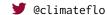
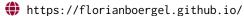
Dr. Florian Börgel

florianboergel@gmail.com







Professional Employment

- **Tenure-track researcher** Dynamics of regional climate systems, Leibniz Institute for Baltic Sea Research, Germany, Rostock
 - Regional climate variability and the teleconnection between the North Atlantic and Northern Europe
 - Forecasting river runoff using Recurrent Neural Networks
 - · Ocean oxygen variability during the last millennium

2019 - 2020	Parental leave 15 months
2017 - 2020	Research scientist Dynamics of regional climate systems, Leibniz Institute for Baltic Sea Research, Germany, Rostock
2016 - 2017	Research assistant Biogeochemical modeling, Leibniz Institute for Baltic Sea Research, Germany, Rostock
2014 - 2015	Research assistant Energy Systems Analysis, Fraunhofer Institute for Manufacturing Technology and Applied Materials, Germany, Bremen
	Technical support EWE Baskets Oldenburg, Germany, Oldenburg
2013 - 2014	Student assistant Engineering company for environment and climate action plans for cities, energieLenker GmbH, Germany, Münster

Education

09/2017 - 10/2020	Ph.D., Physics in Physical Oceanography, with honors (summa cum laude), Leibniz Institute for Baltic Sea Research
10/2014 - 09/2017	M.Sc. Engineering Physics in Computational physics, very good (1.2), University of Oldenburg
09/2010 - 02/2014	B.Eng. Energy Engineering. good (2.0). Münster University of Applied Sciences

Honors and relevant responsibilities

- Co-Speaker Baltic Earth Working Group The international working group focuses on the impact of the North Atlantic on the Baltic Sea from synoptic to decadal/centennial time scales (more at https://baltic.earth/working_groups/teleconnections/)
 - Outstanding Early Career Scientist award Ocean Science Division, European Geosciences Union, https://www.egu.eu/awards-medals/
 - **IOW appointee for the Deutsches Klima-Konsortium (DKK)** The Deutsches Klima-Konsortium (DKK) represents the leading players of German climate and climate impact research.
- Google Cloud Research Grant Forecasting river runoff using Recurrent Neural Networks, worth
- Fulbright Scholarship Full scholarship to study in the United States for one year (not attended for personal reasons)

Skills

Languages

German (native), English (C1), French (B1)

Coding

Expert: python, Matlab, Linux/Unix, git, HPC computing, Twitter API **Advanced**: R, Fortran, Pytorch, julia, docker **Basic**: Django, C, HTML, Java, Tensorflow

Methods

Singular value decomposition, low-frequency component analysis, multi-regression analysis for data prediction, time series prediction using recurrent neural networks, cluster analysis (k-Means), big data handling (TB), wavelet analysis

Software Development

pyTEF

pyTEF is a python package that can be used to apply the total exchange analysis framework to analyze the exchange flow of an estuary. https://github.com/florianboergel/pyTEF

Twitter API

Twitter bot @ozeanforscher was built using the Twitter API and posts job offers related to marine science. It has about 1,750 followers. For more see https://florianboergel.github.io/outreach/forum_wisskomm_2018

Teaching

WS 2022/2023

Climate of the Earth University of Rostock, master level, co-instructor, see the interactive online lecture

WS 2021/2022

Baltic Earth Winter School University of Rostock, master and Ph.D. students, Interactive lecture about wavelet analysis and statistics

WS 2021/2022

Climate of the Ocean University of Rostock, master level, co-instructor

WS 2020/2021

Climate of the Ocean University of Rostock, master level, co-instructor

WS 2018/2019

Baltic Earth Winter School University of Rostock, Interactive lecture about wavelet analysis

WS 2018/2019

Climate of the Ocean University of Rostock, master level, co-instructor

Supervising

2023

■ Bachelor student Marti Wolff, co-supervisor

Thesis title: Analysis of Baltic Sea climate based on climate model data from 6000 BCE to 1850 CE

since 2022

PhD student Leonie Barghorn, co-supervisor

Thesis title: Understanding Baltic Sea saltwater inflow dynamics under changing climate

