Curriculum Vitae

Prof. Dr. Norbert Frank

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Date: **09.07.2026**



Professional Experience

Since 2012	(Co/Acting) Director of the Institute of Environmental Physics
Since 2012	Full Professor of Physics at Heidelberg University
Since 2012	Associate Professor of Earth Sciences at Heidelberg University
Since 2026	Member of the supervisory board of the Curt-Engelhorn Center for Archeometry, Mannheim
Since 2026	Member of the Heidelberg Center of the Environment and member of the board of sustainability for sustainable research
Since 2026	Member of the science advisory board of the Institute Pierre Simon Laplace, Paris
Since 2022	Member of the DFG Commission Scientific Instruments and Information Technology
2018 – 2020	Directorate Member of the Heidelberg Graduate School for Fundamental Physics
2009 – 2012	CEA Expert in Geochemistry, CEA Saclay, France
2006 – 2010	Team leader of GEOTRAC at LSCE, CEA, CNRS, UVSQ, Gif-sur-Yvette, France
2003 – 2012	Head Mass Spectrometer Facility, LSCE, CNRS, CEA, Gif-sur-Yvette, France
2003 – 2012	CEA Researcher, LSCE, Gif-sur-Yvette, France
2002 – 2003	CNRS Marie Curie fellow, LSCE, Gif-sur-Yvette, France
2001 – 2002	CNRS Researcher, LSCE, CNRS, Gif-sur-Yvette, France
1999 – 2001	DFG Postdoctoral Fellow, Heidelberg University, Heidelberg, Germany
1997 – 1999	DFG Postdoctoral Fellow LDEO, Columbia University, New York, USA
1993 – 1997	Research Assistant at Heidelberg Academy of Science, Heidelberg, Germany

Education

2011	Habilitation at University Versailles St. Quentin en Yvelines:
	'Aging and Tracing climate change: A U-series and Radiocarbon Perspective'.
1993 – 1997	Ph. D. Thesis at Heidelberg University:
	'U-series dating of European travertine deposits by using thermal ionization mass spectrometry'.
1986 – 1992	Physics studies at Heidelberg University,
	Diploma Thesis: 'Protactinium excess dating of ferromanganese crusts using alpha counting and beta counting'.

Awards

Teaching Award of the Faculty of Physics and Astronomy (2018)

CEA Exceptional Award (2009)

EU Marie-Curie Individual Fellowship (2001)

DFG Individual Foreign Country Fellowship (1997)

Projects

(CO = Coordinator, PI = Principle Investigator, PA = Partner),
Acquired funding all projects including instrumentation: ~8.9 M€

Research projects

2026-2029	DFG: Antarctic Circumpolar Current dynamics, seafloor spreading, and the Atlantic Nd isotope gradient: tracing asymmetric εNd patterns since the Mid-Pleistocene Transition (CO) (~250 k€)
2025-2028	DFG REEF-SGD: Reconstructing Environmental Effects of Freshwater-Seawater Dynamics via Submarine Groundwater Discharge. A project to search for submerged groundwaters using U-isotopes and other tracers to quantify its climate implication (CO) (~305 k€)
2025-2029	DFG: – Own position proposal of Dr. Antao Xu: Extreme dry-season dynamics of trace element and isotope cycling in the Amazon-mangrove-shelf-ocean continuum: addressing seasonal biases in coastal metal fluxes (PA)
2023-2025	DFG: Searching the proposed Northern Source of the MPT start of the 100-ka climate cyclicity is a project to detect the change in Northeast Atlantic weathering patterns off Ireland to affirm or reject the hypothesis of changing Regolith ice sheet base to favor a large northern hemisphere ice sheet (CO) (~150 k€)
2022-2025	DFG: Investigating climate change during the period of Maya collapse is a project to reconstruct hydroclimate variability on the Yucatan peninsula during the past 3000 years to test hypothesis on the role of recurrent dry episodes impacting the stability of the Maya culture (CO) (~250k€)
2022-2025	DFG: Quantifying post Little-Ice-Age freshwater discharge using 234U–(P)SST–14C is a project to demonstrate the usefulness of the 234U/238U ratio in seawater to infer freshwater fluxes to the ocean in the Caribbean (CO) (~250k€)
2020-2023	DFG: Radiocarbon in speleothems II – the soil carbon cycle and climate (CO) (258 k€)

2019-2023 DFG: Deep-Atlantic Interhemispheric Water Mass Competition since the Mid-Pleistocene Transition (ODP 1063 versus ODP 1094/1090) (CO) (175 k€)

2019 Wilhelm und Else Heraeus Stiftung - Workshop and Group retreat (CO) (4.9 k€)

2017-2020 DFG: Atlantic radiocarbon calibration using cold-water corals (CO) (Project to develop benchmark marine radiocarbon calibration records using cold-water corals from the Gulf of Cadiz, Mauritania, and Angola) (277 k€)

2017-2020 DFG – GPF: Cruise proposal ATHENA M151 (RV Meteor) (CO) (Research cruise to study cold-water corals of the temperate East Atlantic Seamounts using RV Meteor and the MARUM ROV SQUID) (346 k€)

2017 DFG – GPF: Cruise proposal UFO M141-2 (RV Meteor) (CO) (Research cruise to study U isotopes in the eastern north Atlantic waters and across the Mediterranean Sea to the Black Sea.)

2017-2020 DFG: MIS-11 Variation in Atlantic Deep Water Nd Isotopic Composition across MIS11 (CO) (Project on the spatial variability of Nd-Isotopes in the deep western Atlantic spanning at high temporal resolution climate stage MIS11 to confirm or reject recent observations on strong Labrador Sea influences on deep water flow) (- 85 k€)

2015-2018 DFG: Tropical Indian Ocean and East African seasonality during the Holocene: orbital forcing and ocean atmosphere interactions. (IndoOrb) (CO - Dr. M. Peiffer) (PA) (Involved in the geochemical study of carbonates, and U-series dating) (5 k€)

2016-2019 DFG: Project on the seawater $^{234}U/^{238}U$ ratio in the past (CO) (Project to develop benchmark records of past seawater U-isotopes using cold-water corals from the Gulf of Cadiz and the Mediterranean Sea, as well as the presently available U-series data from tropical and deep-sea corals) (211.11 k€)

2015-2018 DFG: Fluid inclusion water isotopes in speleothems using CRDS - understanding carbonate $\delta 18O$ responses to climate variability (PA) (Involved in the chronology of speleothems as well as the speleothems general geochemical composition and the use of water isotopes through CRDS analysis: CO: Dr. Tobias Kluge, IUP Heidelberg) (~15 k€)

2016 DAAD: Fellowship for Freya Hemsing at Oxford University (PA) (Involved in the planning and supervision of the exchange project with University Oxford to conduct Ba/Ca and Ba-Isotope analysis on seawater and cold-water corals) (CO - MSc Freya Hemsing / Prof. G. Henderson) (~12 k€)

2015 Wilhelm und Else Heraeus Stiftung - Workshop and Group retreat scientific writing (PI) (The project supported the research team retreat with the focus on scientific writing held at the KLJB Bildungshaus Fiegenstall, Germany) (CO - Dr. M. Deininger) (4.5 k€)

2014-2017 DFG Hydrology Influenced Variation of the 14C Reservoir Ages in Speleothems and Reconstruction of Atmospheric 14C Levels (PI) (Reconstruction of radiocarbon levels in U-series dated speleothems. This project is a joined project with Dr. Jens Fohlmeister, University Potsdam) (270,70 k€)

2014-2017 DFG 900ka Variation in Deep Water Nd Isotopic Composition in IODP core 1063 (CO) (Project on the temporal variability of Nd-Isotopes in the deep western Atlantic spanning at high temporal resolution the past 900 thousand years) (196,31 k€)

2014-2016 DFG Spatial Analyses of the Atlantic Circulation during Heinrich Events (PI)
(This project concerns the study of the 231Pa/230Th ratio in marine sediments from the time of ice sheet collapses one and two some 20 to 30 kyr before present. It is the prolongation of a project coordinated jointly by Prof. A. Mangini and Dr. Jörg Lippold) (CO- Dr. J. Lippold) (62,6 k€)

