

# Dr. Sebastian Mieruch-Schnülle

*Curriculum Vitae*

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## Education

- 2009 **PhD in Physics**, *Institute of Environmental Physics*, University of Bremen, Germany.
- 2006 **Diploma in Physics**, *Theoretical Physics / Complex Systems*, University of Oldenburg, Germany.

## Experience

- 2021–Present **Group Leader**, ALFRED-WEGENER-INSTITUTE, Bremerhaven, Germany, M-VRE: The MOSAiC Virtual Research Environment, <https://mosaic-vre.org/team>.
- 2016–Present **Scientific Software Developer**, ALFRED-WEGENER-INSTITUTE, Bremerhaven, Germany.
  - 2012–2016 **Climate Researcher**, KARLSRUHE INSTITUTE OF TECHNOLOGY, Karlsruhe, Germany.
  - 2011–2012 **Climate Researcher**, SATELLITE APPLICATION FACILITY ON CLIMATE MONITORING, German Weather Service, Offenbach, Germany.
  - 2006–2010 **Climate Researcher**, INSTITUTE OF ENVIRONMENTAL PHYSICS, Bremen, Germany.

## Projects

- 2023–Present **Blue-Cloud2026**, OPEN SCIENCE FOR OCEAN SUSTAINABILITY, Developer, EU.
- 2021–Present **M-VRE**, THE MOSAiC VIRTUAL RESEARCH ENVIRONMENT, Project coordinator, BMBF.
- 2021–Present **AutoQC**, AUTOMATED OCEAN DATA QUALITY CONTROL USING DEEP LEARNING., PhD supervisor, MarDATA.
- 2020–Present **EGI-ACE**, WEBODV IN THE EUROPEAN OPEN SCIENCE CLOUD (EOSC), Developer, EU.
  - 2016–2020 **SeaDataCloud**, WEBODV: THE ONLINE VERSION OF ODV, Developer, EU.
  - 2012–2015 **MiKlip**, DECADEAL CLIMATE PREDICTIONS, Researcher, BMBF.
  - 2011–2012 **ESA-CCI**, ESSENTIAL CLIMATE VARIABLES, Researcher, ESA.

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## Web projects

- 2021–Present **M-VRE**, <https://mosaic-vre.org>, Online tools for the exploration, extraction, analysis and visualization of MOSAiC data..
- 2018–Present **SalaciaML**, <https://salacia-ml.awi.de>, An artificial intelligence project with the aim to develop a deep learning algorithm for supporting marine data quality control..
- 2017–Present **webODV**, <https://webodv.awi.de>.
- <https://mvre.webodv.cloud.awi.de>
  - <https://geotraces.webodv.awi.de>
  - <https://emodnet-chemistry.webodv.awi.de>
- Operational online services for the analysis, visualization and extraction of oceanographic data.
- 2019–Present **hummingage**, <https://hummingage.awi.de>, An easy to use, transparent and fast online tool for regressing age depth data from sediment cores..
- 2016–Present **hummingbird-treeview**, <https://github.com/hummingbird-dev/hummingbird-treeview>, A powerful and fast jQuery treeview plugin.

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## Professional Activities

- Membership
- SeaDataNet community
  - European Geophysical Union
  - American Geophysical Union
  - CLM community
- Reviewer for
- Frontiers of Marine Science
  - Journal of Climate
  - Water Resources Research
  - Philosophical Transactions of the Royal Society Series A
  - Advances in Space Research
- Chair
- Primary convener of the session “Regional Decadal Prediction” at the AGU 2014
  - Co-chairing the session “Climate General Contributions II” at the AGU 2009

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## Invited talks

- 2022 **M-VRE: The MOSAiC Virtual Research Environment**, *BAM Berlin*, Remote video presentation, Dr. C. Maierhofer, Themenfeld-Tag "Analytical Sciences".
- 2021 **Markov Chain Analysis**, *University Potsdam*, Remote video presentation, Prof. Silvie Roelly, Klimacampus 2021.
- 2018 **webODV – Ocean Data View online**, *Scripps Institution of Oceanography*, Remote video presentation, Stephen Diggs.
- 2013 **Recalibration of regional decadal hindcasts**, *University of Heidelberg*, Prof. Dr. T. Gneiting.
- 2010 **Causality of CO<sub>2</sub> and temperature changes**, *PIK Potsdam*, Dr. N. Marwan.

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## Awards

- 2019 “Most accurate team” price at the Dresden Deep Learning Hackathon: <https://indico.mpi-cbg.de/event/186/page/21-our-teams>
- 2008 First price for the poster presentation in the climate session of the AGU Chapman Conference on Atmospheric Water Vapor and its Role in Climate.
- 2006 Heinz Neumüller PhD scholarship.

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## Author level, 12/2022

- Web of Science **h-index: 10**, 485 citations (without self citations).
- Google **h-index: 13**, 734 citations.
- ORCID **<https://orcid.org/0000-0003-1150-221X>**.

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## Selected publications

- 2021 **Deglacial patterns of South Pacific overturning inferred from 231Pa and 230Th**, Ronge, T.A., Lippold, J., Geibert, W., Jaccard, S.L., Mieruch-Schnülle S., Süfke F., and Tiedemann R., *Sci Rep* 11, 20473 (2021). <https://doi.org/10.1038/s41598-021-00111-1>.
- 2021 **SalaciaML: A Deep Learning Approach for Supporting Ocean Data Quality Control**, Mieruch, S., Demirel, S., Simoncelli, S., Schlitzer, R., and Seitz, S., *Front. Mar. Sci.* 8:611742. doi: 10.3389/fmars.2021.611742.
- 2019 **Development and prospects of the regional MiKlip decadal prediction system over Europe: predictive skill, added value of regionalization, and ensemble size dependency**, Reyers, M., Feldmann, H., Mieruch, S., Pinto, J. G., Uhlig, M., Ahrens, B., Früh, B., Modali, K., Laube, N., Moemken, J., Müller, W., Schädler, G., and Kottmeier, C., *EARTH SYST. DYNAM.*, 10, 171-187.
- 2018 **The GEOTRACES Intermediate Data Product 2017**, Schlitzer, Reiner; Anderson, Robert F.; Dodas, Elena Masferrer; et al., *CHEMICAL GEOLOGY* Volume: 493 Pages: 210-223.
- 2016 **Compound extremes in a changing climate - a Markov chain approach**, Sedlmeier, Katrin; Mieruch, Sebastian; Schaedler, Gerd; et al., *NONLINEAR PROCESSES IN GEOPHYSICS* Volume: 23 Issue: 5 Pages: 375-390.
- 2016 **A new estimator of heat periods for decadal climate predictions - a complex network approach**, Weimer, Michael; Mieruch, Sebastian; Schaedler, Gerd; et al., *NONLINEAR PROCESSES IN GEOPHYSICS* Volume: 23 Issue: 4 Pages: 307-317.
- 2014 **The regional MiKlip decadal forecast ensemble for Europe: the added value of downscaling**, Mieruch, S.; Feldmann, H.; Schaedler, G.; et al., *GEOSCIENTIFIC MODEL DEVELOPMENT* Volume: 7 Issue: 6 Pages: 2983-2999.