

## Curriculum vitae Prof. Bruno Merz

### PERSONAL INFORMATION

Family name, First name: Merz, Bruno  
 Title: Prof. Dr. rer. nat. habil. Dr.-Ing.  
 Researcher unique identifier (ORCID): 0000-0002-5992-1440  
 Nationality: German  
 URL for website: [www.gfz-potsdam.de/staff/bruno.merz/sec44](http://www.gfz-potsdam.de/staff/bruno.merz/sec44)

### RESEARCH EXPERTISE

Bruno Merz, civil engineer by training, is a hydrologist who investigates flood risk and extreme events, including their impact on society, by developing and using simulation models and data-based approaches. His scientific work spans a wide range of topics including different types of natural hazards, monitoring and modelling of hydrological processes, understanding vulnerability and risk, and designing disaster risk reduction and adaptation strategies.

### EDUCATION

2005 Habilitation in Hydrology, University of Potsdam, Germany  
 1996 PhD in Civil Engineering, University of Karlsruhe, Germany  
 1988 Diploma in Civil Engineering, University Karlsruhe

### CURRENT POSITIONS

2015 – today Head of Working Group Hydrological Extremes, GFZ Helmholtz Centre for Geosciences  
 2006 – today Professor for Engineering Hydrology and Management of Georisks, University Potsdam  
 2025 – today President German Hydrological Society

### PREVIOUS POSITIONS

2002 – 2025 Head of Section Hydrology, GFZ  
 2009 – 2015 Director Department 5 Earth Surface Processes, GFZ  
 2007 – 2009 Director Department Geoengineering, GFZ  
 2000 – 2002 Scientist, Section Geomechanics, GFZ  
 1996 – 2000 Secretary Scientific Advisory Board, German Committee for Disaster Mitigation  
 1990 – 1996 Scientist, Hydrology and Water Resources Planning, University Karlsruhe  
 1988 – 1990 Research Fellow, Chair of River Engineering, University Kyoto, Japan

### AWARDS

2020 IAHS-UNESCO-WMO International Hydrology Prize: Volker Medal 2020  
 2020 Digital Science Award: Digital Earth – Integrating Data Science & Earth System Sciences  
 2018 AGU Fellow Class 2018  
 2017 Plinius Medal, EGU Natural Hazards Division  
 2014 AGU Editors' Choice Award 2015: Schröter et al., 2014, How useful are complex flood damage models? *Water Resour. Res.*  
 2013 AGU Editors' Citation for Excellence in Refereeing, *Water Resour. Res.*  
 2011 EGU Jim Dooge Best Paper Award: Uhlemann et al., 2010, A consistent set of trans-basin floods in Germany between 1952–2002, *Hydrol. Earth Syst. Sci.*  
 1996 Honorary Senator Huber Award, University Karlsruhe, Germany  
 1988 Fellowship, Japanese Ministry of Education, Culture, Sports, Science, Technology

### HIGHLIGHTED PUBLICATIONS

2024 Highlight Paper: Merz et al., Invited perspectives: Safeguarding the usability and credibility of flood hazard and risk assessments, *Nat. Hazards Earth Syst. Sci.*  
 2024 Highly Commended Article: Sieg et al., Toward an adequate level of detail in flood risk assessments, *J. Flood Risk Manag.*  
 2023 Top Downloaded Paper for *Water Resour. Res.* 2022: Understanding heavy tails of flood peak

distributions, *Water Resour. Res.*

2022 Editor's Highlight: Merz et al., Understanding heavy tails of flood peak distributions, *Water Resour. Res.*

2019 Paper of the Month: Kurths et al., Unravelling the spatial diversity of Indian precipitation tele-connections via a non-linear multi-scale approach, *Nonlin. Processes Geophys.*

2019 Earth Science Category Winner, AAP PROSE Award: Book 'Global Flood Hazard'

2017 Highlighted EGU Journal Watch: Nguyen et al., Has dyke development in the Vietnamese Mekong Delta shifted flood hazard downstream? *Hydrol. Earth Sys. Sci.*

2016 Highlighted EGU Journal Watch: Apel et al., Combined fluvial and pluvial urban flood hazard analysis: concept development and application to Can Tho city, Mekong Delta, Vietnam, *Nat. Hazards Earth Sys. Sci.*

