Oskar Glowacki

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Research topics: ice/ocean interactions, underwater acoustics, physical oceanography

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PROFESSIONAL PREPARATION

Institute of Geophysics PAS, Earth and Environ. Sciences, **Habilitation (Honors)** 2023

Institute of Geophysics PAS, Earth Sciences - Geophysics, **Ph.D. (Honors)** 2017

University of Gdansk, Oceanography - Marine Physics, **M.Sc.** 2012

University of Gdansk, Oceanography - Physical oceanography, **B.Sc.** 2010

APPOINTMENTS

Dec. 2023 – present	Associate Professor	Institute of Geophysics PAS, Poland
Dec. 2020 – Nov. 2023	Assistant Professor	Institute of Geophysics PAS, Poland
May 2018 – Nov. 2020	Postdoc	Scripps Institution of Oceanography University of California San Diego, USA
Jun., 2017 – Apr., 2018	Assistant Professor	Institute of Geophysics PAS, Poland

AWARDS

Award of the **Polish Prime Minister** for the PhD thesis; 2018 – **from 25 awards nationwide in all research disciplines**

Scholarship awarded by the **Polish Minister of Science and Higher Education** for outstanding Early Career Scientists; 2021

Maurycy Pius Rudzki Prize for outstanding and creative achievements in geography/oceanography/meteorology; Department III – Physical and Earth Sciences of the Polish Academy of Sciences; 2022 - **from 1 prize nationwide**

Kacper Rybicki prize for outstanding scientific achievements in the field of geophysics in years 2019-2021; 2022

Kacper Rybicki prize for outstanding scientific achievements in the field of geophysics in years 2013-2015; IG PAS; 2016

Prize for publication activity in 2020; Institute of Geophysics; 2021

Prize for publication activity in 2015, Institute of Geophysics; 2016

PEER-REVIEWED PUBLICATIONS

Jain, V., Korhonen, M., Glowacki, O., Moskalik, M. (2024). Hydrography of the inner basins in Hornsund (Svalbard): Heat advection near tidewater glaciers, Journal of Geophysical Research: Oceans, 129, e2024JC021273.

Johnson, H. A., Glowacki, O., Deane, G. B., Stokes, M. D. (2024). Brief communication: A technique for making in situ measurements at the ice–water boundary of small pieces of floating glacier ice, The Cryosphere, 18, 265–272.

Korhonen, M., Moskalik, M., Glowacki, O., Jain, V. (2024). Oceanographic monitoring in Hornsund fjord, Svalbard, Earth Syst. Sci. Data, 16, 4511–4527.

Tęgowski, J., Glowacki, O., Ciepły, M., Błaszczyk, M., Jania, J., Moskalik, M., Blondel, P., Deane, G. B. (2023). Monitoring glacier calving using underwater sound, The Cryosphere, 17, 4447–4461.

Vishnu, H., Deane, G. B., Glowacki, O., Chitre, M., Johnson, H., Moskalik, M., Stokes, D. (2023) Depth-dependence of the underwater noise emission from melting glacier ice, JASA Express Letters, 3(2), 020801.

Ciepły, M., Ignatiuk, D., Moskalik, M., Jania, J., Luks, B., Glowacki, O., Wojtysiak, K. (2023). Seasonal changes in submarine melting mechanisms controlling frontal ablation of Hansbreen, Svalbard, Journal of Glaciology, 1–14.

Zeh, M. C., Ballard, M. S., Glowacki, O., Deane, G. B., Wilson, P. S. (2022). Model-data comparison of sound propagation in a glacierized fjord with a simulated brash ice surface, Journal of the Acoustical Society of America, 151(4), 2367-2377.

Glowacki, O. (2022). Distinguishing subaerial and submarine calving with underwater noise, Journal of Glaciology, 68(272), 1185-1196.

Lewińska, P., Glowacki, O., Moskalik, M., Smith, W.A.P. (2021). Evaluation of structure-from-motion for analysis of small-scale glacier dynamics, Measurement, 168, 108327.

