

# Peter Huybers

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## EDUCATION

Massachusetts Institute of Technology, Climate Physics and Chemistry, Ph.D. (2004).

United States Military Academy at West Point, Physics, B.S. (1996).

## APPOINTMENTS

*Professor*, Department of Earth and Planetary Sciences, Harvard University (2011-).

*Assistant Professor*, Department of Earth and Planetary Sciences, Harvard University (2007-2010).

*Harvard University Environmental Fellow*, Department of Earth and Planetary Sciences, Harvard University (2006-2007).

*NOAA Postdoctoral Fellow in Climate and Global Change*, Geology and Geophysics Department, Woods Hole Oceanographic Institution (2004-2006).

*Research Assistant*, Department of Earth, Atmospheric, and Planetary Sciences, Massachusetts Institute of Technology (1999-2004).

*US Army Officer*: tank platoon leader, Germany and Bosnia (1996-1998); National Guard, New Orleans, LA (1998-1999); National Guard, Cambridge, MA (1999-2003); US Army Reserves (2004-2006).

## AWARDS AND HONORS

Jefferson Science Fellow (2012), MacArthur Fellow (2009), Packard Fellow for Science and Engineering (2009), AGU James B. Macelwane Medal (2009), Harvard University Center for the Environment Fellow (2006), NOAA Postdoctoral Fellow in Climate and Global Change (2004), MIT Carl-Gustaf Rossby Prize (2004); National Defense Science and Engineering Graduate Fellow (2001).

## UNIVERSITY SERVICE

*Committees*: Science of the Human Past Steering committee (2011-); Environmental Science and Public Policy committee (2009-); Harvard University Center for the Environment (2005-); Harvard Oceanography Committee (2007-).

*Graduate courses*: Tides and Milankovitch forcing of the Climate System (2010, co-taught with C. Wunsch); Great Papers in Earth Science (2009; 2011; 2014).

*Undergraduate courses*: The Fluid Earth (2012; 2014); Climate Change Debates (2010; 2012); History of the Earth (2008-2011); Freshman Seminar on Climate Change (2008).

*PhD adviser*: Marena Lin, Karen McKinnon, Ethan Butler, Cristian Proistosescu, Andrew Rhines, Eddie Haam (PhD 2011), and Martin Tingley (PhD 2009).

*Undergraduate research adviser*: Jane Baldwin, Alexandra Giesse, Marena Lin, Karen McKinnon, and James Winter.

*Postgraduate sponsor*: Nathan Mueller (HUCE fellow, 2013-2015); Alexander Stine (HUCE fellow, 2010-2012), Thomas Laepple (Feodor Lynen Fellow, 2011), and Geoffrey Gebbie (2008-2010).

## **OTHER PROFESSIONAL SERVICE**

*Government Service:* Senior science advisor in the White House's Office of Science and Technology Policy (2013), Jefferson Science Fellow in the U.S. State Department (2012).

*Affiliations:* Member of the National Research Council committee for review of the US Antarctic Program (2011); Member of the Board of Sponsors for the Federation of American Scientists (2011-); Fellow of the American Geophysical Union (2009-).