2013 HCE-Pre-Project: Climate, GIScience and Archaeology of a small travertine body in Southern Germany (PI)
(Project on the 3D detection and climate evolution of calcareous tufa formations in southern Germany including their archeological significance regarding the retreat of the Roman Empire) (12.5 k€)

2013–2016 DFG Ocean Circulation between the Last Glacial and Interglacial – high resolution Nd Isotope stratigraphy on IODP/ODP cores from the Atlantic (PA) (This project concerns the study of the 231Pa/230Th ratio in marine sediments from the past glacial to present spanning a large spatial area in the North and partly South Atlantic. The project is coordinated together with Dr. Jörg Lippold) (180 k€)

2011 CNRS Cruise proposal: Iceland Coral Ecosystems - Climate and Thermocline Ocean Circulation (CO) (Planning and coordination of a cruise to collect seawater and cold-water corals south of Iceland with the French research vessel N/O Thalassa and the remotely operated vehicle Victor 6000 provided by IFREMER) (~ 1.3 M€)

2010–2012 CNRS LEFE: Iceland Coral Ecosystems: Climate and ocean circulation (CO) (Project to reconstruct cold-water coral ecosystem dynamic and water mass exchange off south Iceland using U-series dating and numerous geochemical tracers) (~35 k€)

2009–2012 EU HERMIONE: Hotspot Ecosystem Research and Mans Impact on European Marginal Seas (PI) (Integrated European project involving studies of cold-water coral ecosystems and mans impact through fishery, climate change and pollution. Involved in the dating of cold-water coral reef accumulations and the use of geochemical tracers to study the corals environmental conditions) (CO - Prof. A. Weaver, Southhampton, UK) (~32 k€ out of 3,500 k€)

2008–2011 EU EPOCA: European project on Ocean acidification (PA) (Project on the observation and consequences of present, past and future ocean acidification due to anthropogenic carbon dioxide emissions; CO - Prof. Jean Pierre Gatusso, Villefranche sur Mer, France)(~60 k€ out of ~6,000 k€)

2008–2011 CNRS LEFE/Phare: Paleo-pH Calibration (PA) (Involved in the geochemical study of tropical and cold-water corals using Boron Isotopes to trace pH. Development of mass spectrometric protocols and standards and correction model for coral vital effects) (CO - Dr. E. Douville) (~5 k€)

2008–2010 MC-IOF: MEDATArchives: Mediterranean and Atlantic Ocean circulation and climate (Host-PI) (Individual research fellowship project of Dr. Paolo Montagna hosted by LSCE, but conducted in close cooperation with LDEO at Columbia University where two years of the research project where carried out: LDEO host Prof. Steven Goldstein) (~450 k€)

2006–2010 ANR Newton: North Atlantic Ocean circulation viewed from novel geochemical water mass tracers in deep sea corals (CO) (Project to reconstruct the North Atlantic ocean response to decadal climate variability prior and after the anthropogenic global warming based on novel marine archives and instrumental data) (~420 k€)

2005–2009 EU HERMES: Hotspot Ecosystem Research on the Margins of the European Seas (PA) (Integrated European project involving studies of cold-water coral ecosystems from the Mediterranean Sea to the Norwegian Shelf, CO - Prof. A. Weaver, Southampton, UK) (~56 k€ out of 12,000 k€)

2005–2009 ESF Microsystems: Micro-scale Processes in Active Mound Systems (PA) (Project on the micro-scale growth and fluid venting dynamics in vast coral mound structures of Morocco and within the Mediterranean Sea; CO - Prof. David van Rooij, Ghent University (~50 k€)

2003–2006 CNRS ECLIPSE: Reef ecology and sea level through time in New Caledonia (PA) (Project on the relative sea level change as recorded by dated tropical corals of several locations in the southern equatorial Pacific; CO - Dr. Guy Cabioch✞ - IRD - Nouméa) (~7.5 k€)

2002–2004 EU GEOMOUND: Geological drivers of carbonate mound formation (PA) (Project on the geological drivers of coral carbonate mound evolution including climate change and coral isotope geochemistry; CO - Prof. Jean Pierre Henriet✞ - Ghent University)(~50 k€ out of ~5,000k€)

2002–2005 CNRS PNEDC: Ampoule - Climate changes during the Holocene (PA) (Project in which numerous sedimentological climate archives have been explored for the Holocene climate records; CO - Dr. Pascal Yiou) (~5 k€))

2001–2003 EU Marie Curie Action: Ocean ventilation viewed through deep sea corals (CO) (Project on the use of radiocarbon to trace the state of ventilation of modern, post-modern and past mid-depth water masses in the eastern North Atlantic) (~132 k€)

1999–2001 DFG: European Travertine Deposits as Climate Archive (PI) (Project on the use of central European travertine deposits as climate archive. Involved in high precision U-series dating and the development of stable isotopes and other geochemical tracers to determine the environmental conditions and Karst water provenance and pathway) (CO - Prof. Augusto Mangini / Dr. B. Kober) (~53 k€)

1997–1999 DFG: Climate Signals from Stalagmites (PA) (Involved in the development of U-series dating of stalagmites and its use for Paleoclimate reconstruction) (CO - Prof. Augusto Mangini) (~90 k€)

1997–1999 DFG: Nd Isotopes in Foraminifera as Tracers of Past Ocean Circulation (CO) (Foreign exchange post-doctoral project with the aim to develop Nd-Isotopes as a new water mass provenance tracer using foraminifera as archive, conducted at Lamont Doherty Earth Observatory New York, USA) (~67 k€)

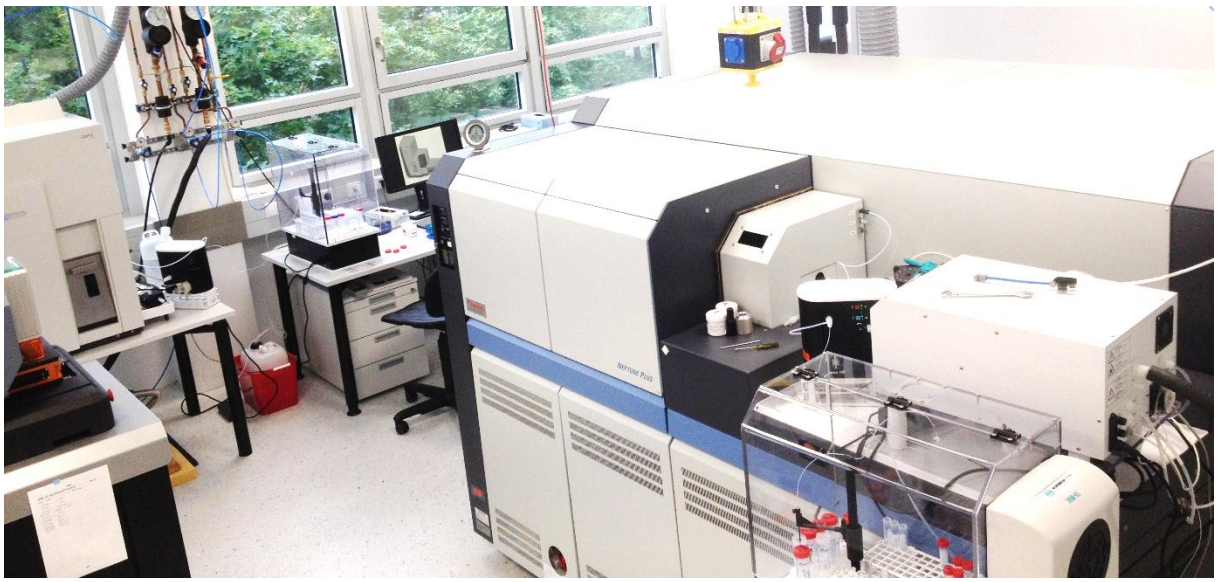
1997–2000 BMBF: Micro Sampling U-series dating of Late Quaternary travertine deposits with relevant archeological remains (PI) (Development of a mineralogical approach to identify travertine depositional phases for accurate micro-scale U-series dating. CO - Prof. G. Wagner, HAW, MPIK Heidelberg) (~130 k€)

