

Curriculum Vitae

Personal Data

Title	Prof. Dr.
First name	Heiko
Name	Pälike
Current position	Professor, Paleoceanography
Current institution(s)/site(s), country	Faculty of Geosciences and MARUM – Center for Marine Environmental Sciences, University of Bremen, Germany
Identifiers/ORCID	0000-0003-3386-0923

Qualifications and Career

Stages	Periods and Details
Degree programme	1997 – 1998 MSc Hydrogeology (with distinction), Univ.College London, UK 1994 – 1997 BSc Natural Sciences, Univ. of Cambridge, UK
Doctorate	07/2002, Dept. Earth Sciences, University of Cambridge, U.K., w. Sir Nicholas Shackleton
Stages of academic/professional career	Since 2012 Professor of Paleoceanography, Univ. of Bremen, Germany 2011 – 2012 Professor of Paleoceanography, Univ. of Southampton, UK 2007 – 2011 Reader, Univ. of Southampton, UK 2004 – 2007 Lecturer, Univ. of Southampton, UK 2002 – 2004 Research Scientist, Univ. Stockholm, Sweden

Activities in the Research System

My early activities in the research system have been profoundly influenced by participating as scientist in research expeditions of international ocean drilling programs. Towards this I have taken a leading role in major international science initiatives, primarily around the activities of the Integrated Ocean Drilling Program. I served as member of the UK IODP Steering Committee (2007–12), panel co-chair of the IODP Science Steering and Evaluation Panel SSEP (2007–2009), panel member of the IODP Science Planning Committee SPC (2011), panel member of the IODP INVEST steering committee (2008–2010), panel member of the IODP Science Plan Writing Committee (2009–2012), and science member of the *JOIDES RESOLUTION* Facility Board (2013–2016). I chaired the ESF Research Network Program. “*Earthtime-EU*” (2010-2015). I served as lead for the Joides Resolution Laboratory Assessment Team in 2010. I further served as member for the DFG Senate Commission Oceanography (2014–2017) and as member of the German Review Board Ship Applications GPF (2017–today). I have been editor of the journal *Paleoceanography* (2013–2017) and currently am on the editorial board of *Progress in Earth and Planetary Science* (2013–). I served as voting member for the International Subcommittee for Paleogene Stratigraphy (2008–2012) and voting or *corresponding* member for the Subcommittee on Neogene Stratigraphy (2016–2020, 2020–today). Since 2021 I serve on the

scientific advisory board for the Science Foundation Ireland Research Centre in Applied Geoscience (iCRAG). At the University of Bremen I served as Dean of Studies 2021–2023. I serve as member of the scientific advisory board of the Neptune Sandbox Berlin database initiative (2019–). I have participated in 7 major sea-going expeditions (3 as chief or co-chief scientist).

Supervision of Researchers in Early Career Phases

So far, I have mentored and advised 15 post-doctoral researchers and 14 doctorates (three current). Over 65% of the doctoral students have an international background; the proportion of female doctoral students is 70%. I acted as formal mentor in the University of Kiel mentoring program *via: Mento* (2013–2014). I have actively and regularly engaged in multiple workshops and summer schools (ECORD Summer School Bremen, Shanghai, Urbino, GESEP, UKIODP, GSA Short Course) to transfer skills, networks, and knowledge to early career researchers, including as chair of the ESF Research Network Program “*Earthtime-EU*” (2010–2015). I have successfully nominated multiple early career researchers for several AGU and EGU prizes.