2015 Highlighted EOS Spotlight: Merz et al., Charting unknown waters—On the role of surprise in flood risk assessment and management, *Water Resour. Res.*

#### SCIENTIFIC OUTPUT

Citations: 31,102 (Google Scholar), 19,555 (Scopus)

h-Index: 85 (Google Scholar), 72 (Scopus)

Publications: 304 (Google Scholar), 267 (Scopus)

#### 10 KEY PUBLICATIONS [number of citations in Google Scholar]

Najafi, H., Shrestha, P.K., Rakovec, O., Apel, H., Vorogushyn, S., Kumar, R., Thober, S., **Merz**, B., Samaniego, L. (2024). High-resolution impact-based early warning system for riverine flooding. *Nat. Commun.*, 15(1): 3726 [73]

**Merz**, B., Basso, S., Fischer, S., Lun, D., Blöschl, G., Merz, R., et al. (2022). Understanding heavy tails of flood peak distributions. *Water Resour. Res.*, 58(6), e2021WR030506 [95]

Apel, H., Vorogushyn, S., **Merz**, B. (2022). Brief communication: Impact forecasting could substantially improve the emergency management of deadly floods: case study July 2021 floods in Germany. *Nat. Hazards Earth Syst. Sci.*, 22(9): 3005-3014 [86]

**Merz**, B., Blöschl, G., Vorogushyn, S., Dottori, F., Aerts, J.C.J.H., Bates, P., et al. (2021). Causes, impacts and patterns of disastrous river floods. *Nature Rev. Earth Environ.*, 2, 592-609 [685]

**Merz**, B., Kuhlicke, C., Kunz, M., Pittore, M., Babeyko, A., Bresch, D.N. et al. (2020). Impact forecasting to support emergency management of natural hazards. *Rev. Geophys.*, 58(4) [317]

Blöschl, G., Hall, J., Viglione, A., Perdigão, R.A.P., Parajka, J., **Merz**, B., et al. (2019). Changing climate both increases and decreases European river floods. *Nature*, 573(7772), 108-111 [1,316]

**Aerts**, J.C.J.H., Botzen, W.J., Clarke, K.C., Cutter, L.S., Hall, J.W., Merz, B., et al. (2018). Integrating human behaviour dynamics into flood disaster risk assessment. *Nat. Clim. Change*, 8(3), 193-199 [671]

Blöschl, G., Hall, J., Parajka, J., Perdigão, R.A.P., **Merz**, B., Arheimer, B., et al. (2017). Changing climate shifts timing of European floods. *Science*, 357(6351), 588-590 [1,054]

**Merz**, B., Kreibich, H., Schwarze, R., Thielen, A. (2010). Assessment of economic flood damage. *Nat. Hazards Earth Syst. Sci.*, 10(8), 1697-1724 [1,727]

**Merz**, B., Hall, J., Disse, M., Schumann, A., (2010). Fluvial flood risk management in a changing world. *Nat. Hazards Earth Syst. Sci.*, 10(3): 509-527 [644]

#### DOCTORAL DISSERTATIONS SUPERVISED AND REVIEWED (finalized)

2026 Xiaoxiang Guan: Assessing the risk of compound pluvial and fluvial flooding. Main supervisor, University Potsdam

2026 Huazhi Li: Connected extremes: Capturing dependence in global-scale flood risk assessments. External reviewer, VU Amsterdam, The Netherlands

2026 Orou Moctar Ganni Mampo, Hydro-meteorological drought understanding and predictability across the Beniseke part of Niger River Basin in West Africa. External supervisor, University of Abomey-Calavi, Benin

2025 Luciano Pavesi: Flood risk assessment on large scale. External reviewer, Universita degli Studi di Roma Tre, Italy

2025 Paul Voit: From extreme precipitation to flash floods - Advancing hazard assessment with downward counterfactual scenarios. Second reviewer, University Potsdam

2024 Elena Macdonald: When extreme floods are not as rare as they seem: controls of heavy-tailed flood peak distribution. Main supervisor, University Potsdam

2024 Seth Bryant: Aggregation and Disaggregation in Flood Risk Models. Main supervisor, University Potsdam

2024 Anne Hartmann: Tracing subsurface hydrology across ten millennia based on two chronosequences of glacial moraines. Main supervisor, University Potsdam

2024 Madou Sougue: Flood risk and vulnerability of populations' analysis in Southern, Burkina Faso, External supervisor, WASCAL, Université de Lomé, Togo