1996–1998 DFG: Paleomagnetic Signal Preservation in Travertine Deposit (PA) (Involved in the study of travertine using natural radionuclides and the absolute dating of the magnetic "semi" - reversal observed in the Bad Cannstatt travertine deposit "Biedermann" CO: Dr. Ulrich Hambach) (~ 30 k€)

1995–1997 DFG: Sea Level Changes in Western Australia (PA) (Involved in the development of mass spectrometric U-series dating of corals, the planning of the sampling and the development of a mobile U-series laboratory including a Silena compact Alpha-Spectrometer: CO - Dr. Anton Eisenhauer) (~ 60 k€)

1993–1995 BMBF: Peru-Basin: Boundary Layer Processes (PA) (Involved in the study of 231Pa and 230Th in manganese crusts and nodules to determine the nodules accumulation rate - Diploma Thesis) (~ 5 k€)

Funded Instrumentation Projects:



2013-2015 DFG large scale research facility and instrumentation funds:

INST 35/1143-1 Mass spectrometer (Laser-ablation MC-ICPMS) (CO) (~610 k€)

	INST 35/1270-1 Mass spectrometer (IRMS + Gasbench II) (CO) (~190 k€)
2012	Structure and Innovation fund of Baden Württemberg: Numerous instruments (ICPQMS, LA-MC-ICPMS, IRMS) (CO) (~700 k€)
2009	SESAME Ile de France: Laser Ablation MC-ICPMS instrumentation (CO) (This project was on the development of high precision rare isotope measurements used for past climate studies and ultimately resulted in the installation of the Thermo Fisher Neptune Plus MC-ICPMS at LSCE, Gif-sur-Yvette, France) (~380 k€)
2009	INSU – CNRS – Laser Ablation MC-ICPMS instrumentation (CO) (This project was on the development of high precision rare isotope measurements used for past climate studies and ultimately resulted in the installation of the Thermo Fisher Neptune Plus MC-ICPMS at LSCE, Gif-sur-Yvette, France) (~250 k€)
2006	INSU – CNRS – ICPMS instrument (Thermo Fisher) (PI) (This project was to develop the capacity for minor and trace element analysis in corals via the installation of a ThermoFisher X-series ICPQMS, for which I was involved in the idea, construction and installation of the instrument) (CO - Dr. E. Douville and Dr. S. Arnault) (~90 k€)
2004	INSU – CNRS – TIMS renewal (CO) (This project was to rebuild the power supply electronic of the thermal ionization mass spectrometer MAT262 at LSCE, Gif-sur Yvette) (~42 k€)

Teaching

Since 2012 – Full Professor in Physics and Earth Sciences with teaching duties of total 9 h per week each term in the Physics faculty and 5 h contributions to the Earth Science via the staff. The thematic focus is on Environmental Physics, Marine Geochemical Cycles, Geochronology, but also fundamental Physics courses, seminars and practical exercises. The following list provides an overview of the various courses taught since 2013. At present I have taught courses for more than 1000 students in physics and many hundreds in more specific domains such as in Environmental Physics and the Earth Sciences. The following list goes from general lectures in the Bachelor course program to specific lectures. Since the COVID Pandemic all courses are streamed and recorded to provide the students with hundreds of hours of live recordings and videos and numerous lectures scripts have been put together with more than 800 pages.

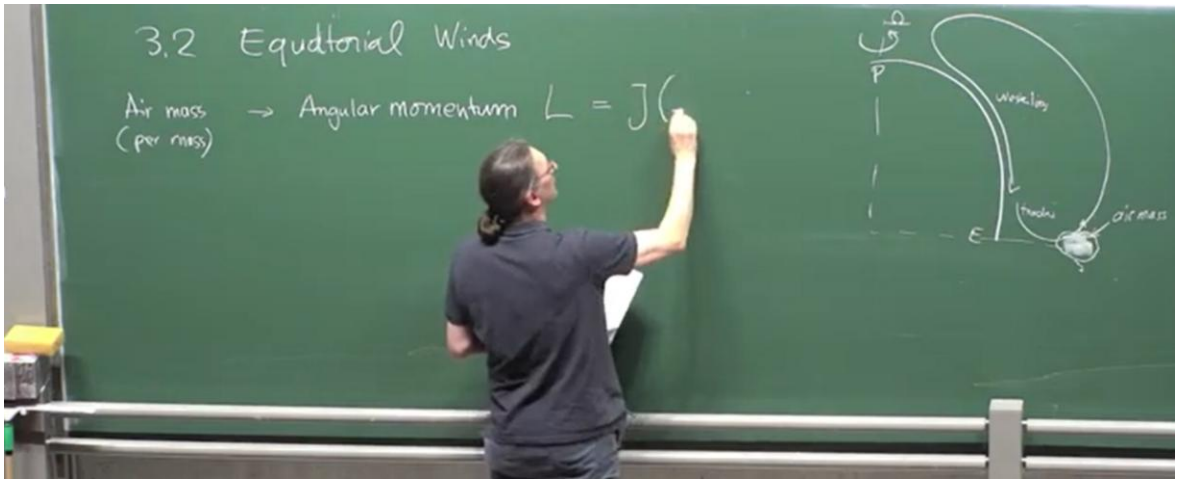
Lecture and Tutorials of Experimental Physics I – Mechanics and Thermodynamics (84 h). This course covers all aspects of classical experimental (Newtonian) physics regarding the movement of objects, forces, energy, inertia, angular momentum, and thermodynamic systems. It spans from point mechanics into the dynamic of physical systems of solid bodies, deformation, to the behavior of fluids and gases and the basic principles of macroscopic and microscopic thermodynamic systems. It introduces measurement principles and discusses more than 100 different live performed experiments. The course is accompanied by exercises on each subject matter and weekly tutorials of 2 hours.



Lecture and Tutorials of Experimental Physics II – Electrodynamics and special relativity (84 h). This lecture course treats all aspects of electric charges, currents, magneto statics, and time varying electromagnetic fields in matter and vacuum. It discusses magnetic properties and presents the consequences of the four Maxwell equations in roughly 100 experiments with focus on the second major

force in nature discovered in the last century. The final chapter of the lecture than treats basic optics principles and introduces special relativity as a consequence of the constant light speed contrasting to the absolute time in Newtonian mechanics. The course is accompanied by exercises and 2 hours of tutorials each week.

Lecture and Tutorials: Environmental Physics (48 h lecture + 24 h tutorials): This course covers geophysical fluid dynamics, Ocean and atmospheric circulation patterns and processes, concepts of flow through porous media, hydrology, ice physics, gas-exchange, and isotope physics. It further includes the physics of turbulence and diffusion and it covers the global energy balance and energy transport, light scattering in the atmosphere, and aspects of box-model solutions of environmental problems. Lastly, it provides first hints towards complex system dynamics and climate sensitivity. The course is accompanied by exercises, which are discussed during the 2 h weekly tutorials.



Lecture and Tutorials: Aquatic Physics – (28 h + 12 h tutorial) This course covers aspects of groundwater flow, limnology, and general isotope hydrology. In this lecture the focus is on the understanding of the state equation of water, heat, properties and carbon cycling in lakes, the use of various steady-state models to estimate the transport of heat, gases and substances in such aquatic systems. It also elaborates on the challenges of sustainable water use and the other societal aspects of aquatic systems. The last chapter concerns the use of noble gases to assess past groundwater temperatures and it elaborates on isotope toolboxes to study the age of water in different environments. This course is a cornerstone course developed and usually taught by my colleague Prof. Werner Aeschbach.

Lecture and Tutorials: Climate Physics – (28 h + 12 h tutorial) This course covers aspects of the processes that drive climate following and update of the excellent textbook by Peixoto and Oort (1991). It also elaborates on the definition of system components and interaction, on system response to perturbation and the relevance of forcing, sensitivity and state definition. It went also along the line of present meteorological and climate state of Atmosphere, Ocean, Cryosphere, and Biosphere and its past known changes and future simulated changes. The major goal is to demonstrate that temperature plays an ultimate role in the system and why.

Lecture and Tutorials: Tracers in the Sea / Physics and Chemistry of the Ocean – (28 h lecture + 12 h tutorials) Based on the textbook of Wally Broecker and Tsung-Hung Peng and many other textbook sources this lecture covers many aspects of physical oceanography, cycling of elements in the ocean, their sources and sinks and chemical behavior, the creation of simple models of the element cycles, as well as isotope toolboxes to study the cycle of water, energy (heat), carbon, and calcium. It also includes the biogeochemical cycles of phosphate and other nutrients. It discusses the origin and cycling of sediments. It is accompanied by practical exercises including first knowledge about toolboxes such as ODV and Ocean R and Ocean python products for data evaluation.