Scientific Results

A major pillar of my scientific research is related to reconstructing paleoclimatic and paleoceanographic conditions during the Cenozoic using marine sediment archives, with an initial focus on exploiting the imprint of Earth’s orbital changes in the sedimentary record to evaluate forcings and feedbacks in the climate system aided by enhanced age control arising from this built-in orbital “metronome”. A1 suggests that with a weak Atlantic meridional overturning circulation (AMOC), Atlantic intermediate waters warm as ventilation decreases, and at the same time this heating stops being transferred to the deep eastern North Atlantic for thousands of years. A2 documents burial processes of calcium carbonate in the sediment that are related to important long-term. A7 (HP=co-chief scientist IODP Expedition 320) studied in detail the important differences between inorganic during long-term (>100kyr) steady-state, and shorter perturbations under warmer world conditions. High-resolution, astronomically age-calibrated climate proxy time-series and compilations provide insights into the perturbations and feedbacks related to the global carbon cycle and Warmer Worlds (A3, A5, A9) and partly provide the basis for future comparisons between physical climate proxy records and co-registered paleo-ecosystem changes. Geological time periods with rapid changes or large excursions provide information on the dynamics of the climate system (A4, A6, A8, A10), which are relevant towards understanding.

Category A (10)

- A1 Barragán-Montilla, S., **Mulitza, S.**, Johnstone, H. J. H. & **Pälike, H.** (2023), Stagnant North Atlantic Deep Water Heat Uptake With Reduced Atlantic Meridional Overturning Circulation During the Last Deglaciation. *Paleoceanography and Paleoclimatology* 38. doi:10.1029/2022pa004575.
- A2 Cornuault, P., **Westerhold, T.**, **Pälike, H.**, **Bickert, T.**, Baumann, K.-H. & **Kucera, M.** (2023), Nature and origin of variations in pelagic carbonate production in the tropical ocean since the mid-Miocene (ODP Site 927). *Biogeosciences* 20, 597–618. doi:10.5194/bg-20-597-2023.
- A3 De Vleeschouwer, D., Drury, A. J., Vahlenkamp, M., Rochholz, F., Liebrand, D. & **Pälike, H.** (2020), High-latitude biomes and rock weathering mediate climate-carbon cycle feedbacks on eccentricity timescales. *Nat Commun* 11, 5013. doi:10.1038/s41467-020-18733-w.
- A4 Klages, J. P., Salzmann, U., **Bickert, T.**, Hillenbrand, C.-D., Gohl, K., Kuhn, G., Bohaty, S. M., **Titschack, J.**, **Müller, J.**, Frederichs, T., Bauersachs, T., Ehrmann, W., van de Flierdt, T., Pereira, P. S., Larter, R. D., **Lohmann, G.**, Niezgodzki, I., Uenzelmann-Neben, G., Zundel, M., Spiegel, C., Mark, C., Chew, D., Francis, J.E., Nehrke, G., Schwarz, F., Smith, J.A., **Freudenthal, T.**, Esper, O., **Pälike, H.**, Ronge, T.A., Dziadek, R., Science Team of Expedition PS104 (2020). Temperate rainforests near the South Pole during peak Cretaceous warmth. *Nature* 580, 81–86. doi:10.1038/s41586-020-2148-5.
- A5 **Westerhold, T.**, Marwan, N., Drury, A. J., Liebrand, D., Agnini, C., Anagnostou, E., Barnet, J. S. K., Bohaty, S. M., De Vleeschouwer, D., Florindo, F., Frederichs, T., Hodell, D. A., Holbourn, A. E., Kroon, D., Lauretano, V., Kittler, K., Lourens, L.J., Lyle, M., **Pälike, H.**, **Röhl, U.**, Tian, J., Wilkens, R.H., Wilson, P.A., Zachos, J.C. (2020), An astronomically dated record of Earth's climate and its predictability over the last 66 million years. *Science* 369, 1383–1387. doi:10.1126/science.aba6853.
- A6 Gutjahr, M., Ridgwell, A., Sexton, P. F., Anagnostou, E., Pearson, P. N., **Pälike, H.**, Norris, R. D., Thomas, E. & Foster, G. L. (2017), Very large release of mostly volcanic carbon during the Palaeocene-Eocene Thermal Maximum. *Nature* 548, 573–577. doi:10.1038/nature23646.
- A7 **Pälike, H.**, Lyle, M. W., Nishi, H., Raffi, I., Ridgwell, A., Gamage, K., Klaus, A., Acton, G., Anderson, L., Backman, J., Baldauf, J., Beltran, C., Bohaty, S. M., Bown, P., Busch, W. et al. (2012), A Cenozoic record of the equatorial Pacific carbonate compensation depth. *Nature* 488, 609–14. doi:10.1038/nature11360.
- A8 Deconto, R. M., Pollard, D., Wilson, P. A., **Pälike, H.**, Lear, C. H. & Pagani, M. (2008), Thresholds for Cenozoic bipolar glaciation. *Nature* 455, 652–6, doi:10.1038/nature07337.
- A9 **Pälike, H.**, Norris, R. D., Herrle, J. O., Wilson, P. A., Coxall, H. K., Lear, C. H., Shackleton, N. J., Tripathi, A. K. & Wade, B. S. (2006), The heartbeat of the Oligocene climate system. *Science* 314, 1894–1898. doi:10.1126/science.1133822.
- A10 Coxall, H. K., Wilson, P. A., **Pälike, H.**, Lear, C. H. & Backman, J. (2005) Rapid stepwise onset of Antarctic glaciation and deeper calcite compensation in the Pacific Ocean. *Nature* 433, 53–57. doi:10.1038/nature03135.