2023 Lukas Schoppa: Dynamics in the Flood Vulnerability of Companies. Main supervisor, University Potsdam

2023 Le Duy Nguyen: Hydrological processes in the Vietnamese Mekong Delta: Insights from stable water isotopes and monitoring data analysis. Main supervisor, University Potsdam

2023 Abhirup Banerjee: Characterizing the spatio-temporal patterns of extreme events. Second supervisor, University Potsdam

2022 Matthias Kemter: Floods in a changing world. Main supervisor, University Potsdam

2022 Fabio Brill: Applications of machine learning and open geospatial data in flood risk modelling. Main supervisor, University Potsdam

2022 Ehsan Modiri: Clustering simultaneous occurrences of the extreme floods in the Neckar catchment. External reviewer, University Stuttgart

2022 Dirk Eilander: Towards global scale compound flood risk modelling. External reviewer, VU Amsterdam, The Netherlands

2021 Duha Ayse Metin: The role of risk components and spatial dependence in flood risk estimations. Main supervisor, University Potsdam

2021 Nguyen V.K. Triet: Flood dynamics in the Vietnamese Mekong Delta: current state & future projections. Main supervisor, University Potsdam

2021 Verena Maleska: A methodology for investigating the dynamics and uncertainties of flood risk – Frameworks and simulations regarding climate change, External reviewer, Technische Universität Dresden

2020 Alessio Ciullo: Systemic flood risk management planning: A decision-support framework for large-scale flood risk management planning accounting for risk-distribution across flood protected areas and deeply uncertain hydraulic interactions. External reviewer, Technical University Delft, The Netherlands

2020 Dennis Wagenaar: Capturing complexity: Transferable flood impact models with Machine Learning. External reviewer, Free University Amsterdam, The Netherlands

2020 Alex Curran: Flood risk analysis of embanked river systems: Probabilistic systems approaches for the Rhine and Po Rivers. External reviewer, Technical University Delft, The Netherlands

2019 Lisa Angermann: The use of tracers for the characterization of hydrological functional units. Main supervisor, University Potsdam

2019 Tobias Sieg: Reliability of flood damage estimations across spatial scales. Main supervisor, University Potsdam

2019 Dadiyoro Wendi: Recurrence plots and quantification analysis of flood runoff dynamics. Main supervisor, University Potsdam

2019 Viktor Rözer: Pluvial flood loss to private households. Main supervisor, University Potsdam

2019 Ankit Agarwal: Unravelling spatio-temporal climatic patterns via multi-scale complex networks. Second supervisor, University Potsdam

2019 Hong Xuan Do: Flood hazard characteristics at the global scale: An observation-based perspective. External reviewer, University of Adelaide, Australia

2019 Punit Kumar Bhola: Dynamic flood inundation forecasting in real-time including associated uncertainties for operational flood risk management. External reviewer, Technische Universität München

2019 Jonas Laudan: Changing susceptibility of flood-prone residents in Germany. Mental coping and mitigation behaviour in the context of different flood types. External reviewer, University Potsdam

2018 Aline Murawski: Trends in precipitation over Germany and the Rhine Basin related to changes in weather patterns. Main supervisor, University Potsdam

2018 Rui Figueiredo: Development of innovative methods and modelling approaches towards more balanced and efficient flood risk models. External reviewer, Scuola Universitaria Superiore IUSS Pavia, Italy

2018 Dominik Paprotny: Methods for improving pan-European flood risk mapping. External reviewer, Technical University Delft, The Netherlands

2018 Michael Hofstätter: Atmospheric cyclone tracks and large-scale precipitation under climate change conditions. External reviewer, Technical University Vienna, Austria

2017 Thi Chinh Do: Flood risk assessment: From understanding damaging processes to risk analysis in the Mekong delta, Vietnam. External reviewer, Humboldt-University Berlin

2016 Daniela Falter: A novel approach for large-scale risk assessments: Continuous and long-term simulation of the full flood risk chain. Main supervisor, University Potsdam

2016 Manuel Nied: The role of soil moisture and weather patterns for flood occurrence and characteristics at the river basin scale. Main supervisor, University Potsdam

2016 Klaus Schneeberger: Flood risk analysis in a meso-scale mountain catchment: Development and application of a probabilistic framework. External reviewer, Universität Innsbruck, Austria

