# Robert Ricker

rori@norceresearch.no
orcid.org/0000-0001-6928-7757
www.norceresearch.no/en/persons/robert-ricker
Forskningsparken Tromsø
Sykehusvn 23
9019 Tromsø


## Education

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| 2011–2015* | **Ph.D.**, Geosciences, Alfred-Wegener-Institut Helmholtz-Zentrum für Polar- und Meeresforschung & Jacobs University Bremen |
| 2008-2011 | **Dip.**, Geophysics, Friedrich-Schiller University Jena & Università degli Studi di Trieste |
| 2005-2008 | **Pre-Dip.** Physics, Philipps University Marburg |

## Research Experience

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| 2021– | Senior Scientist, Earth Observation, NORCE Norwegian Research Centre |
| 2017–2021 | Postdoctoral Researcher, Sea Ice Physics, Alfred-Wegener-Institut Helmholtz-Zentrum für Polar- und Meeresforschung |
| 2016–2017 | Postdoctoral Fellowship, Laboratoire d'Océanographie Physique et Spatiale, L'Institut français de recherche pour l'exploitation de la mer, Brest (IFREMER) |
| 2015–2016 | Postdoctoral Researcher, Sea Ice Physics, Alfred-Wegener-Institut Helmholtz-Zentrum für Polar- und Meeresforschung |
| 2011–2015 | Research Associate / PhD Candidate, Sea Ice Physics, Alfred-Wegener-Institut Helmholtz-Zentrum für Polar- und Meeresforschung |

## Research Interests

- Satellite remote sensing of the cryosphere
- Satellite altimetry over sea ice
- Sea ice thickness distribution across both hemispheres
- Atmosphere-ice-ocean interactions

## Field Work

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| 2025 | **ST3TART-FO**, Sentinel-3 validation on Svalbard using *SnowDrone* |
| 2024 | **SNOWDRONE**, Snow depth surveys on sea ice in Van Mijenfjord, Svalbard |
| 2020 | **MOSAiC drift experiment (PS-122.3)**, Research Vessel *Polarstern* |
| 2019 | **ICEBIRD**, Airborne surveys over Arctic sea ice, Research Aircraft *Polar-6* |
| 2017 | **PAMARCMIP**, Airborne surveys over Arctic sea ice, Research Aircraft *Polar-5* |
| 2015 | **PS-94**, Arctic Ocean expedition, Research Vessel *Polarstern* |
| 2013 | **AMASIM**, Airborne surveys over Antarctic sea ice, Research Aircraft *Polar-6* |

2013 **PS-81**, Expedition to the Weddell Sea, Southern Ocean, Research Vessel *Polarstern*
2012 **CryoVEx**, Airborne surveys north of Svalbard
2011 **PS-78**, Arctic Ocean expedition, Research Vessel *Polarstern*

## Conferences

### Invited Talks

2019 Dynamic and thermodynamic sea ice growth in the Arctic from 2002–2017. **Sea Ice in the Earth System: A Multidisciplinary Perspective**, Brest, France.
2019 Merged operational satellite ice thickness retrievals to inform about the present state of Arctic sea ice. **European Geosciences Union General Assembly**, Vienna, Austria.
2017 Sea ice thickness derived from radar altimetry: achievements and future plans. **American Geophysical Union Fall Meeting**, San Francisco, USA.
2016 Remote Sensing of Snow on Sea Ice. **ESA Advanced Training Course on Remote Sensing of the Cryosphere (Invited Lecture)**, Leeds, UK.
2016 Sea Ice Thickness obtained from Space. **L'Institut français de recherche pour l'exploitation de la mer (Ifremer)**, Brest, France.
2015 The impact of the snow cover on sea-ice thickness products retrieved by Ku-band radar altimeters. **American Geophysical Union Fall Meeting**, San Francisco, USA.

