

GERRIT LOHMANN



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Refereed publications:

1995-1997:

1. Chen, D., Gerdes, R., Lohmann, G., 1995: A 1-D Atmospheric energy balance model developed for ocean modelling. *Theor. Appl. Climatol.* 51, 25-38. [Abstract](#)
2. Lohmann, G., Gerdes, R., and Chen, D., 1996 a: Sensitivity of the thermohaline circulation in coupled oceanic GCM-atmospheric EBM experiments. *Climate Dynamics* 12, 403-416. [Abstract](#)
3. Lohmann, G., Gerdes, R., and Chen, D., 1996 b: Stability of the thermohaline circulation in a simple coupled model. *Tellus* 48 A, 465-476. [Abstract](#)
4. Prange, M., Lohmann, G., and Gerdes, R., 1997: Sensitivity of the thermohaline circulation for different climates - Investigations with a simple atmosphere-ocean model. *Palaeoclimates* 2, 71-99. [Abstract](#)

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5. Lohmann, G., and Gerdes, R., 1998: Sea ice effects on the Sensitivity of the Thermohaline Circulation in simplified atmosphere-ocean-sea ice models. *J. Climate* 11, 2789-2803. [Abstract](#)
6. Lohmann, G., 1998: The Influence of a near-bottom Transport Parameterization on the Sensitivity of the Thermohaline Circulation. *J. Phys. Oceanogr.* 28, 2095-2103. [Abstract](#)
7. Lohmann, G., and Schneider, J., 1999: Dynamics and predictability of Stommel's box model: A phase space perspective with implications for decadal climate variability. *Tellus* 51 A, 326-336. [Abstract](#)
8. Rudels B., Friedrich H.J., Hainbucher D., Lohmann G., 1999: On the parameterisation of oceanic sensible heat loss to the atmosphere and to ice in an ice-covered mixed layer in winter. *Deep-Sea Research II*, 46, 1385-1425. [Abstract](#)
9. Brüning, R., and Lohmann, G., 1999: Charles S. Peirce on creative metaphor: A case study of the conveyor belt metaphor in Oceanography. *Foundations of Science* 4 (4), 389-403. Special Issue for Scientific Discovery and Creativity. [Abstract](#)

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10. Lohmann, G., and Lorenz, S., 2000: On the hydrological cycle under paleoclimatic conditions as derived from AGCM simulations. *Journal of Geophysical Research*, 105, no. D13, 17,417-436. [Abstract](#)
11. Timmermann, A., and Lohmann, G., 2000: Noise-Induced Transitions in a simplified model of the thermohaline circulation, *J. Phys. Oceanogr.* 30 (8), 1891-1900. [Abstract](#)
12. Lohmann, G., and Schulz, M., 2000: Reconciling Bølling warmth with peak deglacial meltwater discharge. *Paleoceanography*, 15 (5), 537-540. [Abstract](#)
13. Rimbu, N., Lohmann, G., Felis, T., and Pätzold, J., 2001: Arctic Oscillation signature in a Red Sea coral. *Geophysical Research Letters*, 28 (15), 2959-2962. [Abstract](#)
14. Stute, M., Clement, A., Lohmann, G., 2001: [Global climate models: Past, present, and future.](#) *Proc. Natl. Acad. Sci. USA*, Vol. 98, Issue 19, 10529-10530. [\(pdf text file\)](#), --> [\(pdf file\)](#), [\(Abstract of the talk\)](#)

2002:

15. Claussen, M., Mysak, L.A., Weaver, A.J., Crucifix, M., Fichefet, T., Loutre, M.-F., Weber, S.L., Alcamo, J., Alexeev, V.A., Berger, A., Calov, R., Ganopolski, A., Goosse, H., Lohmann, G., Lunkeit, F., Mokhov, I.I., Petoukhov, V., Stone, P., and Wang, Z., 2002: Earth System Models of Intermediate Complexity: Closing the Gap in the Spectrum of Climate System Models. *Climate Dynamics* 18, 579-586. [abstract](#)
16. Monahan, A.H., Timmermann, A., and Lohmann, G., 2002: Comments on 'Noise-Induced Transitions in a simplified model of the thermohaline circulation', *J. Phys. Oceanogr.* 32 (3), 1112-1116. [ps-file](#)
17. Kiefer, T., Lorenz, S., Schulz, M., Lohmann, G., Sarnthein, M., and Elderfield, H., 2002: Response of precipitation over Greenland and the adjacent ocean to North Pacific warm spells during Dansgaard-Oeschger stadials. *Terra Nova*, Vol. 14, 4, 295-300. [abstract](#)
18. Prange, M., V. Romanova, and G. Lohmann, 2002: The glacial thermohaline circulation: stable or unstable? *Geophysical Research Letters* Vol. 29, No. 21, 2028, doi:10.1029/2002GL015337. [Abstract](#)
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20. Rodgers, K., Lohmann, G., Lorenz, S., Schneider, R., and Henderson, G., 2003: A Tropical Mechanism for Northern Hemisphere Deglaciation. *Geochem., Geophys., Geosyst.*, 4(5), 1046, doi: 10.1029/2003GC0000508. [Abstract](#)
21. Prange, M., and G. Lohmann, 2003: Effects of mid-Holocene river runoff on the Arctic ocean-sea ice system: a numerical study. *The Holocene* 13 (3), 335-342. [pdf file](#)
22. Rimbu, N., Lohmann, G., Kim, J.-H., Arz, H. W., and Schneider, R., 2003: Arctic/North Atlantic Oscillation signature in Holocene sea surface temperature trends as obtained from alkenone data. *Geophysical Research Letters* Vol. 30, No. 6, 1280, doi:10.1029/2002GL016570. [pdf-file](#)
23. Rimbu, N., Lohmann, G., Felis, T., and Pätzold, J., 2003: Shift in ENSO teleconnections recorded by a Red Sea coral. *J. Climate*, Vol. 16, No. 9, 1414-1422. [Abstract](#)
24. Lohmann, G., 2003: Phase space invariances yield exactly soluble evolution equations. [Balkan Physics Letters](#), 11 (2), 77-81. [Abstract](#)
25. Knorr, G., and G. Lohmann, 2003: Southern Ocean Origin for Resumption of Atlantic Thermohaline Circulation during Deglaciation. *Nature*, 424, 532-536. [Abstract and Information](#)
26. Prange, M., Lohmann, G., and A. Paul, 2003: Influence of vertical mixing on the thermohaline hysteresis: Analyses of an OGCM. *J. Phys. Oceanogr.*, 33 (8), 1707-1721. [\(JPO link 1\)](#). [\(JPO link 2\)](#). --> [Abstract pdf file](#)
27. Lohmann, G., 2003: Atmospheric and oceanic freshwater transport during weak Atlantic overturning circulation. *Tellus* 55A, 400-410. [Abstract](#)

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29. Prange, M., and G. Lohmann, 2004: Variable freshwater input to the Arctic Ocean during the Holocene: Implications for large-scale ocean-sea ice dynamics as simulated by a circulation model. pp. 319-338. *In: The climate in historical times: Toward a synthesis of Holocene proxy data and climate models*, Springer-Verlag, Berlin Heidelberg New York. *Fischer, H.; Kumke, T.; Lohmann, G.; Flöser, G.; Miller, H.; Storch, H.v.; Negendank, J.F.W. (Eds.)* [Abstract](#)
30. Rimbu, N., Lohmann, G., Felis, T., and Pätzold, J., 2004: Detection of climate modes as recorded in a seasonal-resolution coral record covering the last 250 years. pp. 281-292. *In: The climate in historical times: Toward a synthesis of Holocene proxy data and climate models*, Springer-Verlag, Berlin Heidelberg New York. *Fischer, H.; Kumke, T.; Lohmann, G.; Flöser, G.; Miller, H.; Storch, H.v.; Negendank, J.F.W. (Eds.)*
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34. Dima, M., and Lohmann, G., 2004: Fundamental and derived modes of climate variability. Application to biennial and interannual timescale. *Tellus* 56A, 229-249. [Abstract link](#)
35. Felis, T., G. Lohmann, H. Kuhnert, S. Lorenz, D. Scholz, J. Pätzold, S. A. Al-Rousan, S. M. Al-Moghrabi, 2004: Increased seasonality in Middle East temperatures during the last interglacial period. *Nature* 429, 164-168. [link](#) [Nature-link](#) [Nature-highlight](#)
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40. Rimbu, N., Dima, M., Lohmann, G., and Stefan, S., 2004: Climate teleconnections recorded in Danube river

flow. *Geophysical Research Letters*, Vol. 31, No. 23, L232U3, doi:10.1029/2004GL020559 [Abstract](#) [AGU link](#)

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53. Sirocko, F., M. Claussen, T. Litt, M. F. Sanchez-Goni, A. Berger, T. Boettger, M. Diehl, S. Desprat, B. Delmonte, D. Deaerina, M. Frechen, M. A. Gevh, M. Groeuer, M. Kadevama, F. Kaspar, N. Köhl, C. Kubatzki.

