

**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/U.S. (dual)

**Positions**

Vice-Chair, Dept. of Atmospheric and Oceanic Sciences, UCLA January 2004-present

Professor, Dept. of Atmospheric and Oceanic Sciences and Institute of Geophysics  
and Planetary Physics, UC Los Angeles July 1995–present

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 Professor, Dept. of Atmospheric Sciences, University of California, Los Angeles.  
Sept. 1988–June 1992

Postdoctoral Associate, Dept. of Earth, Atmospheric and Planetary Sciences,  
Massachusetts Institute of Technology. Sept. 1987–Aug. 1988

**Education**

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

**Selected Awards**

Fellow, American Meteorological Society, 2003

Fellow, Royal Meteorological Society, 2003

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

**Research Interests**

Ocean-atmosphere interaction. El Niño/Southern oscillation; climate variations on interannual and longer time scales. Sea-ice–ocean interaction. Land-surface–climate interaction.

Tropical atmospheric dynamics. Interaction between moist convection and large-scale motions; evaporation-wind feedback; intraseasonal oscillations.

Building atmospheric and ocean-atmosphere models of intermediate complexity; hybrid coupled models; theoretical models of atmospheric and climate phenomena; use of asymptotic methods to simplify more complex models.

**Service** (selected)

International Climate Variability and Predictability Study (CLIVAR) Pacific Panel, 2005-present  
 Associate Editor, *Journal of Climate*, 1996-2006  
 Reviewer, *Third Assessment Report of the Intergovernmental Panel on Climate Change*, 1999-2000  
 Global Ocean-Atmosphere-Land System (GOALS) Panel, Board on Atmospheric Sciences and Climate, National Research Council, 1994-98  
 Contributor, *Climate Change 1995, The Science of Climate Change*, Contribution of Working Group I to the Second Assessment report of the Intergovernmental Panel on Climate Change.  
 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  
 Tropical-oceans-Global-Atmosphere Program on Seasonal to Interannual Climate Prediction working group, 1992-95

**Affiliations**

American Meteorological Society (Fellow)  
 American Geophysical Union (Member)  
 American Association for the Advancement of Science (Member)  
 Canadian Meteorological and Oceanographic Society (Member)  
 Royal Meteorological Society (Fellow)

**Thesis advisor for 9 (total) doctoral students** (1 co-advised)

<b>Advisee</b>	<b>Current affiliation</b>
Jia-yuh Yu (PhD, 1994)	Professor, Culture University, Taiwan
Chia Chou (PhD, 1997)	Research Scientist, Academia Sinica, Taiwan
Hsin-Hsin Syu (PhD, 1997)	(No longer in research)
Wenjie Weng (PhD, 1998)	Researcher, Motorola
Mark S. Roulston (PhD 2000; Cal Tech Advisor Y. Yung)	Assistant Professor, Penn State University
Johnny W.-B. Lin (PhD 2000)	Assistant Professor, North Park University
Katrina Hales (PhD 2005)	Staff Research Associate, UCLA
Chris Holloway	Graduate student, UCLA
Melissa Strausberg	Graduate student, UCLA

**Advisor for 7 postdoctoral scholars** (2 co-advised)

Alistair Adcroft	Research Oceanographer, Geophysical Fluid Dynamics Lab, Princeton
Bruno Blanke	CNRS Researcher, Laboratoire de Physique des Océans, Brest
Rong Fu	Associate Professor, Georgia Inst. of Technology
Fei-Fei Jin	Professor, Florida State University
Roel Neggers	European Centre for Medium-Range Weather Forecasting
Hui Su	Jet Propulsion Laboratory
Duane Waliser	Principal Scientist, Water and Carbon Cycles, Jet Propulsion Laboratory
Jiayan Yang	Associate Scientist, Woods Hole Oceanographic Institution

**Publication Summary Information**

Total peer-reviewed publications: 92  
 Papers with over 100 citations (Thompson ISI): 9  
 Index for N papers with over N citations: 29