Glowacki, O. (2020). Underwater noise from glacier calving: Field observations and pool experiment, J. Acoust. Soc. Am., 148(1), EL1-7.

Glowacki, O., Deane, G.B. (2020). Quantifying iceberg calving fluxes with underwater noise, The Cryosphere, 14, 1025–1042.

Vishnu, H., Deane, G. B., Chitre, M., Glowacki, O., Stokes, D., Moskalik, M. (2020). Vertical directionality and spatial coherence of the sound field in glacial bays in Hornsund Fjord, J. Acoust. Soc. Am., 148(6), 3849-3862.

Glowacki, O., Deane, G.B., Moskalik, M. (2018). The Intensity, Directionality, and Statistics of Underwater Noise From Melting Icebergs, Geophys. Res. Lett., 45(9), 4105-4113.

Moskalik, M., Cwiakala, J., Szczucinski, W., Dominiczak, A., Glowacki, O., Wojtysiak, K., Zagorski, P. (2018). Spatiotemporal changes in the concentration and composition of suspended particulate matter in front of Hansbreen, a tidewater glacier in Svalbard, Oceanologia, 60(4), 446-463.

Glowacki, O., Moskalik, M., Deane, G.B. (2016). The impact of glacier meltwater on the underwater noise field in a glacial bay, J. Geophys. Res. Oceans, 121(12), 8455–8470.

Glowacki, O., Deane, G.B., Moskalik, M., Tegowski, J., Blondel, P. (2015). Two-element acoustic array gives insight into ice-ocean interactions in Hornsund Fjord, Spitsbergen, Pol. Polar Res., 36(4), 355–367.

Glowacki, O., Deane, G. B., Moskalik, M., Blondel, P., Tegowski, J., Blaszczyk, M. (2015). Underwater acoustic signatures of glacier calving, Geophys. Res. Lett., 42(3), 804–812.

Deane, G. B., Glowacki, O., Tegowski, J., Moskalik, M., Blondel, P. (2014). Directionality of the ambient noise field in an Arctic, glacial bay, J. Acoust. Soc. Am., 136 (5), EL350-356.

Herman, A., Glowacki, O. (2012). Variability of sea ice deformation rates in the Arctic and their relationship with basin-scale wind forcing, The Cryosphere, 6, 1553–1559.

RESEARCH PROJECTS

Studying glacier/ocean interactions using a natural laboratory of Hornsund fjord, Svalbard, 2025-2030, National Science Center of Poland, $875K, **PI**

Studying glacier calving fluxes and calving styles through a novel combination of acoustic and optical methods, 2022-2026, National Science Centre of Poland, $230K, **PI**

Studying underwater calving events with ambient noise oceanography, 2018-2020, Ministry of Science and Higher Education of Poland, Mobility Plus Program, $95K, **PI**

Application of underwater acoustics in the study of sea ice in the Hornsund Fjord, Spitsbergen, 2014-2017, National Science Centre of Poland, $45K, **PI**

Acoustic methods in detection and analyzing of calving events at the Hans Glacier front, July-September 2013, Arctic Field Grant – Research Council of Norway, $7K, **PI**

"RAW – Retreat And Wither" – What is the influence of glaciers recession from tidewater to land-based on the marine biological production and biogeochemistry in the Arctic, 2021-2024, Norway Grants “GRIEG”, $1420K, **co-investigator**

Quantification of heavy metal discharge with freshwater runoff to an Arctic fjord ecosystem (Hornsund, Spitsbergen), 2021-2024, National Science Centre of Poland, $370K, **co-investigator**

Measuring the melt rate of glacier ice with underwater noise, 2018-2020, U.S. National Science Foundation (NSF), EAGER grant, $300K, **co-investigator (postdoc)**

Use of ambient sounds for passive hydroacoustic monitoring of calving processes at the Hans Glacier front, Hornsund Fjord, Spitsbergen, 2012 – 2015, National Science Centre of Poland, $180K, **co-investigator**

INVITED TALKS

Glowacki, O., Deane G. B., Chitre, M., Vishnu, H., Moskalik, M., Stokes, D., Johnson, H. (2022). Listening to glaciers: can we measure ice loss with passive cryoacoustics?, Polish Scientific Networks, Wrocław, September 28-30 (**keynote**)

Glowacki, O. (2021), Studying submarine calving with ambient noise oceanography, 6th Underwater Acoustics Conference & Exhibition (UACE2021), online, June 21.