- G. Lohmann, M.-F. Loutre, U. Müller, B. Rein, W. Rosendahl, K. Roucoux, D.-D. Rousseau, K. Seelos, M. Siddall, D. Scholz, C. Spötl, B. Urban, M. Vautravers, A. Velichko, S. Wenzel, M. Widmann and B. Wünnemann, 2007: Chronology and climate forcing of the last four interglacials, in *Book on 'The climate of past interglacials'*, Series: Developments in Quaternary Science 7. F. Sirocko, M. Claussen, M. F. Sanchez-Goni, T. Litt (Eds.). Elsevier Series 'Development in Paleoenvironmental Research', 597-614.
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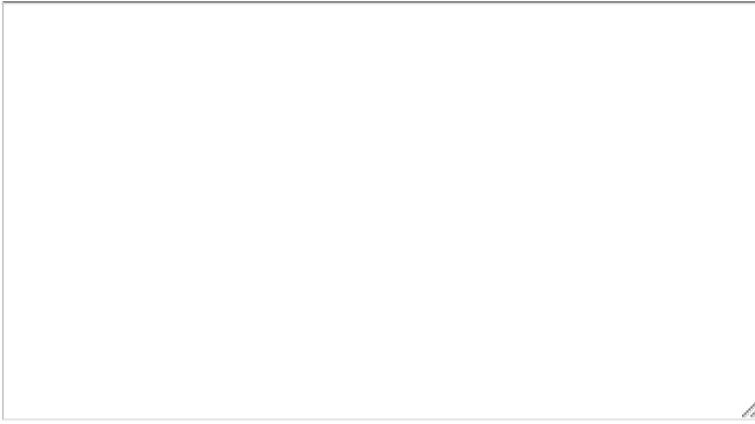
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KIHZ Book



The climate in historical times: Towards a synthesis of Holocene proxy data and climate models, 2004, Springer-Verlag, Berlin Heidelberg New York.

Fischer, H.; Kumke, T.; Lohmann, G.; Flöser, G.; Miller, H.; Storch, H.v.; Negendank, J.F.W. (Eds.) ISSN 1437-028; ISBN 3-540-20601-9. Book with 512 Pages, 166 Figures, and 11 Tables. [springeronline-link](#) [buchspektrum-link](#)

The project "Climate in Historical Times" (KIHZ) represents an integrative approach by geoscientists and climate modellers to analyse the dynamics of natural climate variability during the Holocene. This volume summarises the outcome of a KIHZ summer school.

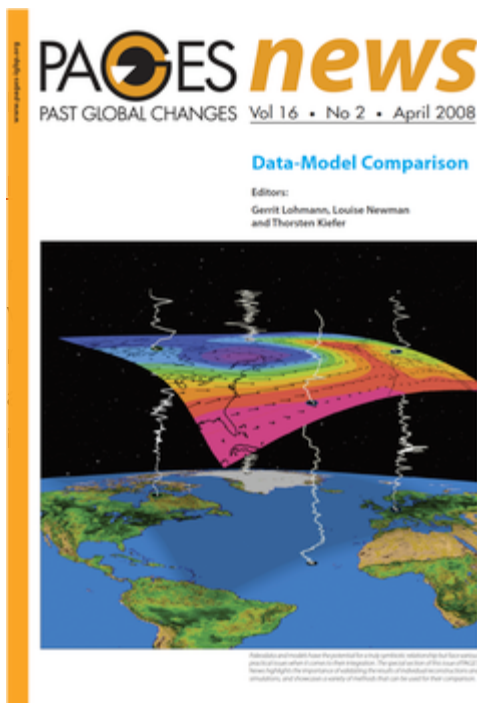
The meeting dealt with a variety of topics related to natural climate variability, ranging from reconstructions of past climate using so-called "proxy data" derived from ice cores, lake sediments, tree rings and corals. These data are used to validate and assimilate climate models.