2015 Doris Düthmann: Hydrological modeling of mountain catchments in Central Asia – approaches for data scarce catchments. Main supervisor, University Potsdam

2015 Yulizar: Investigation of changes in hydro-meteorological time series using depth-based functions. External reviewer, Universität Stuttgart

2015 Marjolein Mens: System robustness analysis in support of flood and drought risk management. External reviewer, University of Twente, The Netherlands

2015 Maarten Smoorenburg: Flood behaviour in alpine catchments examined and predicted from dominant runoff processes. External reviewer, ETH Zurich, Switzerland

2015 Lucas Kämpf: Extreme events in geoarchives: Deciphering processes of detrital flood layer formation in lake sediments. External reviewer, Universität Potsdam

2015 Helena Aastrom: An urban flood risk assessment method using Bayesian Network approach. External reviewer, Technical University Denmark, Denmark

2014 Van Manh Nguyen: Large-scale floodplain sediment dynamics in the Mekong Delta: present state and future prospects. Main supervisor, University Potsdam

2013 Steffi Uhlemann: Understanding trans-basin flood in Germany: Data, information and knowledge. Main supervisor, University Potsdam

2013 Jose Delgado: Explaining change in flood hazard in the Mekong river – The hypothesis of non-stationary variance. Main supervisor, University Potsdam

2013 Linda Speight: A multi-site methodology for understanding dependencies in flood risk exposure in the UK. External reviewer, University Newcastle, UK

2013 Tina Swierczynski: A 7,000 year runoff chronology from varved sediments of Lake Mondsee (Upper Austria). External reviewer, Universität Potsdam

2013 Xun Sun: Regional frequency analysis of precipitation accounting for climate variability and change. External reviewer, University Lyon, France

2012 Florian Elmer: Improving flood damage modelling: Damage assessment, model development and application. Main supervisor, Humboldt-Universität zu Berlin

2012 Shaochun Huang: Modelling of environmental change impacts on water resources and hydrological extremes in Germany. External reviewer, Universität Potsdam

2012 Qian-Qian Zhou: Urban drainage design and climate change adaptation decision making. External reviewer, Technical University Denmark; Denmark

2011 Björn Guse: Improving flood frequency analysis by integration of empirical and probabilistic regional envelope curves. Main supervisor, University Potsdam

2011 Dominik Reusser: Combining smart model diagnostics and effective data collection for snow catchments. External reviewer, Universität Potsdam

2011 Viet Dung Ngyuen: Multi-objective automatic calibration of hydrodynamic models – development of the concept and an application to the Mekong Delta. Main supervisor, University Stuttgart

2011 Hung Ngyuen: Sediment dynamics in the floodplains of the Mekong Delta. Main supervisor, University Stuttgart

2011 Imke Radtke: Methoden zur abgeleiteten Hochwasserstatistik unter Angabe von Unsicherheiten. External reviewer, University Hannover

2010 Susanna Werth: Calibration of the global hydrological model WGHM with water mass variations from GRACE gravity data. Main supervisor, University Potsdam

2010 Benjamin Creutzfeldt: The effect of water storages on temporal gravity measurements and the benefits for hydrology. Main supervisor, University Potsdam

2010 Abror Gafurov: Water balance modelling using remote sensing information: Focus on Central Asia. External reviewer, University Stuttgart

2010 Clemens Neuhold: Revised flood risk assessment: Quantifying epistemic uncertainty emerging from different sources and processes. External reviewer, Universität für Bodenkultur Wien, Austria

2010 Laurens Bouwer: Disasters and climate change: analyses and methods for projecting future losses from extreme weather. External reviewer, Free University Amsterdam, The Netherlands

2009 Matthias Kuhnert: Quantifizierung von Oberflächenabfluss und Erosion auf Böden mit hydrophoben Eigenschaften. Main supervisor, University Potsdam

2009 Theresia Petrow: Floods in Germany – Analyses of trends, seasonality and circulation patterns. Main supervisor, University Potsdam

2008 Sergiy Vorogushyn: Analysis of flood hazard under consideration of dike breaches. Main supervisor, University Potsdam

2008 Falk Lindenmaier: Hydrology of a large unstable hillslope at Ebnet, Vorarlberg – Identifying dominating processes and structures. External reviewer, Universität Potsdam

