

Malte F. Jansen

Department of the Geophysical Sciences
The University of Chicago
5734 S. Ellis Ave.
Chicago, IL 60637, USA

Phone: 617-230-0262
Email: mfj@uchicago.edu

Education	Massachusetts Institute of Technology (MIT)	Cambridge, MA, USA
	PhD in Climate Physics and Chemistry	October 2012
	Thesis title: “Equilibration of an Atmosphere by Geostrophic Turbulence” Advisor: Raffaele Ferrari	(awarded: Feb 2013)
	IFM-GEOMAR / University Kiel	Kiel, Germany
	Diplom (\approx M.Sc.) with distinction in Meteorology	June 2007
	Minors: Physical Oceanography, Theoretical Physics	
	Thesis title: “Simple Conceptual models for Tropical Ocean-Atmosphere Interactions on Interannual Timescales”. Advisor: Dietmar Dommenges	
	University of Heidelberg	Heidelberg, Germany
	Vordiplom (\approx B.S.) in Physics	October 2003
Employment	Department of the Geophysical Sciences, The University of Chicago	Chicago, IL
	Assistant Professor	Jan 2015 - present
	Geophysical Fluid Dynamics Laboratory / Princeton University	Princeton, NJ, USA
	NOAA Climate and Global Change Postdoctoral Fellow	Jul 2013 – Dec 2014
	AOS Postdoctoral Research Associate	Apr 2013 – Jun 2013
	Department of Earth Atmospheric and Planetary Sciences, MIT	Cambridge, MA, USA
	Postdoctoral Associate	Nov 2012 – Mar 2013
Selected Awards and Fellowships	NOAA Climate and Global Change Postdoctoral Fellow	2013 - 2014
	Carl-Gustaf Rossby Award for the best PhD thesis completed in the preceding year in the Program in Atmospheres, Oceans and Climate, MIT	May 2013
	GFD Fellow at Woods Hole Oceanographic Institution	Summer 2008
	Shrock Fellowship in MIT’s Department of Earth, Atmospheric, and Planetary Sciences	2007-2008
	Fellow of the German National Academic Foundation	2004-2007
Teaching	Introduction to Research in the Geophysical Sciences, University of Chicago	Fall 2017
	Turbulence and Transport Processes in the Atmosphere and Oceans, University of Chicago	Fall 2016
	Large-Scale Ocean Circulation, University of Chicago	Winter 2016 / Spring 2017

Advising	<p>PhD students advised: Hailu Kong, University of Chicago 2015- present</p> <p>PhD student committee member: Junyi Chai, Princeton University (Reader, 2016), Daniel Koll (2015-2016), Lei Wang (2015-2016), Clare Huang (2015-2017), Jonah Bloch-Johnson (2015-present), David Plotkin (2015-present), Pragallva Barpanda (2016-present), Jade Checlair (2016-present), University of Chicago</p> <p>Undergraduate students advised: Francisco Spaulding, University of Chicago 2016-2017</p> <p>Summer students advised: Ashley Payne, Woods Hole GFD program Summer 2014 Lei Wang (co-advised with Ryan Abernathy), Woods Hole Oceanogr. Inst. Summer 2014</p> <p>Postdoctoral scholars advised: Alice Marzocchi, University of Chicago 2016-present Sina Khani, University of Chicago (co-advised with Alistair Adcroft at Princeton) 2016-present Morgan O'Neil, University of Chicago (co-advised with Tiffany Shaw) 2017-present</p>
Service / Leadership	<p>Member of the AMS' committee on Atmospheric and Oceanic Fluid Dynamics, 2017-present</p> <p>National Science Foundation physical oceanography review panelist</p> <p>Reviewer for <i>Climate Dynamics</i>, <i>Geophysical Research Letters</i>, <i>J. Climate</i>, <i>J. Fluid Mechanics</i>, <i>J. Geophys. Res.</i>, <i>J. Phys. Oceanogr.</i>, <i>the National Science Foundation</i>, <i>Nature Communications</i>, <i>Nature Geoscience</i>, <i>Ocean Modelling</i>, <i>Physics of Fluids</i> and <i>Science</i>.</p>
Publications	<p>Hoffman P.F., D. S. Abbot, Y. Ashkenazy, D. I. Benn, J. J. Brocks, P. A. Cohen, G. M. Cox, J. R. Creveling, Y. Donnadieu, D. H. Erwin, I. J. Fairchild, D. Ferreira, J. C. Goodman, G. P. Halverson, M. F. Jansen, G. Le Hir, G. D. Love, F. A. Macdonald, A. C. Maloof, C. A. Partin, G. Ramstein, B. E. J. Rose, C. V. Rose, Peter M. Sadler, E. Tziperman, A. Voigt and S. G. Warren, 2017: Snowball Earth climate dynamics and Cryogenian geology–geobiology. Accepted for publication in <i>J. Science Advances</i>,</p> <p>Kong, H. and M.F. Jansen, 2017: The Eddy Diffusivity in Barotropic β-Plane Turbulence. <i>Fluids</i>, special issue on <i>Geophysical Fluid Dynamics</i> 2,54</p> <p>Marzocchi, A. and Jansen, M.F., 2017. Connecting Antarctic sea ice to deep-ocean circulation in modern and glacial climate simulations. <i>Geophys. Res. Lett.</i>, 44(12), 6286-6295.</p> <p>Yang J., M. F. Jansen, F. A. Macdonald, and D. S. Abbot, 2017: Persistence of a freshwater surface ocean after a snowball Earth, <i>Geology</i> 45 (7), 615-618.</p> <p>Jansen, M.F., 2017. A note on: "A Gaussian-product stochastic Gent–McWilliams parameterization". <i>Ocean Modelling</i>, 110, 49-51.</p> <p>Jansen, M.F., 2017. Glacial ocean circulation and stratification explained by reduced atmospheric temperature. <i>Proc. Natl. Acad. Sci.</i>, 114(1), 45-50.</p> <p>Jansen, M.F. and L-P. Nadeau, 2016: The Effect of Southern Ocean Surface Buoyancy Loss on the Deep-Ocean Circulation and Stratification. <i>J. Phys. Oceanogr.</i>, 46, 3455–3470.</p>