The first part of this volume provides an overview of the climate system and its dynamics. It uses climate models of differing complexity and the resources of different archives in order to reconstruct past climate. The second part describes the latest achievements of the KIHZ members in their endeavours to reconstruct past climate by using proxy data, statistical analyses and climate models.

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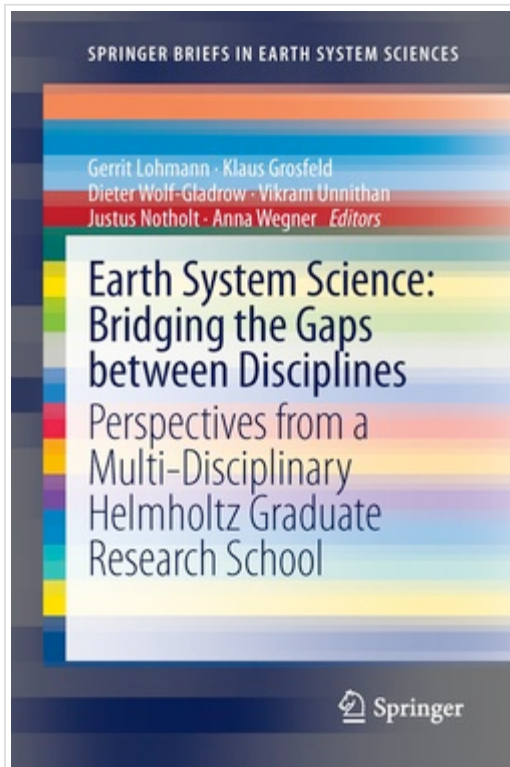
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al for a truly symbiotic relationship. One application of paleoclimate data is to models for past time slices and specific climate transitions. Analyzing proxy-models in tandem allows for the evaluation of climate transitions through the risks in past and future climate changes. In return, model simulations can aid served variations in paleoclimate data. Climate simulations enable a separation of the externally forced climate signal from internal variability (to the extent that the signal is distinguishable from the noise), something that cannot be achieved using proxy data alone. To become effective, these mechanisms require that data and model simulations can be compared in a meaningful way.

This special section of PAGES News highlights the importance of validating the results of individual reconstructions and simulations, and showcases a

variety of methods that can be used for their comparison.

ESSReS Book



Lohmann, G., K. Grosfeld, D. Wolf-Gladrow, V. Unnikrishnan, J. Notholt, and A. Wegner, 2013: "Earth System Science: Bridging the Gaps between Disciplines. Perspectives from a Multi-disciplinary Helmholtz Research School". Series: SpringerBriefs in Earth System Sciences, 2013, 138 p. 61 illus., 52 in color. ISBN: 978-3-642-32234-1 (Print) 978-3-642-32235-8 (Online) Springer, Heidelberg. doi: 10.1007/978-3-642-32235-8; Due: November 30, 2012 [link](#) [link2](#)

- ▶ Shows the spectrum of Earth system science: Remote sensing, data exploration, process understanding, modelling, informatics
- ▶ Gives examples of how to link the different disciplines as a key concept of future PhD education in Earth system science
- ▶ Linking 'data and modeling' enables graduate students from a variety of disciplines to cooperate and exchange views on the common theme of global environmental change

Earth system science is traditionally split into various disciplines (Geology, Physics, Meteorology, Oceanography, Biology etc.) and several sub-disciplines. Overall, the diversity of expertise provides a solid base for interdisciplinary research. However, gaining holistic insights into the Earth system requires the integration of observations, paleoclimate data, analysis tools and modeling. These different approaches of Earth system science are rooted in various disciplines that cut across a broad range of timescales. It is, therefore, necessary to link these disciplines at a relatively early stage in PhD programs. The linking of 'data and modeling', as it is the special emphasis in our graduate school, enables graduate students from a variety of disciplines to cooperate and exchange views on the common theme of Earth system science, which leads to a better understanding of processes within a global context.

Contributions in the [Springer Book about Earth System Science](#):

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Paleoclimate modeling and analysis