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## Principal Publications

1. Neelin, J. D., and C. A. Lin, 1984: Baroclinic generation of planetary transient and stationary waves from forced stationary waves. *J. Geophys. Res.*, **89**, D5, 7202-7214.
2. Neelin, J. D., and I. M. Held, 1987: Modelling tropical convergence based on the moist static energy budget. *Mon. Wea. Rev.*, **115**, 3-12.
3. Neelin, J. D., I. M. Held and K. H. Cook, 1987: Evaporation-wind feedback and low frequency variability in the tropical atmosphere. *J. Atmos. Sci.*, **44**, 2341-2348.
4. Neelin, J. D., 1988: A simple model for surface stress and low-level flow in the tropical atmosphere driven by prescribed heating. *Q. J. Roy. Met. Soc.*, **114**, 747-770.
5. Lau, N. C., I. M. Held and J. D. Neelin, 1988: The Madden-Julian oscillation in an idealized general circulation model. *J. Atmos. Sci.*, **45**, 3810-3832.
6. Neelin, J. D., 1988: Reply to Comments on an air-sea interaction model of intraseasonal oscillation in the tropics. *J. Atmos. Sci.*, **45**, 3526-3527.
7. Neelin, J. D., 1989: On the interpretation of the Gill model. *J. Atmos. Sci.*, **46**, 2466-2468.
8. Neelin, J. D., 1989: Interannual oscillations in an ocean general circulation model coupled to a simple atmosphere model. *Phil. Trans. Roy. Soc. Lond. A*, **329**, 189-205.
9. Neelin, J. D., 1990: A hybrid coupled general circulation model for El Niño studies. *J. Atmos. Sci.*, **47**, 674-693.
10. Neelin, J. D., 1991: The slow sea surface temperature mode and the fast-wave limit: Analytic theory for tropical interannual oscillations and experiments in a hybrid coupled model. *J. Atmos. Sci.*, **48**, 584-606.
11. Ghil, M., M. Kimoto and J. D. Neelin, 1991: Nonlinear dynamics and predictability in the atmospheric sciences. *Rev. Geophys.*, Supplement, pp. 46-55, U.S. National Report to the International Union of Geodesy and Geophysics 1987-1990.
12. Neelin, J. D., M. Latif, M. A. F. Allaart, M. A. Cane, U. Cubasch, W. L. Gates, P. R. Gent, M. Ghil, C. Gordon, N. C. Lau, C. R. Mechoso, G. A. Meehl, J. M. Oberhuber, S. G. H. Philander, P. S. Schopf, K. R. Sperber, A. Sterl, T. Tokioka, J. Tribbia and S. E. Zebiak, 1992: Tropical air-sea interaction in general circulation models. *Climate Dynamics*, **7**, 73-104.
13. Neelin, J. D., Z. Hao and F.-F. Jin, 1992: Reply to 'A note on the fast-wave limit and interannual oscillations'. *J. Atmos. Sci.*, **49**, 1950-1953.
14. Jin, F.-F., and Neelin, J. D., 1993: Modes of interannual tropical ocean-atmosphere interaction —a unified view. Part I: Numerical results. *J. Atmos. Sci.*, **50**, 3477-3503.
15. Neelin, J. D., and Jin, F.-F., 1993: Modes of interannual tropical ocean-atmosphere interaction —a unified view. Part II: Analytical results in the weak coupling limit. *J. Atmos. Sci.*, **50**, 3504-3522.
16. Jin, F.-F., and Neelin, J. D., 1993: Modes of interannual tropical ocean-atmosphere interaction —a unified view. Part III: Analytical results in fully coupled cases. *J. Atmos. Sci.*, **50**, 3523-3540.
17. Yang, J.-Y., and J. D. Neelin, 1993: Sea-ice interactions with the thermohaline circulation. *Geophys. Res. Lett.*, **20**, 217-220.

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**Principal Publications** (continued)

18. Hao, Z., J. D. Neelin and F.-F. Jin, 1993: Nonlinear tropical air-sea interaction in the fast-wave limit. *J. Climate*, **6**, 1523-1544.
19. Liu, W., M. Ghil, J. D. Neelin and C. A. Hall, 1993: A simple coastal ocean model for the Central Californian basin during late Miocene. *Paleoceanogr.*, **8**, 799-810.
20. Neelin, J. D., M. Latif and F.-F. Jin, 1994: Dynamics of coupled ocean-atmosphere models: the tropical problem. *Ann. Rev. Fluid Mech.*, **26**, 617-659.
21. Neelin, J. D., and J.-Y. Yu, 1994: Modes of tropical variability under convective adjustment and the Madden-Julian oscillation. Part I: Analytical results. *J. Atmos. Sci.*, **51**, 1876-1894.
22. Yu, J.-Y., and Neelin, J. D., 1994: Modes of tropical variability under convective adjustment and the Madden-Julian oscillation. Part II: Numerical results. *J. Atmos. Sci.*, **51**, 1895-1914.
23. Jin, F.-F., J. D. Neelin and M. Ghil, 1994: El Niño on the devil's staircase: annual subharmonic steps to chaos. *Science*, **264**, 70-72.
24. Emanuel, K. A., J. D. Neelin and C. S. Bretherton, 1994: On large-scale circulations in convecting atmospheres. *Quart. J. Roy. Meteor. Soc.*, **120**, 1111-1143.
25. Neelin, J. D., and J. Marotzke, 1994: Representing ocean eddies in climate models. *Science*, **264**, 1099-1100.
26. Waliser, D. E. , B. Blanke, J. D. Neelin and C. Gautier, 1994: Shortwave feedbacks and El Niño–Southern Oscillation: Forced ocean and coupled ocean-atmosphere experiments. *J. Geophys. Res.*, **99**, 25109-25125.
27. Dijkstra, H. A., and J. D. Neelin, 1995: On the attractors of an intermediate coupled equatorial ocean-atmosphere model. *Dyn. Atm. Oceans*, **22**, 19-48.
28. Neelin, J. D. and H. A. Dijkstra, 1995: Ocean-atmosphere interaction and the tropical climatology. Part I: The dangers of flux correction. *J. Climate*, **8**, 1325-1342.
29. Dijkstra, H. A. and J. D. Neelin, 1995: Ocean-atmosphere interaction and the tropical climatology, Part II: Why the Pacific cold tongue is in the east. *J. Climate*, **8**, 1343-1359.
30. Syu, H.-H., J. D. Neelin and D. Gutzler, 1995: Seasonal and interannual variability in a hybrid coupled GCM. *J. Climate*, **8**, 2121-2143.
31. Jiang, N., J. D. Neelin and M. Ghil, 1995: Quasi-quadrennial and quasi-biennial variability in COADS equatorial Pacific sea surface temperature and winds. *Climate Dynamics*, **12**, 101-112.
32. Mechoso, C. R., A. W. Robertson, N. Barth, M. K. Davey, P. Delecluse, P. R. Gent, S. Ineson, B. Kirtman, M. Latif, H. Le Treut, T. Nagai, J. D. Neelin, S. G. H. Philander, J. Polcher, P. S. Schopf, T. Stockdale, M. J. Suarez, L. Terray, O. Thual, and J. J. Tribbia, 1995: The seasonal cycle over the tropical Pacific in coupled ocean-atmosphere general circulation models. *Mon. Wea. Rev.*, **123**, 2825-2838.
33. Chou, C., and J. D. Neelin, 1996: Linearization of a long-wave radiation scheme for intermediate tropical atmospheric models. *J. Geophys. Res.*, **101**, 15129-15145.
34. Jin, F.-F., J. D. Neelin and M. Ghil, 1996: El Niño/Southern Oscillation and the annual cycle: subharmonic frequency locking and aperiodicity. *Physica D*, **98**, 442-465.

