Patrick Haertel

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EDUCATION

Colorado State University   *Fort Collins, CO*
Doctor of Philosophy, Atmospheric Science, 1998
Master of Science, Atmospheric Science, 1995
GPA: 3.95/4.00

University of Virginia   *Charlottesville, VA*
Studied graduate Mathematics, 1992-1993
GPA: 3.81/4.00

St. Olaf College   *Northfield, MN*
Bachelor of Arts, Mathematics, 1992
GPA: 3.80/4.00

EXPERIENCE

Yale University   *New Haven, CT*
Associate Research Scientist, 2008-
• Simulating tropical convective systems using a Lagrangian model
• Studying meridional overturning in the Atlantic Ocean
• Analyzed tropical waves in global coupled climate models

Colorado State University   *Ft. Collins, CO*
Visiting Research Scientist, 2006-2008
• Analyzed observations of tropical waves
• Developed an idealized model of the North Atlantic Ocean
• Worked with graduate students studying mesoscale meteorology

University of North Dakota   *Grand Forks, ND*
Assistant Professor, 2003-2006
• Taught dynamics, numerical methods, and computer programming
• Researched the dynamics of atmospheric convective systems
• Developed a parallel Lagrangian ocean model

NOAA Aeronomy Laboratory   *Boulder, CO*
Research Scientist, 2002-2003
• Simulated circulations in equatorial waves
• Developed a Lagrangian lake model

Colorado State University   *Fort Collins, CO*
Research Associate, 1999-2002
• Invented a new Lagrangian numerical method
• Simulated thunderstorm outflows
• Developed a technique for removing divergence errors from wind analyses
Research Assistant, 1993-1998
• Simulated squall system surface pressure features
• Analyzed observations of western Pacific tropical disturbances
Teaching Assistant, 1996-1997
• Taught mesoscale meteorology and numerical modeling

University of Virginia   *Charlottesville, VA*
Teaching Assistant, 1992-1993
• Led recitations for precalculus classes

PUBLICATIONS   Ciesielski, P. E., R. H. Johnson, J. Wang, P. T. Haertel, and Scot Loehrer, 2011:
Developing high-quality field program sounding datasets. *Bul. Amer.
Meteor. Soc.* (in press).

Haertel, P. and A. Fedorov, 2011: The Ventilated Ocean. *J. Phys. Oceanogr.* (in
press).

Haertel, P. and K. H. Straub, 2010: Simulating convectively coupled Kelvin
waves using Lagrangian overturning for a convective parameterization.
Q. J. Royal Met. Soc., **136**, 1598-1613.

Straub K. H. and P. Haertel, 2010: An analysis of convectively coupled Kelvin
waves in 20 WCRP CMMIP3 global coupled climate models. *J.
Climate*, **23**, 3031-3056.

Van Roekel, L., T. Ito, P. Haertel, and D. Randall, 2009: Lagrangian analysis of
the meridional overturning circulation in an idealized ocean basin. *J.
Phys. Oceanogr.* **39**, 2175-2193.

Kiladis, G. N., M. C. Wheeler, P. T. Haertel, K. H. Straub, and P. E. Roundy,
2009: Convectively coupled equatorial waves, *Rev. Geophys.*, **47**,
RG2003, doi:10.1029/2008RG000266.

Haertel, P. T., L. Van Roekel, T. Jensen, 2009: Constructing an idealized model of
the north Atlantic Ocean using slippery sacks, *Ocean Modeling*, **27**,
143-159.

Haertel, P. T., G. N. Kiladis, T. Rickenbach, and A. Denno., 2008: Vertical mode
decompositions of 2-day waves and the Madden-Julian oscillation, *J.
Atmos. Sci.,* **65**, 813-833.

Kiladis, G. N., K. H. Straub, and P. T. Haertel, 2005: Zonal and vertical structure
of the Madden-Julian oscillation, *J. Atmos. Sci.*, **62**, 2790-2809.

Haertel, P. T. and G. N. Kiladis, 2004: Dynamics of two day equatorial waves, *J.
Atmos. Sci.*, **61**, 2707-2721.

Haertel, P. T., D. A. Randall and T. G. Jensen, 2004: Simulating upwelling in a
large lake using slippery sacks, *Mon. Wea. Rev.*, **132**, 66-77.

Ciesielski, P. E., R. H. Johnson, P. T. Haertel, J. Wang, 2003: Corrected TOGA
COARE sounding humidity data: Impact on Convection and Climate, *J.
Climate*, **16**, 2370-2384.

Haertel, P. T. and D. A. Randall, 2002: Could a pile of slippery sacks behave like
an ocean? *Mon. Wea. Rev,* **130,** 2975-2988.

Haertel, P. T., R. H. Johnson, and S. N. Tulich, 2001: Some simple simulations
of thunderstorm outflows. *J. Atmos. Sci.,* **58,** 504-516.

Haertel, P. T. and R. H. Johnson, 2000: The linear dynamics of squall-line
mesohighs and wake lows. *J. Atmos. Sci.,* **57,** 93-107.

PUBLICATIONS (cont.)	Haertel, P. T., 1998: The dynamics of MCS mesohighs and wake lows. Ph. D. dissertation, Colorado State University.
	Haertel, P. T. and R. H. Johnson, 1998: Two-day disturbances in the equatorial western Pacific. *Quart. J. Roy. Meteorol. Soc.,* **124,** 615-636.
	Haertel, P. T., 1995: Two-day disturbances in the tropical western Pacific. M.S. thesis, Colorado State University.
	Cederberg, J., D. Olson, P. Soulen, K. Urberg, T. Hung, T. Steinbach, B. Mock, K. Jarausch, P. Haertel, and M. Bersnahan, 1992: The hyperfine spectrum of LIF. *Journal of Molecular Spectroscopy* **154,** 43-50.
GRANTS	PI, NSF: Collaborative research: lagrangian modeling of convectively coupled waves and the Madden Julian Oscillation, $342,568 (recommended by NSF program manager, Sept. 2011).
	PI, NSF, Collaborative research: analysis and modeling of convectively-coupled equatorial waves and the Madden-Julian oscillation, $99,515 awared to Yale University on 12-03-08.
	PI, NSF, Collaborative research: analysis and modeling of convectively-coupled equatorial waves and the Madden-Julian oscillation, $144,271.00 awarded to Colorado State University on 10-17-07.
	PI, NSF, Collaborative research: analysis and modeling of convectively-coupled equatorial waves and the Madden-Julian oscillation, $304,000 awarded to University of North Dakota on 9-19-05.
RECENT INVITED TALKS	"Do we need to resolve atmospheric convective plumes to accurately simulate climate?" *Metstroem*, Free University of Berlin, June 2011
	"Vertical structures of equatorial waves in nature and in models," *Organized tropical convection and large-scale circulation: Theory, modeling, and observations*, Banff International Research Station, May 2011
	"Lagrangian modeling of oceans and atmospheres," *Numerical Hierarchies for Climate Modeling*, University of California, Los Angeles, April 2010.
	"LO and Behold Convectively Coupled Kelvin waves," *Multiscale processes in the Tropics*, Banff International Research Station, April 2009