANDOWAE Young Scientists Winter School

Teaching & Supervision

- 06/2016 – present Supervision of PhD thesis of Cameron Henderson, Monash University
- 05/2021 – present Supervision of PhD thesis of Fabian Mockert, KIT
- 07/2022 – 07/2023 Supervision of MSc thesis of Siyu Li, KIT
- 12/2021 – 05/2022 Supervision of BSc thesis of Marie Lange, KIT
- 05/2021 – 04/2022 Supervision of MSc thesis of Fabian Mockert, KIT
- 02/2021 – 02/2022 Supervision of MSc thesis of Kilian Hermes, KIT

- 06/2020 – 12/2020 Supervision of MSc thesis of Elias Müller, KIT
- 06/2018 – 06/2019 Supervision of MSc thesis of Seraphine Hauser, KIT
- 10/2015 – 03/2016 Supervision of MSc thesis of Raphael Portmann, ETH Zurich
- 06/2013 – 06/2014 Supervision of MSc thesis of Marlon Maranan, KIT
- 2020 – present Lecturer in Synoptic Meteorology, KIT
- Summer 2012–14 Lecturer in seminar on “Tropical Meteorology”, KIT
- Winter 2011 Teaching assistant in “Theoretical Meteorology”, KIT

Invited Presentations

- 2023: IUGG General Assembly, Symposium of the International Association of Meteorology and Atmospheric Sciences, Berlin, Germany: “Machine learning-based feature identification to advance our understanding in dynamic meteorology”
- 2022: Stony Brook University, School of Marine and Atmospheric Sciences, Stony Brook, USA: “Deep Learning for the Verification of Synoptic-scale Processes in NWP and Climate Models”
- 2021: University of Bern, Institute of Geography, Bern, Switzerland: “Deep Learning for the Verification of Synoptic-scale Processes in NWP and Climate Models”
- 2021: Center for Western Weather and Water Extremes, UC San Diego, USA, online: “NAWDIC - general update and NAWDIC Halo”
- 2020: S2S Webinar Series: “Using a statistical model to verify warm conveyor belts in ECMWF’s subseasonal forecasts”
- 2020: Center for Western Weather and Water Extremes, UC San Diego, USA, online: “NAWDIC - Vision for a new international field campaign”
- 2019: Johannes Gutenberg University of Mainz, Institute for Atmospheric Physics, Mainz, Germany: “The dynamics of heat waves and hybrid cyclones in the Australian region”
- 2019: ECMWF Workshop “Observational Campaigns for better weather forecast, Reading, UK: “Forecast products for flight planning from a researchers’ perspective”
- 2019: University of Exeter, College of Engineering, Mathematics and Physical Sciences, Exeter, UK: “The intensity and motion of hybrid cyclones in a composite potential vorticity framework”
- 2017: ARC Centre of Excellence for Climate System Science Workshop, Canberra, Australia: “Southeastern Australian heat waves from a trajectory viewpoint”
- 2016: University of Leeds, Institute for Climate and Atmospheric Science, Leeds, UK: “On the remote impact of tropical cyclones on midlatitude weather and predictability”
- 2016: Monash University, School of Earth Atmosphere and Environment, Clayton, Australia: “On the remote impact of tropical cyclones on midlatitude weather and predictability”

Peer-reviewed publications

Pickl, M., **Quinting, J.F.** & Grams, C.M. (2023). Warm conveyor belts as amplifiers of forecast uncertainty. *Q. J. R. Meteorol. Soc.*, 1–22, <https://doi.org/10.1002/qj.4546>

Seifert, A., Bachmann, V., Filipitsch, F., Förstner, J., Grams, C. M., Hoshyaripour, G. A., **Quinting, J.**, Rohde, A., Vogel, H., Wagner, A., and Vogel, B. (2023). Aerosol–cloud–radiation interaction during Saharan dust episodes: the dusty cirrus puzzle, *Atmos. Chem. Phys.*, 23, 6409–6430, <https://doi.org/10.5194/acp-23-6409-2023>

