

## Prof. Dr. Ralf Tiedemann

**Date of birth:** January 19, 1959  
**Place of birth:** Bremerhaven, Germany  
**Nationality:** German

**Degrees:** 1991 Ph.D., Kiel University, Germany  
1986 Diploma in Geology, Kiel University, Germany

**Positions:** 2005 - present Professor for Paleoclimate Research at Bremen University/AWI Bremerhaven  
1993 - 2005 Scientist at IFM-GEOMAR, Kiel  
1991 - 1993 Research Associate at Kiel University, Inst. for Geosciences

**Research Work:** My research is oriented towards interpreting biogeochemical signatures of oceanographic, climatologic and tectonic processes to improve our understanding about the natural climate variability of Earth's history. Therefore, I spread my investigations on different oceanic regions as well as on different but compatible timescales: tectonic, orbital and centennial to millennial. The comparison of paleoclimatic reconstructions with results from Earth-system models plays a key role in probing past climate variability. Ongoing projects aims at identifying the mechanisms and processes that are associated with abrupt climate changes, warmer than present climate stages, and disentangling linkages and feedback loops in the complex atmosphere-ocean system and their role in the carbon cycle.

**Professional Activities**

2012 - 2015	Deputy Director of AWI
2011 - present	Chair of Helmholtz Climate Initiative REKLIM Topic 8: Abrupt climate change derived from proxy data
2009 - present	Managing Director of the German Society of Polar Research
2006 - present	Head of Research Section "Marine Geology" at AWI Bremerhaven
2006 - present	Head of Research Division "Geosciences" at AWI Bremerhaven
2006 - present	Member of the Extended Directorate at AWI Bremerhaven
2006 - present	Member of the Scientific Council at AWI Bremerhaven
2003 - 2003	Co-chief on Ocean Drilling Program Leg 202
1993 - 2005	Head of the Stable Isotope Laboratory at IFM-GEOMAR, Kiel
1999 - 2001	Member of the Ocean Drilling Program Working Group Climate and Tectonics

### **Expeditions, last 5 years (applicant):**

F.S. "Polarstern" Expedition PS 97, 16.02.16-08.04.17. Punta Arena – Punta Arenas, Drake Passage

F.S. "Sonne" Expedition SO (MANIHIKI II), 19.11.2012—06.01.2013, Suva (Fidschi) — Auckland (Neuseeland), Pacific, BMBF 03G0225B.

F.S. "Sonne" Expedition SO-213/1 (SOPATRA), 27.12.2010 -12.01.2011, Valparaiso (Chile) - Valparaiso (Chile), SE-Pacific, BMBF-03G0213A.

F.S. "Polarstern" Expedition PS 84, 27.11.09. -27.01.17. Punta Arena – Wellington, South Pacific

F.S. "Sonne" Expedition SO-201/2 (KALMAR), 31.08.-08.10.2009, Kamtschatka, NW-Pazifik, BMBF-03G0672B.

**Academic advisor:**

Supervision of more than 15 PhD thesis on the above subjects.

**Most relevant publications (selection)**

Ronge TA, Tiedemann R, Lamy F, Köhler P, Alloway BV, De Pol-Holz R, Pahnke K, Southon J, Wacker L. (2016). Radiocarbon constraints on the extent and evolution of the South Pacific glacial carbon pool. Nature Communications 7, doi: 10.1038/ncomms11487.

Abelmann A, Gersonde R, Knorr G, Zhang X, Chaplignin B, Maier E, Esper O, Friedrichsen H, Lohmann G, Meyer H, Tiedemann R (2015). The seasonal sea-ice zone in the glacial Southern Ocean as a carbon sink, Nature Communications 6, doi: 10.1038/ncomms9136.

Max L, Lembke-Jene L, Riethdorf JR, Tiedemann R, Nürnberg D, Kühn H, Mackensen A (2014). Pulses of enhanced North Pacific Intermediate Water ventilation from the Okhotsk Sea and Bering Sea during the last deglaciation. Climate of the Past, 10 . pp. 591-605. DOI 10.5194/cp-10-591-2014.

Meckler AN, Sigman DM, Gibson KA, François R, Martinez-Garcia A, Jaccard SL, Röhl U, Peterson LC, Tiedemann R, Haug GH (2013). Deglacial pulses of deep-ocean silicate into the subtropical North Atlantic Ocean. Nature 495 (7442), 495-498.

Haug GH, Ganopolski A, Sigman DM, Rosell-Mele A, Swann GEA, Tiedemann R, Jaccard SL, Bollmann J, Maslin MA, Leng MJ, Eglinton G (2005) The seasonal cycle in North Pacific sea surface temperature and the glaciation of North America 2.7 million years ago. Nature 433: 821-825.

Nürnberg D, Tiedemann R (2004) Environmental change in the Sea of Okhotsk over the past 1.1 million years - atmospheric teleconnections to China. Paleoceanography 19: PA4011, doi:10.1029/2004PA001023.

Haug GH, Sigman DM, Tiedemann R, Pedersen TF, Sarnthein S (1999) Onset of permanent stratification in the subarctic Pacific Ocean. Nature 401: 779-782.

Haug GH, Tiedemann R (1998) Effect of the formation of the Isthmus of Panama on Atlantic Ocean thermohaline circulation. Nature 393: 673-676.

Clemens SC, Tiedemann R (1997) Eccentricity forcing of Pliocene-Early Pleistocene climate revealed in a marine oxygen isotope record. Nature 385: 801-804.

Tiedemann R, Sarnthein M, Shackleton NJ (1994) Astronomic timescale for the Pliocene Atlantic  $\delta^{18}\text{O}$  and dust flux records of ODP Site 659. Paleoceanography 9: 619-638.