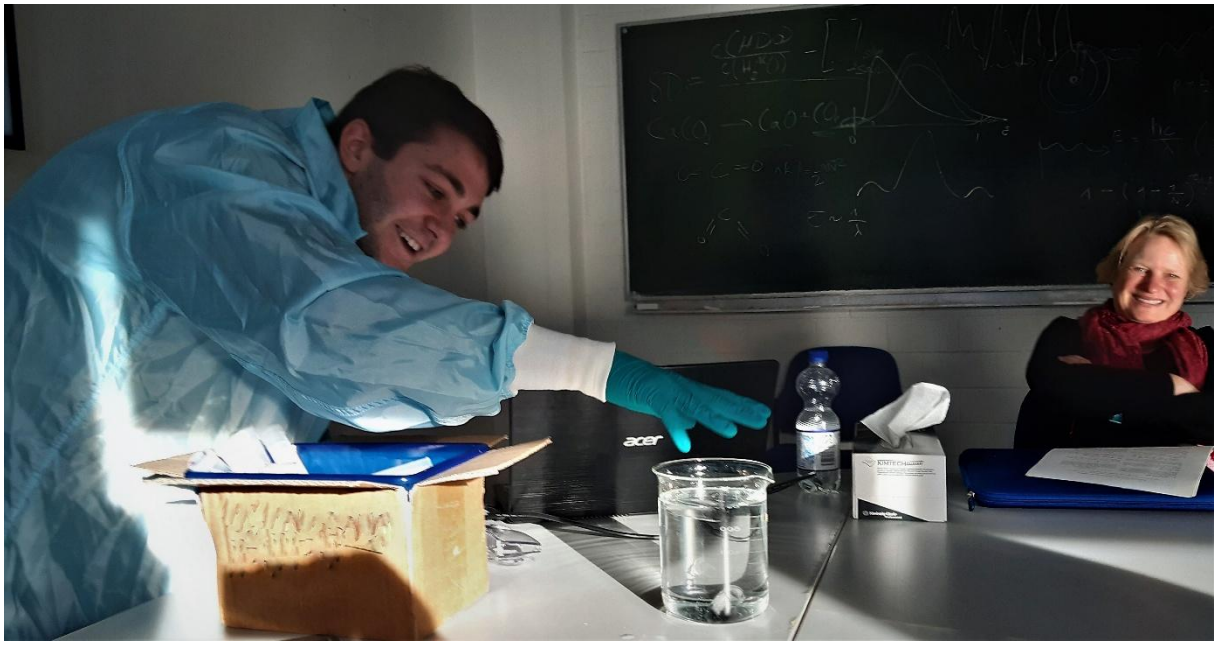
Master seminar: Environmental Physics (Supervision of numerous projects on ocean circulation, age determination, paleoclimate reconstruction) (24 h). This seminar is an advanced Master of Physics seminar in which students work with present day challenges and literature of climate change, environmental physics, isotope toolboxes and cycling of constituents in the atmosphere, ocean, and cryosphere. The students work through the study of modern literature and scientific publications, present

a 45 min “free speech talk” and answer expert questions. Lastly the students have to provide a report of roughly 10 pages summarizing their understanding and progress of the treated subject matter.

Seminar (Journal Club): Recent Literature in Climate and Environmental Science (Supervision of talks and discussion on the recent or most relevant literature of Environmental and Climate Physics) (24 h). This seminar is for the Master- and PhD students of the Environmental Physics department. At the start of the semester, we select a challenging subject (such as Climate engineering, Permafrost melting, Climate extreme weather, Stratospheric Ozone future, Potential of North Atlantic overturning circulation, new instrumental technologies (Machine learning), etc.). Together with the students we select literature, build teams, and present talks on the subject matters bi-weekly, which are afterwards intensively debated. Hence the students gain a critical view of the recent scientific literature and we teach to look beyond the obvious implication or appreciate the major implication of scientific literature. (Co-organizer since 2014)

Special (Ober-) Seminar: Physics of Environmental Archives: In this seminar we discuss recent literature, scientific and technological advances as well as the methods applied in our team or related to it. The seminar is also to train scientific skills, invite national and international experts and to provide the team members a platform to present their research effort and success. In addition, we discuss and practice presentations styles, team management, security in science, scientific ownership and cooperation, writing and publication (36 h continuously without lecture term interruptions, since 2012)

Bachelor seminar: Isotope methods: In this seminar, students need to prepare 30 minutes talks on fundamental techniques and methods of water and carbon isotopes for environmental science (physics and climate studies) and forensics. This seminar has become a major door into Environmental Physics as we chose subjects that are well supported in textbook literature. The series traditionally starts with water isotopes and follows with carbon cycles subjects including the use of radiocarbon. The final subjects are on forensics, which every term is a highlight of the seminar, in which we sometimes even present experiments (D_2O ice cube and measure methane emission of respiration using CRDS). (Supervision of talks and discussions on the use of isotope tools in environmental research) (24 h)



Teaching also concerns the number of oral exams. Since I am full Professor in Physics and Earth Sciences, I have been examiner of a large number of students (>50) in their final master exam, I participate regularly in the examination of students who apply to join Heidelberg University and I have participated several times in the graduate days program of the physics department.

Seminar: Methods of Environmental and Climate Research (24 h) Within this seminar (often as blockseminar) we discuss modern discoveries of marine geochemical cycles and climate with master students of the earth science who have followed the lecture Marine Geochemistry. Topics include the use of stable isotopes and novel elemental thermometers to reconstruct past climate change, novel nutrient and pH tracers such as B- and Ba-Isotopes, the use of radiogenic isotopes and the radioactive ratio of Pa/Th to trace ocean circulation and overturning strength. Mostly we also include subjects on

particular analytical techniques. The seminar has been run during three winter terms and receives excellent evaluations regarding the preparation of the talks and the help provided by the tutors of the individual talks.

Practical exercise: Thermal Ionization Mass Spectrometry / Inductively coupled Plasma Source Mass spectrometry (6 h) During this practical exercise the earth science bachelor students learn about the use of mass spectrometry to precisely measure the ratio of radiogenic strontium isotopes. They receive a theoretical introduction in the method and its applicability and then each student is requested to work on the instrument, prepare a sample and evaluate the mass spectra and signal intensity.
Other teaching activities involve school classes. Three times in the past five years has the team invited the Hector class or individual members of this class (a training program in MINT subjects) to join our team to conduct climate science. This was always a great success. We further conduct short individual practical projects so called BOGY practical work on a regular basis.



Visit of the Hector Class in 2016 to study cold-water corals

Mentoring Students

Since my arrival at Heidelberg University I have spent countless hours in mentoring students at all levels of their studies and career. I have participated in the “meat a professor” events and I have kept 30 minutes time to exchange after each lecture to answer questions and stimulate the direct contact to the partly giant groups of students. I try to be approachable. Consequently, over the years I have listen to the students and hopefully showed possible pathways or just support the routes already engaged. There is nothing more stimulating and rewarding than an hour interview with individuals, to learn about their choices and innovative strategies to reach their goals and the feedback they can give on my own appearance in teaching. With by now more than three hundred individual support-, reference- and appraisal letters in a few years only, I hope to support the students as much as I can, since I strongly believe that supporting the students is supporting the future of excellent science.

Supervised Students

(MA - Master student project, BA - Bachelor student project, State Ex - Project for the future school teacher exam (Magister), PhD - Ph.D. project)

Many of the students have carried out their scientific projects with several supervisors (cos), in particular at the start of my career and now again as the team grows and much help in supervising comes from the postdoctoral fellows.