2008 Saskia Förster: An analysis of hydraulic, environmental and economic impacts of flood polder management at the Elbe River. External reviewer, Universität Potsdam

#### **HABILITATIONS REVIEWED**

2019 Kai Schröter: Improved flood risk assessment: New data sources and methods for flood risk modelling. Main reviewer, University Potsdam

2018 Daniel Vivioli: Water in mountain areas: Resource and threat. External reviewer, University Zurich, Switzerland

2018 Alberto Viglione: Understanding and estimating river flood hazards across timescales: from flood events to long-term dynamics. External reviewer, Vienna University of Technology, Austria

2009 Annegret Thielen: Floods, flood losses and flood risk management in Germany. Main reviewer, University Potsdam

#### **SUPERVISION OF EARLY CAREER SCIENTISTS AND POSTDOCS**

2025 – 2026 Kynhung Kim, Compound events: droughts, wildfires and floods

2025 – 2026 Milena Latinovic, Stochastic weather generator

2024 – 2026 Nithila Devi Nallasamy, Hydrodynamic simulation and GLOF modelling

2024 Dev Anan Thakur, Coastal multi-risk assessment

2023 – 2024 Abinesh Ganapathy, Non-stationary flood frequency analysis

2023 Ke He, Transport infrastructure failure

2023 Emixi Valdez, Flood impact forecasting

2023 Ze Jiang, Wavelet transformation and hydrological extremes

2022 – 2026 Li Han, Simulation of exceptional floods

2022 Antara Dasgupta, Compound events: floods and sediment

2020 – 2024 Gustavo Speckhann, Dams and flood risk reduction

2021 – 2022 Ravi Kumar Guntu, Compound events: dry and hot extremes

2019 – 2021 Yanhua Qin, Non-stationary flood frequency analysis

2018 – 2023	Mostafa Farrag, Large-scale hydrodynamic modelling
2017 – 2023	Björn Guse, Flood hazard modelling
2017 – 2020	Luzie Wietzke, Heavy-tail distributions
2015 – 2017	Poulomi Ganguli, Compound events under climate change
2014 – 2020	Eva Steirou, Flood frequency analysis, seasonal forecasting
2014 – 2019	Lars Gerlitz, Water in Central Asia, seasonal forecasting
2010 – 2013	Zhihua He, High-mountain hydrology in Central Asia
2012 – 2022	Kai Schröter, Flood hazard and vulnerability
2012 – 2013	Jenny Reusser, Floods and atmospheric rivers
2011 – 2022	Viet Dung Ngyuen, Hydrological extremes, flood risk assessment
2011 – 2014	Philip Müller, Paleofloods, Catchment monitoring
2012 – 2020	Stefan Lüdtke, Flood risk, Flood model chain development
2010 – 2013	Mathias Seibert, Seasonal forecasting
2010 – 2014	Ruth Bittner, Flood risk management
2010 – 2014	Jens Didzsun, Flood risk management
2009 – 2015	Katy Unger-Shayesteh, Water in Central Asia
2009 – 2014	Abror Gafurov, High-mountain hydrology
2007 – 2014	Yeshewatesfa Hundecha, Flood model chain development
2005 – 2008	Janek Zimmer, Disaster risk reduction
2005 – 2008	Katrin Fleischbein, Flood modelling
2004 – 2008	Karl-Erich Lindenschmidt, Flood simulation
2002 – 2008	Andreas Günther, Water cycle and GRACE
2002 – 2008	Heidi Kreibich, Flood damage assessment
2002 – 2005	Jochen Stuck, Disaster risk reduction
2000 – 2003	Jana Friedrich, Multi-risk assessment
2000 – 2002	Reginald Hermanns, Disaster management
2000 – 2008	Annegret Thielen, Flood hazard and flood damage
1997 – 2000	Birgit Zillgens, Process-based runoff modelling
1998 – 2000	Martin Gocht, Flood risk mapping

#### MENTORING ACTIVITIES

2022 – 2023	German Hydrological Society: Hossein Kazemi
2021 – 2024	WASCAL – West African Science Service Centre on Climate Change and Adapted Land Use: Jean Houkpe, Madou Sougue, Moctar Ganni
2021 – 2022	AGU mentoring program: Arundhuti Banerjee, Srinidhi Jha, Angelika Kübert, Gesa Meyer, Sara Mountaj