Glowacki, O. (2017), *An acoustic study of sea ice behavior in a shallow, Arctic bay*, Acoustical Society of America (ASA) Meeting, Boston, USA, June 25-29.

Glowacki, O. (2016), *Application of passive underwater acoustics in the study of marine-terminating glaciers*, 36th Polar Symposium “Progress in polar research – new experiences and challenges”, Lublin, Poland, June 8-11.

SERVICE FOR THE COMMUNITY

Member and co-founder of the International Partnership for the AcOustic Monitoring of Glaciers (IPA OMG): tripartite cooperation between 1. the Institute of Geophysics Polish Academy of Sciences, 2. Scripps Institution of Oceanography, University of California San Diego and 3. National University of Singapore; 2018 - present

Member of the Scientific Council of the Institute of Geophysics Polish Academy of Sciences; 2023 – present

Member of the Technical Committee of Acoustical Oceanography, Acoustical Society of America; 2020-2023

Session Co-chair: Ambient Noise Oceanography in Polar Regions: Noise Properties and Parameter Estimation Glowacki, Acoustical Society of America (ASA) Meeting, Minneapolis, USA, 9 May 2018.

Reviewer | Journals: Journal of Geophysical Research, Journal of the Acoustical Society of America, Remote Sensing, Oceanologia, Polar Research, Polish Polar Research; Funding agencies: Polish National Agency for the Academic Exchange (NAWA), National Geographic

FIELD WORK ACTIVITY

More than 1 year in the Arctic:

2024:	16.06 – 05.07	PI
2023:	18.06 – 08.08	PI
2022:	19.06 – 29.07	PI
2021:	02.09 – 29.09	PI
2019:	30.06 – 01.08	investigator
2017:	24.08 – 09.09	PI
2016:	19.07 – 26.08	investigator
2015:	18.04 – 20.06	investigator
2014:	01.04 – 28.04	investigator
2013:	25.07 – 10.09	investigator

MEDIA COVERAGE (SELECTED)

Interview for **EOS - American Geophysical Union magazine**, title: “Underwater Sounds Help Reveal Extent of Glacial Calving”, https://eos.org/articles/underwater-sounds-help-reveal-extent-of-glacial-calving, 2022-12-09

Conversation in a radio podcast “Threat”, **BBC Earth**, https://play.acast.com/s/bbcearthpodcast/series-5-episode-8-threat, 2022-11-22

Interview for the **Bulletin of the Atomic Scientists**, title: “How fast is the Arctic ice retreating? Just listen to it melt.”, https://thebulletin.org/2018/06/how-fast-is-the-arctic-ice-retreating-just-listen-to-it-melt/, 2018-06-08

Interview for the **Scientific American**, title: “How fast are glaciers melting? Just listen to them”, https://www.scientificamerican.com/article/how-fast-are-glaciers-melting-just-listen-to-them/, 2018-05-29

Interview for German radio **Deutschlandfunk**, title: „Lauschangriff auf kalbende Gletscher”, https://www.deutschlandfunk.de/polarregion-lauschangriff-auf-kalbende-gletscher-100.html, 2015-02-12

Interview published in **NBC News** website – through the LiveScience.com, title: “Glacier's groans can pinpoint iceberg calving”, https://www.nbcnews.com/id/wbna56955916, 2015-02-10

Live radio interview for the Polish radio **TOK FM**, title: „About calving glaciers with Oskar Głowacki from PAS”, https://audycje.tokfm.pl/podcast/22926,O-cieleniu-sie-lodowcow-z-Oskarem-Glowackim-z-PAN, 2015-02-09

Radio interview for **BBC News**, title: „Icebergs 'have sound signature'”, https://www.bbc.com/news/science-environment-31028901, 2015-01-29.