In cases marked as (cos) the responsible supervisors have been Prof. A. Mangini (1993 - 2001), Prof. G. Wagner (1997-2001) and Prof. C. Colin (2001-2012). At Heidelberg University the students benefit from the presence and support of the postdoctoral fellows Dr. Jens Fohlmeister (2012-2015), Dr. Andrea Schröder-Ritzrau (since 2012), Dr. Jörg Lippold (2013-2014), Dr. Michael Deininger (2015-2016), Dr. Lucile Bonneau (2016-2018), Dr. Freya Hemsing (2018-2019), Dr. Steffen Therre (2020-2022), Dr. Marleen Lausecker (2021-2022), Dr. Jasmin Link (2021- 2022), Dr. Sophie Warken (since 2018), Dr. Antao Xu (since 2024), and Dr. Sahra Greve (since 2026). In total I have supervised or was involved in more than 173 individual research projects (>150 since my start as Professor in Heidelberg). I have further co-evaluated a large number of Master and Bachelor Projects (>200).



Doctoral Students

1. **Ronzon Mallick** (1998-2001, cos)
2. **Audrey Lutringer** (2002-2006, cos)
3. **Alkis Gourgiotis** (2004-2008, cos)
4. **Kevin Copard** (2007-2010, cos)
5. **Benny Antz** (2013-2016, cos)
6. **Patrick Blaser** (2014-2017)
7. **Jennifer Arps** (2014-2017)
8. **Freya Hemsing** (2014-2017)
9. **Jasmin Link** (2015-2021)
10. **Thomas Krengel** (2016-2020)
11. **Steffen Therre** (2016-2020)
12. **Evan Cooper Border** (2016-2020)
13. **Marleen Lausecker** (2017-2021)
14. **Inga Kerber** (2019- 2023)
15. **Nils Schorndorf** (2019- 2024)
16. **Elvira Beisel** (2021-.2024)
17. **Eva Rückert** (2021 -2024)
18. **Yao Wu** (2021 – 2025)
19. **Sahra Greve** (2022 – 2025)
20. **Henrik Eckhardt** (2019 – 2025)
21. **Kathikeyan Arul** (2025 –)
22. **Carmen Schöfer** (2026 –)



Master Students:

1. **Dieter Pech** (1994, cos)
2. **Christine Haas** (1994 State Ex1, cos)
3. **Anke Scholz** (1995, cos)
4. **Stefan Keßler** (1995, cos)
5. **Stefan Kühn** (1996, cos)
6. **Margarethe Braun** (1996, cos)
7. **Maria Breu** (1996 State Ex2, cos)
8. **Jan Fietzke** (1997, cos)
9. **Stefanie Seumer** (1997, cos)
10. **Elke Wiedner** (2000, State Ex3, cos)
11. **Marion Tressens Fedou** (2005)
12. **Estelle Ricard** (2006)
13. **Kevin Copard** (2007, cos)
14. **Lucie Bonneau** (2011, cos)
15. **Chrislov Kambigiu** (2012)
16. **Harold Foret** (2012)
17. **Vannina Grimaldi** (2012, cos)
18. **Patrick Blaser** (2013)
19. **Freya Hemsing** (2013)
20. **Astrid Walder** (2014)
21. **Katrin Leutz** (2014)
22. **Julius Förstel** (2017)
23. **Anne-Marie Wefing** (2016)
24. **Steffen Therre** (2016)
25. **Hannah Nowitzki** (2014)
26. **Frerk Pöppelmeier** (2016)

27. **Simon Ritter** (2015)
28. **Jörn Profe** (2014, cos)
29. **Marleen Lausecker** (2017)
30. **Jasmin Link** (2015)
31. **Thomas Krengel** (2016)
32. **Evan Cooper Border** (2016)
33. **Jorge Sanchez** (2016)
34. **Marvin Bobrowski** (2017)
35. **Christoph Dornick** (2018)
36. **Hannah Schneider** (2018)
37. **Amrei Glasder** (2018)
38. **Maksym Gachkivskyi** (2018)
39. **Simon Steidle** (2019)
40. **Inga Kerber** (2019)
41. **Nils Schorndorf** (2019)
42. **Markus Miltner** (2019)
43. **Elvira Beisel** (2021)
44. **Eva Rückert** (2020 State Ex.4)
45. **Laura Lütkes** (2021)
46. **Alexander Hubig** (2021)
47. **Judith Gafriller** (2022)
48. **Achim Retzbach** (2022)
49. **Moritz Hallmaier** (2022 – 2023)
50. **Sina Schreiber** (2022 – 2023)
51. **Pauline Seubert** (2022 – 2023)
52. **Aaron Mielke** (2022 – 2024)
53. **Celine Kolb** (2023 – 2024)
54. **Karthik Arul** (2023 – 2024)
55. **Buhar Bacho** (2023 – 2024)
56. **Hannah Janecke** (2023 – 2024)
57. **Fabian Schneider** (2023 – 2024)
58. **Stefanie Gutmayer** (2024 – 2025)
59. **Johanna Rampmeier** (2024 –)
60. **Marika Hiemisch** (2024 - 2025)
61. **Dana Hölkermann** (2025)
62. **Carmen Schöfer** (2025)
63. **Oliwia Kubiack** (2025 – 2026, cos)
64. **Katrin Petranovic** (2025 – 2026, cos)
65. **Finn Meyhen** (2026 – , cos)
66. **Mirija Fahm** (2026 – ,cos)
67. **Joven Mandair** (2026 –)
68. **Laura Schröpfer** (2026 –)
69. **Ida Schatz** (2026 –)

BACHELOR STUDENTS:

1. **David Wichmann** (2013)
2. **Matthias Kuderer** (2013)
3. **Philipp Eisinger** (2014)
4. **Julius Förstel** (2014)
5. **Anne-Marie Wefing** (2014)
6. **Steffen Therre** (2014)
7. **Richard Dietrich** (2014)
8. **Frerk Pöppelmeier** (2014)
9. **Barbara Hennrich** (2014)
10. **Kai Kaeser** (2014)
11. **Marleen Lausecker** (2014)
12. **Niclas Rieger** (2015)
13. **Alexander Hubig** (2015)
14. **Henrik Eckhardt** (2015)
15. **Kai Nakajima** (2016)
16. **Christoph Dornick** (2016)
17. **Carla Roesch** (2017)
18. **Elvira Beisel** (2017)
19. **Paul Roßteutscher** (2017)
20. **Hannah Rosenthal** (2017)
21. **Lukas Proß** (2017)
22. **Michelangelo Tagliavini** (2018)
23. **Christian Wirths** (2018)
24. **Jan Kamm** (2019)
25. **Tamara Dardoufas** (2019)
26. **Paul Müller** (2019)
27. **Kathrin Brocker** (2019)
28. **Jonas Schandl** (2019, cos)
29. **Aaron Mielke** (2020)
30. **Moritz Hallmaier** (2020)
31. **Lea Kuchalski** (2020, cos)
32. **Celine Kolb** (2020)
33. **Fabian Kontor** (2020)
34. **Arvinash Signam** (2020, cos)
35. **Riccardo Lizio** (2022)
36. **Selina Pohl** (2022)
37. **Niklas Merz** (2022)
38. **Jakob Brinkmann** (2022)
39. **Felix Adrian** (2023, cos)
40. **Marika Hiemisch** (2022)
41. **Marius Feuerle** (2022)
42. **Melinda Tanriverdi** (2022)
43. **Hanno Borck** (2023)
44. **Louisa Brückner** (2023)
45. **Joven Mandair** (2023)
46. **Amrei Grund** (2023)
47. **Ruben Zeitler** (2023, cos)
48. **Laura Schröpfer** (2023)
49. **Luisa Stuhrmann** (2023)
50. **Philipp Huppert** (2023, cos)
51. **Carmen Schöfer** (2024)
52. **Lisa Hessenthaler** (2024)
53. **Katrin Petranovic** (2024)
54. **Ida Schatz** (2024)
55. **Clara Harms** (2024)
56. **Amelie Tabea Steinberg** (2024)
57. **Mathis Härtling** (2024)
58. **Marit Noelle Neumann** (2024)
59. **Kira Just** (2024)
60. **Johanna Spielmann** (2025)
61. **Hanno Borck** (2025)
62. **Marc Nölken** (2025)
63. **Gordon Thörel** (2025 – 2026)
64. **Jonathan Stohl** (2026, cos)
65. **Anna-Luka Höfling** (2025)
66. **Lena Gerlach** (2025 – 2026)
67. **Anselm Schmid** (2026, cos)
68. **Pauline Beyer** (2026, cos)