## **PEER-REVIEWED PUBLICATIONS**

- M. Tingley and P. Huybers, Recent high northern latitude temperature extremes unprecedented in past 600 years, *Nature*, v496, p201205, 2013.
- A. Rhines and P. Huybers, Frequent summer temperature extremes reflect changes in the mean, not the variance, *Proceeding of the National Academies of Science*, (comment), v110, e547-548, 2013.
- T. Laepple and P. Huybers, Reconciling discrepancies between Uk37 and Mg/Ca reconstructions of Holocene marine temperature variability, *Earth and Planetary Science Letters*, v375, p418429, 2013.
- K. McKinnon, A. Stine, and P. Huybers, The Spatial Structure of the Annual Cycle in Surface Temperature: Amplitude, Phase, and Lagrangian History, *Journal of Climate*, v26, p78527862, 2013.
- N. Kachouie, P. Huybers and A. Schwartzman, Localization of Mountain Glacier Termini in Landsat Multi-Spectral Images, *Pattern Recognition Letters*, v34(1), p94-106, 2013.
- S. Kutterolf, M. Jegen, J. X. Mitrovica, T. Kwasnitschka, A. Freundt, and P. Huybers, A detection of Milankovitch frequencies in global volcanic activity, *Geology*, doi: 10.1130/G33419.1, 2013.
- E. Butler and P. Huybers, Adaptation of US Maize to Temperature Variations, *Nature Climate Change*, v3, p6872, 2013; and 'Reply: US maize adaptability' *Nature Climate Change* v3, p691-692, 2013.
- E. Morrow, J. Mitrovica, A. Forte, P. Glisovic, P. Huybers, An enigma in estimates of the Earth's dynamic ellipticity, *Geophysical Journal International*, v191, p1129-1134, 2013.
- A. Stine and P. Huybers, Changes in the seasonal cycle of temperature and atmospheric circulation, *Journal of Climate*, v25, p73627380, 2012.
- E. Rohling and 34 co-authors, Making sense of palaeoclimate sensitivity. *Nature*, v491, p683-691, 2012.
- M. Lin and P. Huybers, Reckoning wheat yield trends, *Environmental Research Letters*, v7, p1-6, 2012.
- M. McCormick and 11 co-authors, Climate Change during and after the Roman Empire: Reconstructing the Past from Scientific and Historical Evidence, *The Journal of Interdisciplinary History*, v43, p169-220, 2012.
- G. Gebbie and P. Huybers, The mean age of ocean waters inferred from radiocarbon observations: upper and lower bounds, sensitivity to surface sources, and accounting for mixing histories *Journal of Physical Oceanography*, v42, p291-305, 2012.
- C. Proistosescu, P. Huybers and A. Maloof, To Tune or not to Tune: Detecting Orbital Variability in Oligo-Miocene Climate Records, *Earth and Planetary Science Letters*, v325, p100-107, 2012.
- N. Gomez, D. Pollard, J. Mitrovica, P. Huybers, and P. Clark, Evolution of a coupled marine ice sheet—sea level model, *Journal of Geophysical Research*, v117, p1-9, 2012.
- P. Huybers, Combined obliquity and precession pacing of the late Pleistocene glacial cycles, *Nature*, v480, p229-232, 2011.
- A. Rhines and P. Huybers, Estimation of spectral power laws in time-uncertain series of data with application to the GISP2  $\delta^{18}\text{O}$  record, *Journal of Geophysical Research*, v116, D01103, p1-9, 2011.
- G. Gebbie and P. Huybers, How is the Ocean Filled?, *Geophysical Research Letters*, v38, L06604, p1-5, 2011.