- Chai, J., M. Jansen, and G. Vallis, 2016: Equilibration of a Baroclinic Planetary Atmosphere toward the Limit of Vanishing Bottom Friction. *J. Atmos. Sci.*, 73, 3249–3272.
- Jansen, M. F., 2016: The Turbulent Circulation of a Snowball Earth Ocean. *J. Phys. Oceanogr.*, 46(6), 1917-1933.
- Wang, L., M. Jansen, and R. Abernathey, 2016: Eddy Phase Speeds in a Two-Layer Model of Quasigeostrophic Baroclinic Turbulence with Applications to Ocean Observations. *J. Phys. Oceanogr.*, 46, 1963–1985.
- Cronin, T. W. and M. F. Jansen, 2016: Analytic radiative-advective equilibrium as a model for high-latitude climate. *Geophys. Res. Lett.*, 43, 449–457
- Payne, A. E., M. F. Jansen, and T. W. Cronin, 2015: Conceptual model analysis of the influence of temperature feedbacks on polar amplification, *Geophys. Res. Lett.*, 42, 9561–9570
- Jansen, M.F., I.M. Held, A.J. Adcroft, and R. Hallberg, 2015: Energy budget-based backscatter in an eddy permitting primitive equation model. *Ocean Modelling*, 94, 15-26.
- Zurita-Gotor, P., I.M Held, and M. F. Jansen, 2015: Kinetic energy-conserving hyperdiffusion can improve low resolution atmospheric models. *Journal of Advances in Modeling Earth Systems*, doi: 10.1002/2015MS000480
- Jansen, M.F., A.J. Adcroft, R. Hallberg, and I.M. Held, 2015: Parameterization of eddy fluxes based on a mesoscale energy budget. *Ocean Modelling*, 92, 28-41
- Burke, A., Stewart, A.L., Adkins, J.F., Ferrari, R., Jansen, M.F. and Thompson, A.F., 2015. The glacial mid-depth radiocarbon bulge and its implications for the overturning circulation. *Paleoceanography*, 30(7), pp.1021-1039.
- Jansen, M. and Ferrari, R., 2015. Diagnosing the vertical structure of the eddy diffusivity in real and idealized atmospheres. *Quarterly Journal of the Royal Meteorological Society*, 141(687), pp.631-641.
- Jansen, M.F. and I.M. Held, 2014: Parameterizing subgrid-scale eddy effects using energetically consistent backscatter. *Ocean Modeling*, 80, 36-48
- Ferrari, R., M. Jansen, J. Adkins, A. Burke, A.L. Stewart, and A. Thompson, 2014: Antarctic sea ice control on ocean circulation in present and glacial climates. *Proc. Natl. Acad. Sci.*, 111 (24) 8753-8758.
- Jansen, M. and R. Ferrari, 2013: Equilibration of an atmosphere by adiabatic eddy fluxes. *J. Atmos. Sci.*, 70, 2948–2962
- Jansen, M. and R. Ferrari, 2013: The vertical structure of the eddy diffusivity and the equilibration of the extra-tropical atmosphere. *J. Atmos. Sci.*, 70, 1456–1469
- Jansen, M. and R. Ferrari, 2012: Macroturbulent equilibration in a thermally forced primitive equation system. *J. Atmos. Sci.*, 69, 695-713
- Jansen, M. F., R. Ferrari and T.A., Mooring, 2010: Seasonal versus permanent thermocline warming by tropical cyclones. *Geophys. Res. Lett.*, 37, L03602
- Dommenget, D., and M. Jansen, 2009: Predictions of Indian Ocean SST indices with a simple statistical model: a null hypothesis. *J. Climate*, 22, 4930–4938
- Jansen, M., and R. Ferrari, 2009: Impact of the latitudinal distribution of tropical cyclones on ocean heat transport, *Geophys. Res. Lett.*, 36, L06604, doi:10.1029/2008GL036796
- Jansen, M.F., D. Dommenget, and N. Keenlyside, 2009: Tropical atmosphere–ocean interactions in a conceptual framework. *J. Climate*, 22, 550–567