External student research projects which I co-mentored:

1. **Jens Terhaar** – MA – LSCE Gif-sur-Yvette 2016
2. **Aaron Spring** – MA – MPI Hamburg 2017
3. **Mario Veicht** – MA – Univeristy Mainz 2018
4. **Andreas Luckert** – MA – Univeristy Valencia 2018
5. **Simon Max** – MA – ETH Zürich 2020
6. **Alexander Rudolph** – MA – University Mainz 2022
7. **Natalie Schäfter** – BA – Ziel AG 2022
8. **Jonas Schandl** – MA – Geowissenschaften Heidelberg 2022/2023
9. **Moritz Raab** – MA – Potsdam Institut für Klimafolgenforschung 2023/2024
10. **Ceren Ekinci** - MA - University of Barcelona, Modellierung komplexer Systeme 2023/2024
11. **Constantin Schorling** - BA - Svalbard Norwegen, Geophysik und Klimawandel, 2024
12. **Mareike Reiser** - MA - AWI Bremerhaven, Radioactive tracers in the Arctic 2024-2025
13. **Rada Beronova** - MA - Utrecht University, Climate Modelling, 2024 – 2025
14. **Louisa Brückner** - MA - LSCE, Saclay, Ice core research, 2024 – 2025

All of these projects were important to me as an advisor and co-adviser, even if I have had only a small contribution in the training of the students in some of the PhD projects, which are labeled as (cos, vis). Most of all, however, I am proud and honored by the success of my students who reach far in science and in life. Despite my implication in various student projects I further mentored the postdoctoral fellow Dr. Candace Major for a very short time (today NSF-Program Manager), Dr. Jean-Carlos Montero-Serrano equally only a few months in my team at LSCE. He went on a Professor position (Rimouski, Canada). I hosted the Marie Curie international outgoing fellowship of Dr. Paolo Montagna who became a CNR staff scientist in Bologna, Italy. Dr. Qingfeng Shao is Professor at Nanjing-Normal University, China. He was for 4 months a postdoctoral fellow in my team boosting his expertise for his new position. I further mentored the postdoctoral fellows Dr. Jörg Lippold (presently group leader and former Emmy-Noether fellow at GEOW, Heidelberg University), Dr. Michael Deininger (after a post-doctoral fellowship at University Dublin he is now postdoc at University Mainz), Dr. Jens Fohlmeister was an exceptional postdoctoral fellow in my team for two years. He recently obtained the position of a permanent researcher at the Bundesamt für Strahlenschutz and was formerly a DFG postdoctoral researcher at the Potsdam Institute for Climate Impact Research and of University Potsdam. Dr. Helene Hoffmann was a few months part of our team in Heidelberg and is now at the British Geological Survey. Moreover, I mentored Dr. Lucile Bonneau (she changed to private industry by the end of 2017). Dr. Freya Hemsing was a postdoctoral fellow in my team (she went on to new adventures in Management early 2019). Dr. Quentin Dubois Dauphin was DAAD exchange postdoctoral fellow most recently and presently works as scientist at IPGP France. Dr. Marleen Lausecker was a few months a part time postdoctoral position and moved on to AWI Bremerhaven. Dr. Steffen Therre was part of the team after his PhD in 2020 until 2022. He moved to private green industry, Sweden, Dr. Jasmin Link was a DFG postdoctoral fellow in my team between 2021 and 2022. Dr. Sophie Warken was for numerous years as postdoc and research assistant in my team and is now a senior researcher and group leader managing her own team on tropical climate and speleothem at the Earth Science and Environmental Physics Institute. Dr. Antao Xu has joined our team in 2024 and he has obtained a DFG Eigenstelle for the upcoming three years from 2026 to 2029. Dr. Nils Schorndorf was a postdoctoral scientist for a year and now moved into new research directions as postdoc at the Pedagogical University of Heidelberg in the frame of the KI:EO project. Dr. Sahra Greve obtained her PhD in 2025 and has now become a postdoc in my team leading her own developed research project on submerged groundwaters in reef environments for the next three years.

Regarding laboratory techniques, instruments and security issues related to clean laboratory work, I have further trained a number of laboratory assistants and engineers including the staff members Eline Sallé, Claude Noury, François Thil, and Rene Eichstädter.

Membership

AGU, DPG, Geochemical Society, HCE

Scientific Administration

Since 2022 I am a member of the Large Equipment Commission and Informational Technology Commission of the DFG. As such I am involved in the scientific evaluation of the proposal review process and decision verification. I take part in the planning of future innovation calls and comment and review the reports of project results.

Since 2013 I participated and coordinated a few search committees at Heidelberg University as part of the Physics or Earth Science faculties. I further participated in CNRS search committees several times. I participated in Review panels of the Swiss National Science Foundation young investigator grants and the panel for Seed Grants for New African Principal Investigators supported by the BMBF through The World Academy of Science (TWAS). Lastly, I participate in the evaluation of international bilingual teaching programs supported by the German – French University (DFH) at Saarbrücken, Germany. Over the course of the past years as a Professor at Heidelberg University I have further participated in more than 50 PhD panels and examinations in Germany, France and the UK.

Management:

Since 2013: I am acting and/or co-director of the Institute of Environmental Physics at Heidelberg University, with 25 permanent staff, more than 10 postdoctoral fellows, more than 35 PhD students and more than 50 master and bachelor students every year. Hence, a total staff of 120 members including all career levels from secretary and technicians to early stage researchers and senior professors. Responsibility included all belongings of the daily operation of the institute including the individual career planning, budget developments, conflict management, and controlling, as well as reporting to the faculty and directorate of University. Moreover, this position requires responsibility and action towards the larger public, press and supervision of the total annual budget (>3 M€) as well as the individual project progress (> 40 research projects) and the use of infra-structure, and space. The responsibility also includes the organization of the terms teaching program, and hosting of guests. Lastly, this role imbodies the generation of a cooperate identity as part of the Physics department of Heidelberg University and to shape the future science programs.

2018 – 2020: I was member of the Board of directors of the Heidelberg Graduate School of Fundamental Physics and member of the HeiDOC Board supporting PhD students. Responsibility included the review of support applications, assisting in the teaching program, and supervision of the activities and budgets of the graduate school, as well as its future development.

2006 – 2010: Group leader at the CEA, Saclay, France. The task included the career management of 17 permanent and 5 other scientific staff members (fellows, and students). Responsibility included the annual team evaluation, the definition of individual perspectives and scientific goals and the planning of the individual career strategy. Moreover, the individual on the job education plan was subject of the team leader tasks as well as the communication and promotion towards the Laboratory department leaders and directors. Finally, the tasks included the supervision of laboratory work and general work security. Lastly the team leader was responsible for the controlling and supervision of the teams budget plan (~500 k€ per year), strategic decisions, and technological improvements.

Individual Career Mentoring:

2015 Mentor of the young researcher Dr. Kerstin Schepanski as part of the Leibniz Society program to support woman on higher level science positions and professorships.

2011 Mentor of Dr. Jean Carlos Monterro-Serano for an application as professor at University Rimouski, Canada

2025 Mentor of Dr. Mohd Soheb as part of the Heidelberg University program on the path to a professorship.

Reviewer for

Journals:

G^3, Geochimica Cosmochimica Acta, Earth and Planetary Science Letters, Chemical Geology, Quaternary Reviews, Quaternary Science Reviews, Geology, Quaternary Geochronology, Marine Geology, Nature, Nature Communications, Science Advances, PNAS, Communication Earth and Environment, and Paleoceanography

Funding Bodies

National Science Foundation NSF (USA), Deutsche Forschungsgemeinschaft DFG (Germany), Agence National de Recherche ANR (France), Centre National de la Recherche Scientifique CNRS (France), Flanders Research Association FWO (Belgium), Ireland Science Foundation ISF (Ireland), National Environmental Research Council NERC (UK), Leverhulm Trust (UK), Pazy Foundation (Israel), UNESCO-TWAS, Deutsch – Französische Hochschule, Saarbrücken, Swiss National Science Foundation (SNF). More punctuated I further review proposals in the frame of specific research calls from foundations and national science agencies in Italy, Israel, and France.