#### SUCCESS OF SUPERVISED RESEARCHERS

My students have received significant academic recognition:

2025	Elena Macdonald, Friedrich-Robert-Helmert Award 2025 for outstanding dissertation
2025	Ravi Kumar Guntu, Assistant Professor, BITS Pilani, India
2024	Heidi Kreibich, International Hydrology Prize (Volker Medal)
2024	Annegret Thielen, EGU Plinius Medal
2023	Ankit Agarwal, EGU Natural Hazards Division Outstanding Early Career Scientist Award
2022	Susanna Werth, Assistant Professor, Virginia Tech, USA
2020	Kai Schröter, Full Professor, Technical University Braunschweig
2019	Poulomi Ganguli, Assistant Professor, IIT Kharagpur, India
2019	Ankit Agarwal, Assistant Professor, IIT Roorkee, India
2015	Andreas Günther, Full Professor, University Potsdam
2011	Benjamin Creutzfeldt, Dresden Groundwater Research Award
2008	Annegret Thielen, Full Professor, University Innsbruck

## TEACHING ACTIVITIES

My teaching is focused on courses at the University of Potsdam, but I have also given classes at KIT (Karlsruhe Institute of Technology), Technical University of Stuttgart, Brandenburg University of Technology Cottbus, Free University Berlin and ETH Zurich. In addition, I contributed to international programs such as EuroAqua and Sino-German Summer Schools. My courses cover a broad spectrum of hydrology, modelling, statistical methods, natural hazards, and risk analysis and management at Bachelor and Master levels.

## ORGANISATION OF SCIENTIFIC MEETINGS

I have (co-)organized around 50 conferences, workshops or sessions and I have been member of more than 30 conference advisory boards. Selected examples:

- 2025 IGSTC Workshop: Unconventional Perspectives on Flood Risk, Potsdam, Organizer
- 2023 Panta Rhei Symposium (Final Symposium of the IAHS Scientific Decade), Potsdam, Member Local Organizing Team
- 2022 Helmholtz Cross-Topic Workshop on Extreme Hydro-Meteorological Events, Online, Organizer
- 2020 4th European Conference on Flood Risk Management, Budapest, Hungary, Member International Scientific Committee
- 2019 System-Risk Final Conference Flood Risk: Interactions, Temporal Changes and System Approaches, Potsdam, Organizer
- 2016 FloodRisk-2016, Lyon, France, Member International Scientific Committee
- 2015 geoBerlin 2015, Session Agriculture and Water Management, Berlin, Convenor
- 2013 Day of Hydrology 2013: Water Resources in Global Change, Berne, Switzerland, Member Scientific Committee
- 2013 4th Water Research Horizon Conference, Workshop Floods, Berlin, Organizer
- 2012 EGU Topical Meeting Floods and Climate, Potsdam, Organizer
- 2011 acatech Workshop Soil Moisture and Water, Potsdam, Organizer
- 2011 EGU Leonardo Conference on Floods, Bratislava, Slovakia, Member International Organizing Committee
- 2010 Conference on Water Resources in NE Germany, Potsdam, Organizer
- 2010 CEDIM – Willis Research Network Workshop, Potsdam, Organizer
- 2010 International Symposium Water in Central Asia, Tashkent, Uzbekistan, Co-Organizer
- 2008 RIMAX (Risk Management of Extreme Floods) Practitioner Workshop, Potsdam, Organizer
- 2006 EWC III Early Warning Conference, Bonn, Member Local Scientific Committee
- 2005 RIMAX Kick-off Conference, Potsdam, Organizer
- 2005 MEDIS Flood Damage Assessment Workshop, Dresden, Co-organizer
- 2004 Day of Hydrology 2004, Potsdam, Co-Organizer
- 2002 3rd Forum Disaster Prevention, Potsdam, Member Local Organizing & Program Committee
- 2001 DFG Roundtable Early Warning Systems, Bonn, Co-organizer
- 1999 German Research Network Natural Disasters, KickOff Workshop, Potsdam, Organizer