Research Publications

Journal Articles

- **Börgel**, **F.**, Neumann, T., Rooze, J., Radtke, H., Barghorn, L., & Meier, H. (n.d.). Deoxygenation of the Baltic Sea during the last millenium. *Frontiers in Marine Science*. under review.
- Dutheil, C., **Börgel**, **F.**, Gröger, M., & Meier, H. E. M. (n.d.). Changes in spatial structure of weather regimes dominate european precipitation changes since 1950. *Sciences advances*. under review.
- Gröger, M., Dutheil, C., **Börgel**, **F.**, & Meier, H. E. M. (n.d.). Winter marine heatwaves promoted by warm deepwater showcased in a sub-polar marginal sea. *Communications Earth & Environment*. under review.
- 4 Aue, L., & **Börgel**, **F.** (2023). From "Bangtan Boys" to "International Relations Professor": Mapping Self-Identifications in the UN's Twitter Public. *Politics and Governance*. accepted.
- **Börgel**, F., Gröger, M., Meier, H. E. M., Dutheil, C., Radtke, H., & Borchert, L. (2023). The impact of atlantic multidecadal variability on Baltic Sea temperatures is limited to winter. *npj Climate and Atmospheric Science*. accepted.

- Meier, H. E. M., Barghorn, L., **Börgel**, **F.**, Gröger, M., Naumov, L., & Radtke, H. (2023). Multidecadal climate variability dominated past trends in the water balance of the Baltic Sea catchment area. *npj Climate and Atmospheric Science*. accepted.
- 7 Dutheil, C., Meier, H. E. M., Gröger, M., & **Börgel**, **F.** (2022). Warming of Baltic Sea water masses since 1850. Climate Dynamics. Odi:10.1007/s00382-022-06628-z
- Gröger, M., Placke, M., Meier, M., **Börgel**, F., Brunnabend, S.-E., Dutheil, C., ... Väli, G. (2022). The Baltic Sea Model Inter-Comparison Project BMIP a Platform for Model Development, Evaluation, and Uncertainty Assessment. *Geoscientific Model Development Discussions*, 1–34. Publisher: Copernicus GmbH. Ø doi:10.5194/gmd-2022-160
- 9 Börgel, F., Meier, H. E. M., Gröger, M., Rhein, M., Dutheil, C., & Kaiser, J. M. (2022). Atlantic Multidecadal Variability and the Implications for North European Precipitation. *Environmental Research Letters*, 17(4), 044040. Publisher: IOP Publishing. 6 doi:10.1088/1748-9326/ac5ca1
- Meier, H. E. M., Kniebusch, M., Dieterich, C., Gröger, M., Zorita, E., Elmgren, R., ... Zhang, W. (2022). Climate Change in the Baltic Sea Region: A Summary. *Earth System Dynamics*, 13(1), 457–593. Publisher: Copernicus GmbH. 6 doi:10.5194/esd-13-457-2022
- Meier, H. E. M., Dieterich, C., Gröger, M., Dutheil, C., **Börgel**, **F.**, Safonova, K., ... Kjellström, E. (2022). Oceanographic Regional Climate Projections for the Baltic Sea until 2100. *Earth System Dynamics*, 13(1), 159–199. Publisher: Copernicus GmbH. 6 doi:10.5194/esd-13-159-2022
- Dutheil, C., Meier, H. E. M., Gröger, M., & **Börgel**, **F.** (2021). Understanding Past and Future Sea Surface Temperature Trends in the Baltic Sea. *Climate Dynamics*. Odo:10.1007/s00382-021-06084-1
- Börgel, F., Frauen, C., Neumann, T., & Meier, H. E. M. (2020). The Atlantic Multidecadal Oscillation Controls the Impact of the North Atlantic Oscillation on North European Climate. *Environmental Research Letters*, 15(10), 104025. Publisher: IOP Publishing. 6 doi:10.1088/1748-9326/aba925
- Meier, H. E. M., **Börgel**, **F.**, Frauen, C., & Radtke, H. (2020). Commentary: Lake or Sea? The Unknown Future of Central Baltic Sea Herring. *Frontiers in Ecology and Evolution*, 8. Retrieved September 24, 2022, from **6** https://www.frontiersin.org/articles/10.3389/fevo.2020.00055
- Radtke, H., **Börgel**, **F.**, Brunnabend, S.-E., Eggert, A., Kniebusch, M., Meier, H. E. M., ... Placke, M. (2019). Validator a Web-Based Interactive Tool for Validation of Ocean Models at Oceanographic Stations. *Journal of Open Research Software*, 7(1), 18. Number: 1 Publisher: Ubiquity Press. 6 doi:10.5334/jors.259
- Kniebusch, M., Meier, H. M., Neumann, T., & **Börgel**, **F.** (2019). Temperature Variability of the Baltic Sea Since 1850 and Attribution to Atmospheric Forcing Variables. *Journal of Geophysical Research: Oceans*, 124(6), 4168–4187. Oceans, doi:10.1029/2018JC013948