Field Work

1993-2000	Participation in numerous field studies of travertine, tufa, and speleothems in Central Europe including sampling of speleothems in the Alps (Austria) and organization of a drilling of travertine in Bad Langensalza (DFG-Ma821/16-1)
2000	Participation in RV Meteor 48/4 cruise (4 weeks South Atlantic Walvisbay-Walvisbay)
2004	Participation in Marion-Dufresne cruise Cadicor (2 weeks in the Mediterranean and the Gulf of Cadiz: Malta - Lisbon)
2008	Participation in Marion-Dufresne cruise Microsystems (ESF Microsystems project: 2 weeks in the Gulf of Cadiz and along the French and Portuguese coast: Brest - Cadiz).
2011	Participation in Pourquoi Pas? cruise BobEco (2 weeks Bay of Biscay: Brest – Brest)
2012	Coordinator (chief scientist) NO Thalassa cruise ICECTD (4 weeks Brest – Reykjavik – Ponta Delgada)
2014	Participation in the MS Merian cruise MoccoMeBo (4 Weeks Malaga – Gran Canaria)
since 2013	Numerous field trips to the Franconian Alp regarding the study of travertine and cave carbonate deposits.
2017	Coordinator (chief scientist) RV Meteor cruise M141-2 Transit-Valorization (19 days on an East Atlantic to Black Sea transit from Ponta Delgada to Varna)
2018	Coordinator (chief scientist) RV Meteor cruise M151 ATHENA (4 weeks East Atlantic - Ponta Delgada - Funchal)
2020	Participation in a Cave Field Work in Mexico in cooperation with Prof. Fernandez Lases, and Dr. Jeronimo Avilez, several caves visited and speleothems collected. The chief scientist of the project was Dr. Sophie Warken.

Organization of Workshops and Conferences

1997	Workshop on $^{231}Pa/^{230}Th$ in the marine environment - Heidelberg Academy of Science, Heidelberg, Germany
2003	Convenor of the session, coral growth and paleoceanography - ISDSC Erlangen
2006	Workshop on Multicollector-ICP-MS and the Earth Sciences - LSCE Gif-sur-Yvette
2007	Co-Convenor of the TRACES workshop, Faro, Portugal
2009	Co-Convenor of ISOTRACE Workshop at INSTN, Saclay, France
2011	Convenor of the session, Climate change viewed through cold-water corals – EGU, Vienna, Austria
2012	Steering Committee member and session convenor of the 21th International Radiocarbon Conference in Paris
2012	Steering Committee member and session convenor of the 5th international Symposium on Deep Sea Corals in Amsterdam
2013 & 2015	Workshop on Radiocarbon: First and Second Heidelberg Radiocarbon Day
2015	Convenor of the session 02c: Past Changes in Ocean Biogeochemistry and Circulation and their Interaction with Climate: Goldschmidt Conference in Prague
2015	Host of the scientific and alumni day "40 years Environmental Physics" at Heidelberg University
2016	National Workshop on Cold Water Corals and Climate - Heidelberg, Germany
2017	Convenor of the session 17c: Geochemical Insight into Ocean Change during the Plio-Pleistocene, Goldschmidt Conference in Paris.
2019	Convenor of the session 08f: The Role of Carbon in Regulating Climate States: Lessons from Earth's Past. Goldschmidt Conference in Barcelona
2024	Convenor of the session S27 at the PAGES 2025 Open Science Meeting in Shanghai entitled: Reconstructing intermediate circulation and water mass properties through time

International and national collaborators

Sidney Hemming, LDEO, Columbia University, New York, USA
David van Rooij, Université Gent, Belgium

Lelia Matos and Antje Völker, IMPA Lisbon, Portugal
Furu Minies, NIOZ, Texel, Netherlands
Sophie Arnaud-Haond IFREMER, Montpellier, France
Christophe Colin, GEOPS, University Paris-Sud, Orsay, France
Dierk Hebbeln, Claudia Wienberg, Jürgen Titschak, MARUM Bremen, Germany
Laura Robinson, University Bristol, UK
Marina Carreiro Silva, University Azores, Ponta Delgada, Portugal
Martin Frank, and Jan Fietzke, GEOMAR, Kiel, Germany
Paolo Montagna and Marco Taviani, Bologna, Italy
Aneleen Foubert, University Fribourg, Switzerland
Gerrit Lohmann and Martin Werner AWI, Bremerhaven, Germany
Jacek Raddatz, University Frankfurt, Germany
Eric Douville, Nadine Tisnerat-Laborde, Christine Hatté, LSCE, Gif-sur-Yvette, France
Raimund Muscheler, University of Lund, Schweden
Qingfeng Shao, Nanjing Normal University, China

Languages

German (native), English (fluent), French (fluent), Spanish (basic)

List of Publications

ORCHID-ID: 0000-0002-0416-9546, PUBLONS-ID: D-6486-2016

H = 42, ~ 4848 Citations (06/2025) Publons (145 records)

H = 52, ~ 8086 Citations (07/2026) Google Scholars (>140 records found)

~134 peer-reviewed publications, 6 Book Section, and 14 other Papers

A. High Impact and Best Cited/Downloaded:

1. S. Burns, A. Matter, N. Frank and A. Mangini: Speleothem-based paleoclimate record from northern Oman, *Geology,* **26**, 499 - 502, (**1998**)
2. A. Mangini, M. Lomitschka, R. Eichstädter, N. Frank , S. Vogler, G. Bonani, I. Hajdas and J. Pätzold: Coral provides way to age deep water, *Nature,* **392**, 347, (**1998**)
3. N. Frank, M. Braun, U. Hambach, A. Mangini and G.Wagner: Warm-period growth of travertine during the last interglaciation in southern Germany, *Quaternary Research,* **54**, 38-48 (**2000**)
4. C. Spötl, A. Mangini, N. Frank, R. Eichstädter, S. Burns: Start of the last interglacial period at 135 ka: Evidence from a high Alpine stalagmite, *Geology,* **30**, 815-818 (**2002**)
5. N. Frank, M. Paterne, L. Ayliffe, T. Van Weering, J.-P. Henriet, and D. Blamart, Eastern North Atlantic deep-sea corals: Tracing upper intermediate water $\Delta^{14}C$ during the Holocene, *Earth and Planetary Science Letters,* **219**, 297-309 (**2004**)
6. Frank,N., Freiwald, A., Lopez-Correa, M., Eisele, M., Hebbeln, D., Wienberg, C., van Rooij, D., Colin, C., van Weering, T., de Haas, H., Roberts, M., Buhl-Mortensen, P., B. de Mol, Douville, P., Blamart, D., and Hatté, C., North Atlantic coral reefs and climate change, *Geology*, **39**, 743-746 (**2011**)
7. L-A. Henry, N. Frank, D. Hebbeln, D. Wienberg, L. Robinson, T. van de Flierdt, M. Dahl, M. Douarin, C. Morrison, M. Lopez-Correa, A.D. Rodgers, J.M. Murray, Global ocean conveyor lowers extinction risk in the deep sea, *Deep Sea Research Part I*: Oceanographic Research Papers, **88**, 8-16 (**2014**)
8. E. Böhm, J. Lippold, M. Gutjahr, M. Frank, P. Blaser, B. Antz, J. Fohlmeister, N. Frank, M.B. Andersen, M. Deininger, Strong and deep Atlantic meridiornal overturning circulation during the last glacial cycle. *Nature*, **517**, 73-76 (**2015**)
9. Johannes M. Miocic, Stuart M. V. Gilfillan, Norbert Frank, Andrea Schroeder-Ritzrau, Neil M. Burnside and R. Stuart Haszeldine, 420,000 year assessment of fault leakage rates shows geological carbon storage is secure, *Scientific Reports*, **9**, 769 (**2019**)
10. Sophie Warken, Nils Schorndorf, Wolfgang Stinnesbeck, Dominik Hennhoefer, Sarah Stinnesbeck, Julius Förstel, Simon Steidle, Jerónimo Avilés Olguin, Norbert Frank, Solar Forcing of Early Holocene Droughts on the Yucatán Peninsula, Scientific Reports, 11 (**2021**)
11. Jens Fohlmeister, Marc Luetscher, Christoph Spötl, Andrea Schröder-Ritzrau, Birgit Schröder, Norbert Frank, René Eichstädter, Martin Trüssel, Vanessa Skiba & Niklas Boers, The role of Northern Hemisphere summer insolation for millennial-scale climate variability during the penultimate glacial, Commun Earth Environ 4, 245 (**2023**)
12. Jacek Raddatz, Elvira Beisel, Andrea Schröder-Ritzrau, Christian Betzler, Ronny Friedrich, Norbert Frank, Variable ventilation ages in the equatorial Indian Ocean thermocline during the LGM, Scientific Reports, 13, 11355 https://doi.org/10.1038/s41598-023-38388-z (**2023**).