- P. Huybers and O. Aharonson, Orbital tuning, eccentricity, and the frequency modulation of climatic precession, *Paleoceanography*, v25, PA4228, p1-9, 2010.
- N. Gomez, J. X. Mitrovica, P. Huybers, and P. U. Clark, Sea level as a stabilizing factor for marine ice-sheet grounding lines, *Nature Geoscience*, v3, p850853, 2010.
- P. Huybers, Compensation between Model Feedbacks and Curtailment of Climate Sensitivity, *Journal of Climate*, v23, p3009-3018, 2010.
- M. Tingley and P. Huybers, A Bayesian algorithm for reconstructing spatially arrayed temperatures. Part 1: Development and applications to paleoclimate reconstruction problems, *Journal of Climate*, v23, p2759-2781, 2010.
- M. Tingley and P. Huybers, A Bayesian algorithm for reconstructing spatially arrayed temperatures. Part 2: Behavior and comparison with the regularized expectation-maximization algorithm, *Journal of Climate*, v23, p2782-2800, 2010.
- E. Haam and P. Huybers, A test for the presence of covariance between time-uncertain series of data with application to the Dongge Cave speleothem and atmospheric radiocarbon records, *Paleoceanography*, v25, PA2209, 2010.
- G. Gebbie and P. Huybers, Total matrix intercomparison: a method for determining the geometry of water-mass pathways, *Journal of Physical Oceanography*, v40, p1710-1728, 2010.
- P. Huybers and C. Wunsch, Paleo-physical oceanography with an emphasis on the Last Glacial Maximum, *Annual Review of Marine Science*, v3, p1-34, 2010.
- M. Siddall, B. Hönisch, C. Waelbroeck and P. Huybers, Changes in deep Pacific temperature during the mid-Pleistocene transition and Quaternary, *Quaternary Science Reviews*, v29(1-2), p170-181, 2010.
- P. Huybers and C. Langmuir, Feedback between deglaciation and volcanic emissions of CO<sub>2</sub>, *Earth and Planetary Science Letters*, v286(3-4), p479-491, 2009.
- A. Stine, P. Huybers and I. Fung, Changes in the phase of the annual cycle of surface temperature, *Nature*, v457, p435-440, 2009.
- T. Perron and P. Huybers, Is there an orbital signal in the polar layered deposits on Mars?, *Geology*, v37, p155-158, 2009.
- T. Naish and 55 co-authors, Obliquity-paced Pliocene West Antarctic ice sheet oscillations, *Nature*, v458, p322-328, 2009.
- P. Huybers, Pleistocene glacial variability as a chaotic response to obliquity forcing, *Climate of the Past*, v5, p481-488, 2009.
- P. Huybers, Antarctica's orbital beat, *Science* (perspective), v325, p1085-1086, 2009.
- P. Clark and P. Huybers, Interglacial and Future Sea Level, *Nature* (news and views), v462, p856-857, 2009.
- P. Huybers and E. Tziperman, Integrated summer insolation forcing and 40,000 year glacial cycles: the perspective from an icesheet/energy-balance model, *Paleoceanography*, v23, PA001463, 2008.
- M. Raymo and P. Huybers, Unlocking the mysteries of the ice ages, *Nature*, v451, p284-285, 2008.
- P. Huybers and G. Denton, Antarctic temperature at orbital time scales controlled by local summer duration, *Nature Geoscience*, v1(11), p787-792, 2008.
- P. Huybers, Glacial variability over the last 2Ma: an extended depth-derived agemodel, continuous obliquity pacing, and the Pleistocene progression, *Quaternary Science Reviews*, v26, p37-55, 2007.
- P. Huybers, G. Gebbie, and O. Marchal, Can paleoceanographic tracers constrain meridional circulation rates?, *Journal of Physical Oceanography*, v37, p394-407, 2007.

- P. Huybers and P. Molnar, Tropical cooling and the onset of North American glaciation, *Climate of the Past*, v3, p549-557, 2007.
- P. Huybers and W. Curry, Links between the annual, Milankovitch, and continuum of temperature variability, *Nature*, v441, p329-332, 2006.
- P. Huybers, Pleistocene glacial variability and the integrated insolation forcing, *Science*, v313, p508-511, 2006.
- E. Tziperman, M. Raymo, P. Huybers, and C. Wunsch, Consequences of pacing the Pleistocene 100 kyr ice ages by nonlinear phase locking to Milankovitch forcing, *Paleoceanography*, v21, PA4206, 2006.
- G. Gebbie and P. Huybers, Meridional circulation during the Last Glacial Maximum explored through a combination of South Atlantic  $\delta^{18}\text{O}$  observations and a geostrophic inverse model, *Geochemistry, Geophysics and Geosystems*, v7, Q11N07, 2006.
- P. Huybers and C. Wunsch, Obliquity pacing of the late Pleistocene glacial terminations, *Nature*, v434, p491-494, 2005.
- P. Huybers, Comment on: 'Hockey sticks, principal components, and spurious significance' by McIntyre and McKittrick, *Geophysical Research Letters*, v32, 2005.
- P. Huybers and C. Wunsch, A depth-derived Pleistocene age-model: uncertainty estimates, sedimentation variability, and nonlinear climate change, *Paleoceanography*, v19, 2004.
- P. Huybers, Comment on: Coupling of the hemispheres in observations and simulations of glacial climate change, *Quaternary Science Reviews*, v23, p207-212, 2004.
- P. Huybers and C. Wunsch, Rectification and precession-period signals in the climate system, *Geophysical Research Letters*, v30, 2003.

December, 2013