### Session Chairing

2025 ESA Living Planet Symposium, Vienna – **Arctic and Antarctic Sea Ice in the Earth System: Advancing Research with Remote Sensing, In-Situ Observations, and Modeling**
2023 International Symposium on Sea Ice, Bremerhaven – **Sea Ice Remote Sensing**
2021 CryoSat 10th Anniversary Science Conference, Virtual – **Sea Ice**

## Media and Outreach

2021 UFA documentary on MOSAiC: *Expedition Arktis / Arctic Drift*
2021 Article about Atlantification on ESA News

- Posts on private LinkedIn account
- Articles and contributions on Meereisportal News
- Articles and contributions on Helmholtz Polarstern Blog
- Articles and contributions on AWI News
- Interviews on the state of Arctic sea ice for newspapers, e.g., Süddeutsche Zeitung

## Publications

Google Scholar | h-index: 37

### Peer-Reviewed Journal Articles (10 Most Recent)


Ricker, R., Lavergne, T., Hendricks, S., Paul, S., Down, E., Killie, M. A., & Bocquet, M. (2025). Drift-aware sea ice thickness maps from satellite remote sensing. *EGUsphere*, *2025*, 1–27. https://doi.org/10.5194/egusphere-2025-359

Kaleschke, L., Tian-Kunze, X., Hendricks, S., & Ricker, R. (2024). Smos-derived antarctic thin sea ice thickness: Data description and validation in the weddell sea. *Earth System Science Data*, *16*(7), 3149–3170. https://doi.org/10.5194/essd-16-3149-2024

Wang, K., Wang, C., Dinessen, F., Spreen, G., Ricker, R., & Tian-Kunze, X. (2024). Multisensor data fusion of operational sea ice observations. *Frontiers in Marine Science*, *Volume 11 - 2024*. https://doi.org/10.3389/fmars.2024.1366002

Doglioni, F., Ricker, R., Rabe, B., Barth, A., Troupin, C., & Kanzow, T. (2023). Sea surface height anomaly and geostrophic current velocity from altimetry measurements over the arctic ocean (2011–2020). *Earth System Science Data*, *15*(1), 225–263. https://doi.org/10.5194/essd-15-225-2023

Hutter, N., Hendricks, S., Jutila, A., Ricker, R., von Albedyll, L., Birnbaum, G., & Haas, C. (2023). Digital elevation models of the sea-ice surface from airborne laser scanning during mosaic. *Scientific Data*, *10*(1), 729. https://doi.org/10.1038/s41597-023-02565-6

Itkin, P., Hendricks, S., Webster, M., von Albedyll, L., Arndt, S., Divine, D., Jaggi, M., Oggier, M., Raphael, I., Ricker, R., Rohde, J., Schneebeli, M., & Liston, G. E. (2023). Sea ice and snow characteristics from year-long transects at the mosaic central observatory. *Elementa: Science of the Anthropocene*, *11*(1), 00048. https://doi.org/10.1525/elementa.2022.00048

Neckel, N., Fuchs, N., Birnbaum, G., Hutter, N., Jutila, A., Buth, L., von Albedyll, L., Ricker, R., & Haas, C. (2023). Helicopter-borne rgb orthomosaics and photogrammetric digital elevation models from the mosaic expedition. *Scientific Data*, *10*(1), 426. https://doi.org/10.1038/s41597-023-02318-5

Ricker, R., Fons, S., Jutila, A., Hutter, N., Duncan, K., Farrell, S. L., Kurtz, N. T., & Fredensborg Hansen, R. M. (2023). Linking scales of sea ice surface topography: Evaluation of icesat-2 measurements with coincident helicopter laser scanning during mosaic. *The Cryosphere*, *17*(3), 1411–1429. https://doi.org/10.5194/tc-17-1411-2023

Salganik, E., Lange, B. A., Itkin, P., Divine, D., Katlein, C., Nicolaus, M., Hoppmann, M., Neckel, N., Ricker, R., Høyland, K. V., & Granskog, M. A. (2023). Different mechanisms of arctic first-year sea-ice ridge consolidation observed during the mosaic expedition. *Elementa: Science of the Anthropocene*, *11*(1), 00008. https://doi.org/10.1525/elementa.2023.00008

Willatt, R., Stroeve, J. C., Nandan, V., Newman, T., Mallett, R., Hendricks, S., Ricker, R., Mead, J., Itkin, P., Tonboe, R., Wagner, D. N., Spreen, G., Liston, G., Schneebeli, M., Krampe, D., Tsamados, M., Demir, O., Wilkinson, J., Jaggi, M., … Oggier, M. (2023). Retrieval of snow depth on arctic sea ice from surface-based, polarimetric, dual-frequency radar altimetry. *Geophysical Research Letters*, *50*(20), e2023GL104461. https://doi.org/https://doi.org/10.1029/2023GL104461


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