## INSTITUTIONAL RESPONSIBILITIES AND SERVICE ON SCIENTIFIC PANELS

- 2023 – today Member AGU Macelwane Medal Selection Committee
- 2023 – today Member JCAR-ATRACE Scientific Programme Council
- 2023 – today Member Advisory Board of EU project Water efficient allocation in a Central Asia trans-boundary river basin (WE-ACT)
- 2023 – today Member Advisory Board Journal Water Security
- 2021 – 2025 Member Extended Presidium of German Hydrological Society
- 2021 – 2023 Member Working Group Flow Statistics of NRW Commission Flood Protection in Times of Climate Change
- 2021 – 2023 Member Steering Committee Heavy Rainfall Initiative (German Climate Consortium)
- 2019 – 2021 Member AGU Natural Hazards Fellow Selection Committee
- 2017 – today GFZ spokesperson of MOSES (Modular Observations Solutions for Earth Systems) and member of MOSES Steering Group

2017 – 2022	Member EGU Plinius Medal Committee
2017 – 2022	Member DWA Working Group on Time-Variant Flood Risk Factors (German Association for Water, Wastewater, and Waste)
2017 – 2021	Member AGU Natural Hazards Executive Committee
2016 – 2020	GFZ Ombudsperson for doctoral researchers
2015 – 2019	Speaker Northeastern German Lowland Observatory (TERENO-NE)
2015 – 2019	Member Scientific Steering Committee of Tereno
2014 – 2018	Speaker Helmholtz Cross-Topic Natural hazards and warning systems
2014 – 2023	Member of IAHS Panta Rhei Working Group Understanding Flood Changes
2014 – 2023	Member of IAHS Panta Rhei Working Group Changes in Flood Risk
2014 – 2015	Member of Evaluation Committee for NWO Programme The New Delta, The Netherlands
2014	Member Review Panel for BMBF Programme Regional Water Resource Management
2011 – 2013	Member Advisory Board for Risk Assessment of Future Climate Impacts in the Real Estate and Housing Sector (ImmoRisk)
2010 – 2013	Member Advisory Board for EU project Sustainable Management of Water and Wastewater in Urban Growth Centers coping with Climate Change – Concepts for Lima Metropolitana, Peru (LiWa)
2009 – 2014	Member Management Board for COST Action ES0901 European Procedures for Flood Frequency Estimation (FlodFreq)
2007 – 2013	Speaker Topic Natural Hazards, Helmholtz Programme Geosystem: Changing Earth
2008 – 2015	Member Scientific Advisory Council, NFP Programme Sustainable Water Resources, Swiss National Science Foundation
2008 – 2012	Chair Working Group Climate Change and Water Cycle, acatech – National Academy of Science and Engineering, Germany
2008 – 2010	Reviewer for Doctoral Scholarships at DAAD (German Academic Exchange Service)
2008 – 2009	Member Working Group Protection against Extreme Events, German Adaptation Strategy to Climate Change - Identification of Research Needs
2007 – 2015	Member DWA Committee on Flood Prevention
2007 – 2008	Member Working Group on Indicators for Flood Prevention Evaluation at DWA
2006 – 2011	Deputy Speaker of CEDIM (Center for Disaster Management and Risk Reduction Technology)
2006 – 2009	Secretary Hydrological Hazards, EGU, Section Natural Hazards
2005 – 2007	Chairman DWA Committee on Flood Prevention
2005 – 2008	Member UNESCO Working Group Impact of Climate Variability and Land Use Change on Floods and Low Flows
2005 – 2007	Founding head of Committee Flood Mitigation, German Water Association
2004 – 2015	Member Coordination Committee CEDIM
2004 – 2011	Speaker Disaster Management and Global Risk Change Monitoring, Helmholtz Research Network Integrated Earth Observing System
2001 – 2004	Member Working Group Synopsis of Natural Hazards, German Research Network on Natural Disasters
2001 – 2002	Member Future Project Group, German Committee for Disaster Prevention
2000 – 2016	Member Scientific Advisory Board German Committee for Disaster Reduction
2000 – 2006	Member DWA Working Group on Runoff

### THIRD PARTY FUNDING

Since 1997 the majority of the researchers and PhD students in my working group have been funded by third party money. Selected examples:

2024 – 2028	JCAR-ATRACE – Joint cooperation on flood and drought management, Dutch Ministry for Infrastructure, €620k
2021 – 2024	Scientific support for reconstruction after the flood disaster in Rhineland-Palatinate and North Rhine-Westphalia (KAHR), BMBF, Co-PI, €384K