Category B

I have co-authored the guiding science plan for the International Ocean Discovery Program (IODP) 2013-2023 (B1). For the current *2050 IODP Science Framework: Exploring Earth by Scientific Ocean Drilling* I acted as reviewer. I design and make available software tools and databases for the research community: A cross-platform software tool in wide-use for research and teaching in the paleoceanographic community is now available as web-tool (B2). I contributed to major updates towards the compilation of the Geological Timescale for the Neogene and

Paleogene Periods (B3, B4). On public radio, I explained the phenomenon of ocean heat-waves and warming to the general public (B5).

B1 IODP Science Plan Writing Committee. Illuminating Earth's Past, Present, and Future: The Science Plan for the International Ocean Discovery Program 2013-2023. Technical report, IODP (2011). URL <https://www.iodp.org/science-plan-for-2013-2023>.

B2 Kotov, S. & Pälke, H. QAnalyzeSeries – a cross-platform time series tuning and analysis tool. AGU Fall Meeting Abstracts, PP53D-1230, Wiley (2018). doi:10.1002/essoar.10500226.1. <https://paloz.marum.de/confluence/display/ESPUBLIC/QAnalyzeSeries-Public>. Software code: <https://zenodo.org/doi/10.5281/zenodo.10892346>

B3 Speijer, R., Pälke, H., Hollis, C., Hooker, J. & Ogg, J. Chapter 28 - The Paleogene Period. In Gradstein, F. M., Ogg, J. G., Schmitz, M. D. & Ogg, G. M., eds., Geologic Time Scale 2020, 1087–1140. Elsevier (2020). doi:10.1016/B978-0-12-824360-2.00028-0.

B4 Raffi, I., Wade, B., Pälke, H., Beu, A., Cooper, R., Crundwell, M., Krijgsman, W., Moore, T., Raine, I., Sardella, R. & Vernyhorova, Y. Chapter 29 - The Neogene Period. In Gradstein, F. M., Ogg, J. G., Schmitz, M. D. & Ogg, G. M., eds., Geologic Time Scale 2020, 1141–1215. Elsevier (2020). doi:10.1016/B978-0-12-824360-2.00029-2.

B5 Extended Interview for Radio Bremen 2 Mare:Wasser (4. June 2023) on Ocean Heatwaves (27m55s–34m10s) (2023). URL <https://www.bremenzwei.de/sendungen/mare-radio-574.html>.

Academic Distinctions

I have been awarded the AGU Asahiko Taira International Scientific Ocean Drilling Research Prize, an ERC Consolidator Grant (2014), a Wolfson Merit Award (2012, declined due to move to Bremen), the Wollaston Fund, Geological Society of London (2011), the Philip Leverhulme Prize (2008), Apple Inc ARTS Higher Education Laureate (2007), Fellowship, UK Higher Education Academy (2006), a Shell Postgraduate Bursary (1997–2001), Cambridge European Trust Award (1998–2001), and a scholarship from the British Chamber of Commerce in Germany (1994–1997).