Ludwig, P., Ehmele, F., Franca, M. J., Mohr, S., Caldas-Alvarez, A., Daniell, J. E., Ehret, U., Feldmann, H., Hundhausen, M., Knippertz, P., K pfer, K., Kunz, M., M hr, B., Pinto, J. G., **Quinting, J.**, Sch fer, A. M., Seidel, F., and Wisotzky, C. (2023). A multi-disciplinary analysis of the exceptional flood event of July 2021 in central Europe – Part 2: Historical context and relation to climate change, *Nat. Hazards Earth Syst. Sci.*, 23, 1287–1311, <https://doi.org/10.5194/nhess-23-1287-2023>

Oertel, A., Pickl, M., **Quinting, J. F.**, Hauser, S., Wandel, J., Magnusson, L., et al. (2023). Everything hits at once: How remote rainfall matters for the prediction of the 2021 North American heat wave. *Geophys. Res. Lett.*, 50, e2022GL100958. <https://doi.org/10.1029/2022GL100958>

Mohr, S., Ehret, U., Kunz, M., Ludwig, P., Caldas-Alvarez, A., Daniell, J. E., Ehmele, F., Feldmann, H., Franca, M. J., Gattke, C., Hundhausen, M., Knippertz, P., K pfer, K., M hr, B., Pinto, J. G., **Quinting, J.**, Sch fer, A. M., Scheibel, M., Seidel, F., and Wisotzky, C. (2023). A multi-disciplinary analysis of the exceptional flood event of July 2021 in central Europe – Part 1: Event description and analysis, *Nat. Hazards Earth Syst. Sci.*, 23, 525–551, <https://doi.org/10.5194/nhess-23-525-2023>

Quinting, J. F., Grams, C. M., Oertel, A., & Pickl, M. (2022). EuLerian Identification of ascending AirStreams (ELIAS 2.0) in Numerical Weather Prediction and Climate Models. Part II: Model application to different data sets, *Geosci. Model Dev.*, 15, 731-744 <https://doi.org/10.5194/gmd-15-731-2022>

Quinting, J. F., & Grams, C. M. (2022). EuLerian Identification of ascending Air Streams (ELIAS 2.0) in Numerical Weather Prediction and Climate Models. Part I: Development of deep learning model, *Geosci. Model Dev.*, 15, 715-730, <https://doi.org/10.5194/gmd-15-715-2022>

Hochman, A., Messori, G., **Quinting, J. F.**, Pinto, J. G., & Grams, C. M. (2021). Do Atlantic-European weather regimes physically exist?. *Geophysical Research Letters*, 48, e2021GL095574. <https://doi.org/10.1029/2021GL095574>

B eler, D., Ferranti, L., Magnusson, L., **Quinting, J. F.**, & Grams, C.M. (2021). Year-round sub-seasonal forecast skill for Atlantic-European weather regimes. *Q. J. R. Meteorol. Soc.*, 147, 4283-4309, <https://doi.org/10.1002/qj.4178>

Wandel, J., **Quinting, J. F.**, & Grams, C. M. (2021). Toward a systematic evaluation of warm conveyor belts in numerical weather prediction and climate models. Part II: Verification of operational reforecasts, *Journal of the Atmospheric Sciences*, 78, 3965-3982, <https://doi.org/10.1175/JAS-D-20-0385.1>

Quinting, J. F., & Grams, C. M., 2021: Toward a systematic evaluation of warm conveyor belts in numerical weather prediction and climate models. Part I: Predictor selection and logistic regression model, *Journal of the Atmospheric Sciences*, 78, 1465-1485, <https://doi.org/10.1175/JAS-D-20-0139.1>

Hochman, A., Scher, S., **Quinting, J.**, Pinto, J. G., and Messori, G., 2021: A new view of heat wave dynamics and predictability over the eastern Mediterranean, *Earth Syst. Dynam.*, 12, 133–149, <https://doi.org/10.5194/esd-12-133-2021>

Hochman, A., Scher, S., **Quinting, J.**, Pinto, J. G., Messori, G., 2020: Dynamics and predictability of cold spells over the Eastern Mediterranean. *Clim. Dyn.*. <https://doi.org/10.1007/s00382-020-05465-2>