Selected Talks	Northwestern Climate Change Symposium (Invited) “The ocean’s role in the climate system”	11/2017
	Geophysical Fluid Dynamics Program, Woods Hole “A mechanism for deep ocean circulation changes between warm and glacial climates”	07/2017
	AMS’s 21 th Conference on Atmospheric and Oceanic Fluid Dynamics “Deciphering Deep Ocean Circulation Changes Between the Present and the Last Glacial Maximum”	06/2017
	Workshop on Energy Transfer in Atmosphere and Ocean, Hamburg, Germany (Invited) “Parameterizing subgrid-scale eddy effects using energetically consistent backscatter”	05/2017
	2017 Southern Ocean Workshop, Boulder, CO “Deciphering deep ocean circulation changes between the present and the last glacial maximum”	04/2017
	University of Wisconsin, Atmospheric and Oceanic Sciences Colloquium “Deciphering deep ocean circulation changes between the present and the last glacial maximum”	03/2017
	AGU Fall meeting 2016 (Invited) “Stochastic and deterministic sub-grid-scale ocean eddy parameterizations”	12/2016
	MIT Sack Lunch Seminar “Deciphering deep ocean circulation changes between the present and the last glacial”	11/2016
	University of Exeter, Geophysical & Astrophysical Fluid Dynamics seminar “Deciphering deep ocean circulation changes between the present and the last glacial”	09/2016
	GEOMAR, Kiel, Germany, Fb1 Seminar “Deciphering deep ocean circulation changes between the present and the last glacial”	09/2016
	2016 DRAKKAR workshop, Grenoble, France (Invited) “Parameterizing subgrid-scale eddy effects using energetically consistent backscatter”	01/2016
	Northwestern University EPS seminar “The turbulent circulation of a Snowball Earth Ocean”	11/2015
	AMS’s 20 th Conference on Atmospheric and Oceanic Fluid Dynamics “An energetically consistent backscatter parameterization for eddy permitting ocean models”	06/2015
	Theoretical Advances in Planetary Flows and Climate Dynamics, Les Houches, France “Parameterizing subgrid-scale eddy effects using energetically consistent backscatter”	03/2015
	Woods Hole Oceanographic Institution, Physical Oceanography Seminar “Parameterizing subgrid-scale eddy effects using energetically consistent backscatter”	07/2014
	2014 Ocean Sciences Meeting, Honolulu, Hawaii “Energetically consistent sub-grid eddy parameterizations for eddy-permitting ocean models”	02/2014
	California Institute of Technology, ESE Seminar “Energetically consistent sub-grid eddy parameterizations for eddy-permitting ocean models”	11/2013
	AMS’s 19 th Conference on Atmospheric and Oceanic Fluid Dynamics “Supercriticality and the turbulent energy cascade in primitive equations”	06/2013
	University of Washington, Atmospheric and Climate Dynamics Seminar “Equilibration of an atmosphere by geostrophic turbulence”	11/2012
	Columbia University, SEAS Colloquium in Climate Science “The equilibration of the extra-tropical atmosphere”	02/2012
	Courant Institute at NYU, CAOS Colloquium “The zonal momentum budget and the adjustment of the extra-tropical atmosphere”	11/2011
	AGU Fall Meeting 2010 (Invited) “On the role of tropical cyclones in ocean heat transport”	12/2010