

## Robert Ricker

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### Education

- 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

- 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

- 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	<b>PS-81</b> , Expedition to the Weddell Sea, Southern Ocean, Research Vessel <i>Polarstern</i>
2012	<b>CryoVEx</b> , Airborne surveys north of Svalbard
2011	<b>PS-78</b> , Arctic Ocean expedition, Research Vessel <i>Polarstern</i>

## Conferences

### Invited Talks

2025	Drift-aware satellite-derived sea ice thickness maps. (declined because of other commitments) <b>American Geophysical Union Fall Meeting</b> , San Francisco, USA.
2019	Dynamic and thermodynamic sea ice growth in the Arctic from 2002–2017. <b>Sea Ice in the Earth System: A Multidisciplinary Perspective</b> , Brest, France.
2019	Merged operational satellite ice thickness retrievals to inform about the present state of Arctic sea ice. <b>European Geosciences Union General Assembly</b> , Vienna, Austria.
2017	Sea ice thickness derived from radar altimetry: achievements and future plans. <b>American Geophysical Union Fall Meeting</b> , San Francisco, USA.
2016	Remote Sensing of Snow on Sea Ice. <b>ESA Advanced Training Course on Remote Sensing of the Cryosphere (Invited Lecture)</b> , Leeds, UK.
2016	Sea Ice Thickness obtained from Space. <b>L'Institut français de recherche pour l'exploitation de la mer (Ifremer)</b> , Brest, France.
2015	The impact of the snow cover on sea-ice thickness products retrieved by Ku-band radar altimeters. <b>American Geophysical Union Fall Meeting</b> , San Francisco, USA.

### Session Convener

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

## Media and Outreach

2025	Article on satellite technology advancing sea ice thickness mapping, <a href="#">ESA News</a>
2021	UFA documentary on MOSAiC: <a href="#">*Expedition Arktis / Arctic Drift*</a>
2021	Article on Atlantification, <a href="#">ESA News</a>
	<ul style="list-style-type: none"> <li>• Posts on private <a href="#">LinkedIn account</a></li> <li>• Articles and contributions on <a href="#">Meereisportal News</a></li> <li>• Articles and contributions on <a href="#">Helmholtz Polarstern Blog</a></li> <li>• Articles and contributions on <a href="#">AWI News</a></li> <li>• Interviews on the state of Arctic sea ice for newspapers, e.g., <i>Süddeutsche Zeitung</i></li> </ul>

## 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. *The Cryosphere*, 19(9), 3785–3803. <https://doi.org/10.5194/tc-19-3785-2025>
- 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/10.1029/2023GL104461>

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