Mohr, S., Wilhelm, J., Wandel, J., Kunz, M., Portmann, R., Punge, H. J., Schmidberger, M., **Quinting, J. F.**, and Grams, C. M., 2020: The role of large-scale dynamics in an exceptional sequence of severe thunderstorms in Europe May–June 2018, *Weather Clim. Dynam.*, 1, 325–348, <https://doi.org/10.5194/wcd-1-325-2020>

Spensberger, C., Madonna, E., Boettcher, M., Grams, C.M., Papritz, L., **Quinting, J. F.**, Röthlisberger, M., Sprenger, M. and Zschenderlein, P., 2020: Dynamics of concurrent and sequential Central European and Scandinavian heatwaves. *Q. J. R. Meteorol. Soc.*, 146, 2998-3013, <https://doi.org/10.1002/qj.3822>

Hauser, S., Grams, C.M., Reeder, M.J., McGregor, S., Fink, A.H. and **Quinting, J. F.**, 2020: A weather system perspective on winter-spring rainfall variability in southeastern Australia during El Niño. *Q. J. R. Meteorol. Soc.*, 146, 2614-2633, <https://doi.org/10.1002/qj.3808>

Andersen, H., Cermak, J., Fuchs, J., Knippertz, P., Gaetani, M., **Quinting, J.**, Sippel, S., and Vogt, R., 2020: Synoptic-scale controls of fog and low-cloud variability in the Namib Desert. *Atmos. Chem. Phys.*, 20, 3415-3438, <https://www.atmos-chem-phys.net/20/3415/2020/>

Catto, J. L., Ackerley, D., Booth, J. F., Champion, A. J., Colle, B. A., Pfahl, S., Pinto, J. G., **Quinting, J. F.**, and Seiler, C., 2019: The Future of Midlatitude Cyclones. *Curr. Clim. Change Rep.*, 5, 407-420, <https://doi.org/10.1007/s40641-019-00149-4>

Babić, K., Kalthoff, N., Adler, B., **Quinting, J. F.**, Lohou, F., Dione, C., and Lothon, M., 2019: What controls the formation of nocturnal low-level stratus clouds over southern West Africa during the monsoon season? *Atmos. Chem. Phys.*, 19, 13489–13506, <https://doi.org/10.5194/acp-19-13489-2019>

Parker, T. J., **Quinting, J. F.**, and Reeder, M. J., 2019: The synoptic-dynamics of summertime heat waves in the Sydney area (Australia), *J. Southern Hemis. Earth Sys. Sci.*, 69, 116-130, <https://doi.org/10.1071/ES19004>

Quinting, J. F., & Vitart, F., 2019: Representation of synoptic-scale Rossby wave packets and blocking in the S2S prediction project database. *Geophys. Res. Lett.*, 46, 1070– 1078. <https://doi.org/10.1029/2018GL081381>

Keller, J.H., C.M. Grams, M. Riemer, H.M. Archambault, L. Bosart, J.D. Doyle, J.L. Evans, T.J. Galarneau, K. Griffin, P.A. Harr, N. Kitabatake, R. McTaggart-Cowan, F. Pantillon, **J. Quinting**, C.A. Reynolds, E.A. Ritchie, R.D. Torn, and F. Zhang, 2018: The Extratropical Transition of Tropical Cyclones Part II: Interaction with the midlatitude flow, downstream impacts, and implications for predictability. *Mon. Wea. Rev.*, 147, 1077–1106, <https://doi.org/10.1175/MWR-D-17-0329.1>

Quinting, J. F., Reeder, M. J., and J. L. Catto, 2018: The intensity and motion of hybrid cyclones in the Australian region in a composite potential vorticity framework. *Q. J. R. Meteorol. Soc.*, 145,

273–287, <https://doi.org/10.1002/qj.3430>

Quinting, J. F., Catto, J. L., and M. J. Reeder, 2018: Synoptic climatology of hybrid cyclones in the Australian region. *Q. J. R. Meteorol. Soc.*, 145, 288–302, <https://doi.org/10.1002/qj.3431>