Scientific Presentations

- **EGU General Assembly**, Speaker medal lecture, Atlantic Multidecadal Variability and the Implications for North European climate
- Research Unit Climate Modeling, University of Hamburg, Speaker, Atlantic Multidecadal Variability and the implications for North European Climate
 - Baltic Earth Conference, Speaker, Atlantic Multidecadal Variability and the implications for North European Climate
- 2021 University of Bremen physics seminar, Speaker, Atlantic Multidecadal Variability and the implications for North European Climate
 - **EGU General Assembly**, Speaker, The Atlantic Multidecadal Oscillation controls the impact of the North Atlantic Oscillation on North European climate

Scientific Presentations (continued)

- **EGU General Assembly**, Poster session, The impact of the Atlantic Multidecadal Oscillation on Baltic Sea variability
- **Baltic Earth Conference**, Speaker, The impact of the Atlantic Multidecadal Oscillation on Baltic Sea variability
- Baltic Sea Science Congress, Poster session, The influence of sea ice on Baltic Inflows

Outreach

- Visit of Katrin Zschau (Member of the German Bundestag), I presented the ongoing activities related to climate modeling
- Contributor to the Baltic Sea Climate Change Fact Sheets published within EN-CLIME, a joint expert network by HELCOM and Baltic Earth
- Visit of Dr. Ingrid Nestle (Member of the German Bundestag), I invited Dr. Nestle and organized her visit to the Leibniz Institute for Baltic Sea Research
- Reviewer for the IPCC Special Report on the Ocean and Cryosphere in a Changing Climate (SROCC)
 - Coastal Research on Tour, I presented my research to a broad audience, organized by Helmholtz center Hereon
 - Warnemünder Abende, Presenting my research to a broad audience, organized by Leibniz-Institute for Baltic Sea Research
 - Rostock's Eleven, science communication challenge, nominee for the Leibniz Institute for Baltic Sea Research
- Create your own #Scicomm bot, speaker, host of an interactive session at Forum Wissenschaftskommunikation (German forum science communication)

Volunteering

- **Board member**, Bündnis 90/Die Grünen, Rostock
 - 2021 Committee member, urban development, City of Rostock
- 2020-2022 **Deputy speaker**, state working group 'Energy and Climate', Bündnis 90/Die Grünen
 - 2019 **Candidate**, local election in Rostock, Bündnis 90/Die Grünen
- 2019-2022 Member Radentscheid Rostock, citizen-initiated cycling referendum for the City of Rostock
 - 2018 Co-organization, young scientists event, Baltic Earth Conference