2020 – 2026	Linking extreme, large-scale river floods to climate and weather mechanisms (ClimX-treme), BMBF, PI and Co-PI, €850K
2020 – 2023	Space-time dynamics of extreme floods (SPATE), DFG Research Unit FOR 2416 – Co-PI, €536K
2017 – 2021	Digital Earth: Smart monitoring & integrated data exploration of the Earth system, Helmholtz, Co-PI, €531K
2016 – 2019	SYSTEM-RISK: A large-scale systems approach to flood risk assessment and management, EU H2020 MSCA-ITN, PI, €3.8M
2015 – 2024	Natural hazards and risks in a changing world (NatRiskChange), DFG Research Training Group, Co-PI, 6 PhD students funded
2008 – 2013	Water in Central Asia (CAWa), German Federal Office, PI, €2.4M
2005 – 2010	Risk management of extreme flood events (RIMAX), BMBF, PI, €747K
1999 – 2003	German Research Network for natural Disasters (DFNK, BMBF, PI, €1.8M

#### INVITED PRESENTATIONS

More than 100 invited contributions or keynote lectures at conferences and workshops. Selected examples:

2025	Understanding and managing Black Swans, Global Flood Partnership Annual Meeting, Budapest, Hungary
2025	Extreme flood events: Why are we not well prepared for extremes? And what to do?, Meeting of European Flood Directors, Rotterdam, The Netherlands
2024	Physical risks caused by flooding in Germany, Workshop German Society for Operational Risk Management, online
2023	Understanding and developing High-Impact / Low-Probability (HILP) flood events, IUGG 2023, Berlin
2022	How does an extreme event turn into a disaster? Mobiliar Lab Lectures, Berne, Switzerland
2021	Multi-hazard impact forecasting: Status and perspectives, RISK KAN Compound Event Webinar, online
2019	Regional patterns and processes of floods, Vienna Catchment Symposium, Vienna, Austria
2017	How confident can we be in flood risk assessments? AGU, New Orleans, USA

#### EDITOR ACTIVITIES

2016 – 2023	Section Editor, Water Security
2013 – 2017	Associated Editor, Journal of Hydrology
2012 – 2020	Associate Editor, Natural Hazards and Earth System Sciences
2011 – today	Editor, Hydrologie und Wasserbewirtschaftung

#### REVIEWER ACTIVITES FOR FUNDING AGENCIES AND INSTITUTIONS

- German Academy of Science and Engineering (acatech)
- AXA Research Fund, France
- Federal Ministry of Education and Research (BMBF), Germany
- Canada Research Chairs Program (CRCP), Canada
- Czech Academy of Sciences, Czech Republic
- *German Academic Exchange Service (DAAD)*, Germany
- German Science Foundation (DFG), Germany
- Directorate-General for Science, Research and Development, European Union
- Fonds National de la Recherche, Luxembourg
- *Austrian Science Fund (FWF), Austria*
- Alexander von Humboldt Foundation, Germany
- Intergovernmental Panel on Climate Change (IPCC)
- Natural Sciences and Engineering Research Council (NSERC), Canada
- Netherlands Organisation for Scientific Research (NWO), The Netherlands

- National Environment Research Council (NERC), UK
- Okinawa Institute of Science and Technology (OIST), Japan
- Swiss National Science Foundation, Switzerland
- Technology Foundation STW, The Netherlands
- Velux Foundation, Denmark
- Vienna Science and Technology Fund, Austria

**REVIEWER ACTIVITIES**

Regular reviewer of manuscripts for the following scientific journals:

Atmospheric Research; Catena; Community Science; Earth's Future; Environmental Modelling and Software; Environmental Science & Policy; Frontiers in Climate; Frontiers in Water; Geophysical Research Letters; Georisk; Geoscientific Model Development; Global and Planetary Change; Hydrologie und Wasserbewirtschaftung; Hydrology and Earth System Sciences; Hydrological Processes; Hydrological Science Journal; IAHS (International Association of Hydrologic Science) Publications; Journal for Hydraulic Research; Journal of the American Water Resources Association; Journal of Hydrology; Journal of River Basin Management; Natural Hazards; Natural Hazards and Earth System Sciences; Nature; Nature Cities; Nature Climate Change; Nature Sustainability; npj Natural Hazards; Review of Geophysics; Risk Analysis; Science; Science of the Total Environment; Sustainable Cities and Society; Water Resources Research; Water Security; Water Supply