Quinting, J. F., T. Parker, and M.J. Reeder, 2018: Two Synoptic Routes to Subtropical Heat Waves as Illustrated in the Brisbane Region of Australia, *Geophys. Res. Lett.*, 45, 10,700– 10,708, <https://doi.org/10.1029/2018GL079261>

Schäfler, A., and Coauthors, 2018: The North Atlantic Waveguide and Downstream Impact Experiment. *Bull. Amer. Meteor. Soc.*, 99, 1607–1637, <https://doi.org/10.1175/BAMS-D-17-0003.1>

Portmann R., B. Crezee, **J. Quinting**, and H. Wernli, 2018: The complex life cycles of two long-lived potential vorticity cut-offs over Europe. *Q. J. R. Meteorol. Soc.*, 144, 701–719, <https://doi.org/10.1002/qj.3239>

Evans, C., K.M. Wood, S.D. Aberson, H.M. Archambault, S.M. Milrad, L.F. Bosart, K.L. Corbosiero, C.A. Davis, J.R. Dias Pinto, J. Doyle, C. Fogarty, T.J. Galarneau, C.M. Grams, K.S. Griffin, J. Gyakum, R.E. Hart, N. Kitabatake, H.S. Lentink, R. McTaggart-Cowan, W. Perrie, **J. F. Quinting**, C.A. Reynolds, M. Riemer, E.A. Ritchie, Y. Sun, and F. Zhang, 2017: The Extratropical Transition of Tropical Cyclones. Part I: Cyclone Evolution and Direct Impacts. *Mon. Wea. Rev.*, 145, 4317–4344, <https://doi.org/10.1175/MWR-D-17-0027.1>

Quinting, J. F. and M.J. Reeder, 2017: Southeastern Australian Heat Waves from a Trajectory Viewpoint. *Mon. Wea. Rev.*, 145, 4109–4125, <https://doi.org/10.1175/MWR-D-17-0165.1>

Schneiderreit, A., D.H. Peters, C.M. Grams, **J. F. Quinting**, J.H. Keller, G. Wolf, F. Teubler, M. Riemer, and O. Martius, 2017: Enhanced Tropospheric Wave Forcing of Two Anticyclones in the Prephase of the January 2009 Major Stratospheric Sudden Warming Event. *Mon. Wea. Rev.*, 145, 1797–1815, <https://doi.org/10.1175/MWR-D-16-0242.1>

Quinting, J. F. and S.C. Jones, 2016: On the Impact of Tropical Cyclones on Rossby Wave Packets: A Climatological Perspective. *Mon. Wea. Rev.*, 144, 2021–2048, <https://doi.org/10.1175/MWR-D-14-00298.1>

Quinting, J. F., M.M. Bell, P.A. Harr, and S.C. Jones, 2014: Structural Characteristics of T-PARC Typhoon Sinlaku during Its Extratropical Transition. *Mon. Wea. Rev.*, 142, 1945–1961, <https://doi.org/10.1175/MWR-D-13-00306.1>

Other publications

McTaggart-Cowan, R., C. Evans, S. Aberson, H. Archambault, L. Bosart, S. Camargo, J. Doyle, P. Finocchio, J. Gyakum, N. Kitabatake, T. Loridan, F. Pantillon, **J. Quinting**, C. Reynolds, E. Ritchie, R. Torn, and C. Zarzycki, 2018: Extratropical Transition. Ninth International Workshop on Tropical Cyclones of WMO, available at https://www.wmo.int/pages/prog/arep/wwrp/tmr/documents/IWTC-9_Subtopic_4-3.pdf

Quinting, J.F., 2015: The impact of tropical convection on the dynamics and predictability of mid-latitude Rossby waves : a climatological study. PhD dissertation, Karlsruhe Institute of Technology, Germany, available at <https://publikationen.bibliothek.kit.edu/1000046046/3439866>

Quinting, J. F., 2011: Structural characteristics of Typhoon Sinlaku (2008) during its extratropical transition: an observational study. Diploma Thesis, Karlsruhe Institute of Technology, Germany, available at <http://www.imk-tro.kit.edu/english/5361.php>