13. Nils Schorndorf, Norbert Frank, Simon M. Ritter, Sophie F. Warken, Christian Scholz, Frank Keppler, Denis Scholz, Michael Weber, Jeronimo Aviles Olguin, and Wolfgang Stinnesbeck, Mid- to late Holocene sea-level rise recorded in Hells Bells $^{234}U/^{238}U$ ratio and geochemical composition, Scientific Reports, 13, 10011 (**2023**)
14. Vanessa Skiba, Christoph Spötl, Martin Trüssel, Andrea Schröder-Ritzrau, Birgit Schröder, Norbert Frank, René Eichstädter, Rik Tjallingii, Norbert Marwan, Xu Zhang, Jens Fohlmeister, Millennial-scale climate variability in the Northern Hemisphere influenced glacier dynamics in the Alps around 250,000 years ago, Communication Earth Environment 4, 426 (**2023**)
15. Warken, SF, Riechelmann, DFC, Fohlmeister, J, Schröder-Ritzrau, A, Frank, N, Scholz, D, Jochum, KP, Mirea, IC, Constantin, Spötl, C, Dynamic processes determine precipitation variability in Eastern Central European since the Last Glacial Maximum, Communication Earth and Environment (**2024**)
16. D. Smrzka, Y. Tseng, J. Zwicker, A. Schröder-Ritzrau, N. Frank, A.-D. Schmitt, T. Pape, D. Birgel, J. Peckmann, S. Lin and G. Bohrmann, Marine carbon burial enhanced by microbial carbonate formation at hydrocarbon seeps, Communication Earth and Environment, 6, 2662-4435, doi: 10.1038/s43247-024-01960-0 (**2025**)
17. M. Hallmaier, E. M. Ruckert, Y. Chen, J. M. Link, R. Lizio, G. Lohmann, M. Gutjahr and N. Frank, Glacial Southern Ocean deep water Nd isotopic composition dominated by benthic modification, Scientific Reports, 15, 2586, doi: 10.1038/s41598-025-86350-y (**2025**)

B. Peer-reviewed Publications:

18. N. Frank and A. Mangini, A simplified procedure for the measurement of ^{231}Pa in Mn encrustations, *Nucl. Inst. Meth. Phys. Res. Section* B **101**, 258 - 262, (**1995**)
19. A. Bollhöfer, A. Eisenhauer, N. Frank, D. Pech and A. Mangini, Thorium and uranium isotopes in a manganese nodule from the Peru Basin via alpha spectrometry and thermal ionization mass spectrometry (TIMS): Are manganese supply and growth related to climate? *Geologische Rundschau* **85**, 577 - 585 (**1996**)
20. T. Asmus, M. Frank, C. Koschmieder, N. Frank, R. Gersonde, G. Kuhn and A. Mangini: Variations of biogenic particle flux in the southern Atlantic section of the Subantarctic Zone during the late Quaternary: Evidence from sedimentary $^{231}Pa_{ex}$ and $^{230}Th_{ex}$, *Marine Geology* **159**, 63 - 78, (**1999**)
21. A. Bollhöfer, N. Frank, S. Roloff., A. Mangini, J. Scholten: A record of changing redox conditions in the northern Pem Basin during the Late Quaternary deduced from Mn/Fe and growth rate variations in two diagenetic manganese nodules *Earth and Planetary Science Letters* **170**, 297-309 (**1999**)
22. J. Fietzke, A. Bollhöfer, N. Frank, and A. Mangini: Protactinium determination in manganese crust VA13/2 by thermal ionization mass spectrometry (TIMS), *Nucl. Inst. Meth. Phys. Res.,* B **149**, 353 - 360, (**1998**)
23. U. Neff, A. Bollhöfer, N. Frank and A. Mangini: Explaining discrepant depth profiles of $^{234}U/^{238}U$ and $^{230}Th_{exc}$ in Mn-crusts, *Geochimica Cosmochimica Acta* **63**, 2211-2218, (**1999**)
24. N. Frank, A. Mangini, and G. Wagner: $^{230}Th/U$ dating of the Trojan 'water quarries', *Archaeometry* **44,** 305-314 (**2002**)
25. R. Mallick and N. Frank: A new technique for precise uranium-series dating of travertine micro-samples, *Geochimica et Cosmochimica Acta* **66**/24, 4261-4272 **(2002)**
26. C. Causse, I. Moretti, R. Eschard, L. Micarelli, B. Galeb, and N. Frank, Kinematics of the Corinth Gulf inferred from calcite dating and syntectonic sedimentary characteristics, Comptes Rendus Geoscience *Tectonics* **336**, 281-290 **(2004)**
27. S. Boulay, C. Colin, A. Trentesaux, N. Frank and Z. Liu, Sediment and East Asian Monsoon intensity over the last 450 kyr - Mineralogical and geochemical investigation on the South China Sea sediments, *PPP* **228**, 260-277 (**2005**)
28. Z. Liu, C. Colin, A. Trentesaux, G. Siani, N. Frank, D. Blamart, S. Farid, Late Quaternary climatic control on erosion and weathering in the eastern Tibetan Plateau and the Mekong Basin, *Quaternary Research* **63**, 316-328 (**2005**)
29. C. Colin, L. Turpin, D. Blamart, N. Frank, C. Kissel, C Duchamp, Evolution of weathering patterns in the Indo-Burman Ranges over the last 280 kyr: Effects of sediment provenance on 87Sr/86Sr ratios tracer, *G^3*, **7** (3), doi:10.1029/2005GC000962 **(2006)**
30. N. Frank, L.Turpin, G. Cabioch, D. Blamart, C. Colin, M. Tressens-Fedou, P. Bonhomme, and P. Jean-Baptist, Open system U-series ages of corals from a subsiding reef in New Caledonia: Implications for Holocene sea level rise, and subsidence rate, *Earth and Planetary Science Letters* **249**, 274-289 **(2006)**
31. N. Frank, A. Mangini, B. Kober, Carbonate precipitation, U series dating, and U-isotopic variations in a Holocene travertine platform from Bad Langensalza - Thuringia Basin, *Quaternaire* **(07/2006)**
32. G. Cabioch, L. Montaggioni, N. Frank, C. Seard, E. Sallé, C. Payri, B. Pelletier, and M. Paterne, Successive reef depositional events along the Marquesas foreslopes (French Polynesia) since 26 ka, *Marine Geology*, **254**, 18-34 **(2008)**
33. Guy Cabioch, Lucien Montaggioni, Gilbert Camoin, Véronique Chazottes, Hélène Dalamasso, Norbert Frank, Claude Payri, Michel Pichon, Tokiyuki Sato Anne-Marie Semah & Nicolas Thouveny, The chronology and structure of the western New Caledonian barrier reef tracts, Paleogeography, Paleoclimatology, Paleoecology, **268**, 91-105 **(2008)**
34. Christophe Colin, Giuseppe Siani, Farid Seguini, Dominique Blamart, Catherine Kissel, S. Giunta, Jean-Pierre Suc, Fabienne Orsag-Sperber, Zhifei Liu, Norbert Frank, Louis Briqueu, Variations of sea level

and of Northern African climate between 6,2 and 4,9 Myr ; relationships with the Messinian Salinity Crisis, C.R. Géoscience, **340**, 749-760 **(2008)**

35. H. de Hass, F. Mienis, N. Frank, T. Richter, R. Steinbacher, H. de Stigter, C. van der Land, T. van Weering Morphology and sedimentology of (clustered) cold water coral mounds at the south Rockall Trough margins, NE Atlantic Ocean, FACIES **55**, 1-26 **(2009)**
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