

J. David Neelin

Department of Atmospheric and Oceanic Sciences, University of California, Los Angeles
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Born: October 31, 1959, Ottawa, Canada. Citizenship: Canada and United States (dual)

Education and Training

Doctorate: October, 1987, Princeton University, Geophysical Fluid Dynamics Program
Master of Science: August, 1983, University of Toronto, Department of Physics
Bachelor of Science, Hon.: June, 1981, University of Toronto, Department of Physics

Research and Professional Experience

Professor, Dept. of Atmospheric and Oceanic Sciences, UC Los Angeles July 1995–present
Chair, Dept. of Atmospheric and Oceanic Sciences, UCLA 7/2010-7/2013
Vice-Chair, Dept. of Atmospheric and Oceanic Sciences, UCLA 1/2004-1/2008, 1/2009-6/2010
Associate Professor, Dept. of Atmospheric Sciences, UC Los Angeles July 1992–July 1995
Visiting Associate Professor, Dept. of Earth, Atmospheric and Planetary Sciences, Massachusetts Institute of Technology, January 1994–May 1995 (Houghton Lectureship)
Assistant Prof., Dept. of Atmospheric Sciences, University of California, Los Angeles, 9/1988–6/1992
Postdoctoral Associate, Dept. of Earth, Atmospheric and Planetary Sciences, Massachusetts Institute of Technology. Sept. 1987–Aug. 1988

Selected Awards

Fellow, American Association for the Advancement of Science, 2012-present
Fellow, American Geophysical Union, 2012-present
Fellow of the John Simon Guggenheim Memorial Foundation, 2007-2008
Professeur Invité, Ecole Normale Supérieure, Paris May-June 2008
Fellow, American Meteorological Society, 2003-present
Fellow, Royal Meteorological Society, 2003-present
NSF Special Creativity Award 1999-2000
C. L. Meisinger Award of the American Meteorological Society, 1996
Houghton Lectureship, Dept. of Earth, Atmospheric and Planetary Sciences, MIT, 1994–95
Presidential Young Investigator Award 1991-1996
NSERC Postgraduate Scholarship, 1981-83, 1983-86
Canadian Meteorological and Oceanographic Society Award, 1983

Research Interests

Tropical climate dynamics including El Niño/Southern oscillation; climate variations on interannual and longer time scales; regional precipitation sensitivity including changes under global warming.
Theory for interactions among climate system subcomponents: ocean-atmosphere interaction; sea-ice–ocean interaction; land-surface and vegetation interaction with the physical climate system.
Tropical atmospheric dynamics, including interaction between moist convection and large-scale motions; evaporation-wind feedback; intraseasonal oscillations
Precipitation processes and their interaction with climate; stochastic representations of moist convection in climate models and observational constraints motivated by theory for testing these.
Building ocean-atmosphere models of intermediate complexity; asymptotic methods to simplify more complex models; reduction methods for fast optimization and sensitivity studies of climate models.

Service and synergistic activities

UCLA Center for Canadian Studies (Executive Committee member, 2011-present)
 Publication of a textbook (Cambridge University Press) and online course material on climate modeling for upper division undergraduate science majors from all fields (including biological sciences)
 Associate Editor, *Journal of Climate*, 1996-2006
 Contributing author, Fifth Assessment Report of the Intergovernmental Panel on Climate Change, 2012
 Reviewer, Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2006
 Reviewer, Third Assessment Report of the Intergovernmental Panel on Climate Change, 1999-2000
 International Climate Variability and Predictability Study (CLIVAR) Pacific Panel, 2005-2009
 National Research Council panel on the Global Ocean-Atmosphere-Land System, 1994-98.
 Contributor to the *Climate Change 1995*, Intergovernmental Panel on Climate Change report
 American Meteorological Soc. Committee on Hurricanes & Tropical Meteorology & Climate, 1995-98
 University Corporation for Atmospheric Research UCLA representative, 1988-94
 American Meteorological Society Committee on the Interaction of the Sea and Atmosphere, 1992-95

Selected recent publications

62. Lin, J. W.-B. & Neelin, J. D. Influence of a stochastic moist convective parameterization on tropical climate variability. *Geophys. Res. Lett.*, **27**, 3691–3694 (2000).
91. Neelin, J. D., Munnich, M., Su, H., Meyerson, J. E. & Holloway, C. Tropical drying trends in global warming models and observations. *Proc. Nat. Acad. Sci.*, **103**, 6110–6115 (2006).
92. Peters, O. & Neelin, J. D. Critical phenomena in atmospheric precipitation. *Nature Physics*, **2**, 393–396 (2006).
100. Neelin, J. D., Moist dynamics of tropical convection zones in monsoons, teleconnections and global warming, In *The Global Circulation of the Atmosphere*, Princeton University Press, (2007).
104. Neelin, J. D., Peters, O., Lin, J. W.-B., Hales, K. & Holloway, C., Rethinking convective quasi-equilibrium: observational constraints for stochastic convective schemes in climate models. *Phil. Trans. Royal Soc. A*, **366**, 2581-2604 (2008).
109. Neelin, J. D., Peters, O. & Hales, K. The transition to strong convection. *J. Atmos. Sci.*, **66**, 2367-2384 (2009).
110. Holloway, C. E. & Neelin, J. D. Moisture vertical structure, column water vapor, and tropical deep convection. *J. Atmos. Sci.*, **66**, 1665–1683 (2009).
116. Lintner, B. R. & Neelin, J. D., Tropical South America/Atlantic sector convective margins and their relationship to low-level inflow. *J. Climate*, **23**, 2671-2685, (2010).
118. Neelin, J. D., B. R. Lintner, B. Tian, Q. Li, L. Zhang, P. K. Patra, M. T. Chahine, and S. N. Stechmann. Long tails in deep columns of natural and anthropogenic tropospheric tracers. *Geophys. Res. Lett.* **37**, L05804 (2010).
119. Neelin, J. D., Bracco, A., Luo, H., McWilliams, J. C. & Meyerson, J. E. Considerations for parameter optimization and sensitivity in climate models. *Proc. Nat. Acad. Sci.* **107**, 21349-21354 (2010).
123. Stechmann, S. & Neelin, J. D. A stochastic model for the transition to strong convection. *J. Climate* **68**, 2955-2970 (2011).
132. Neelin, J. D., Langenbrunner, B., Meyerson, J. E., Hall, A. & Berg, N. California winter precipitation change under global warming in the Coupled Model Intercomparison Project 5 ensemble. *J. Climate* **26**, 6238–6256 (2013).

Publication Summary Information

Total peer-reviewed publications: over 140 journal articles, 5 book chapters
 One textbook & associated materials (for upper division undergraduate science students)
 H-index: 46 (Thomson ISI) or 54 (Google scholar); Papers with over 100 citations (Thomson ISI): 17

Books

Neelin, J. D., *Climate change and climate modeling*, Cambridge University Press, 282 pp. (2011).