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**Principal Publications** (continued)

35. Yang, J.-Y., and J. D. Neelin, 1997: Sea-ice interaction and the stability of the thermohaline circulation. *Atmosphere–Ocean*, **35**, 433-469.
36. Yu, J.-Y., and J. D. Neelin, 1997: Analytic approximations for moist convectively adjusted regions. *J. Atmos. Sci.*, **54**, 1054-1063.
37. Blanke, B., J. D. Neelin and D. Gutzler, 1997: Estimating the effects of stochastic wind stress forcing on ENSO irregularity. *J. Climate*, **10**, 1473-1486.
38. Emanuel, K. A., J. D. Neelin and C. S. Bretherton, 1997: On large-scale circulations in convecting atmospheres—reply. *Quart. J. Roy. Meteor. Soc.*, **123**, 1779-1782.
39. Neelin, J. D., 1997: Implications of convective quasi-equilibrium for the large-scale flow. In *The physics and parameterization of moist atmospheric convection*. R. K. Smith, ed., Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. 413-446.
40. Yang, J., and J. D. Neelin, 1997: Decadal variability in coupled sea-ice–thermohaline systems. *J. Climate*, **10**, 3059-3076.
41. Yu, J.-Y., C. Chou and J. D. Neelin, 1998: Estimating the gross moist stability of the tropical atmosphere. *J. Atmos. Sci.*, **55**, 1354-1372.
42. Neelin, J. D., D. S. Battisti, A. C. Hirst, F.-F. Jin, Y. Wakata, T. Yamagata, and S. E. Zebiak, 1998: ENSO theory. *J. Geophys. Res.*, **103**, 14261-14290.
43. Weng, W., and Neelin, J. D., 1998: On the role of ocean-atmosphere interaction in midlatitude interdecadal variability. *Geophys. Res. Lett.*, **25**, 167-170.
44. Neelin, J. D., and M. Latif, 1998: El Niño Dynamics. *Physics Today*, **51**, 32-36.
45. Dijkstra, H. A. and J. D. Neelin, 1999: Imperfections of the thermohaline circulation: multiple equilibria and flux correction. *J. Climate*, **12**, 1382-1392.
46. Neelin, J. D., and W. Weng, 1999: Analytical prototypes for ocean-atmosphere interaction at midlatitudes. Part I: coupled feedbacks as sea surface temperature dependent stochastic forcing *J. Climate*, **12**, 697-721.
47. Zeng, N., and J. D. Neelin, 1999: A land-atmosphere interaction theory for the tropical deforestation problem. *J. Climate*, **12**, 857-872.
48. Dijkstra, H. A. and J. D. Neelin, 1999: Coupled processes and the tropical climatology. Part III: Instabilities of the fully coupled climatology. *J. Climate*, **12**, 1630-1643.
49. Chou, C., and J. D. Neelin, 1999: Cirrus-detrainment-temperature feedback. *Geophys. Res. Lett.*, **26**, 1295-1298.
50. Weng, W., and Neelin, J. D., 1999: Analytical prototypes for ocean-atmosphere interaction at midlatitudes. Part II: mechanisms for coupled gyre modes. *J. Climate*, **12**, 2757-2774.
51. Zeng, N., J. D. Neelin, W. K.-M. Lau, and C. J. Tucker, 1999: Enhancement of interdecadal climate variability in the Sahel by vegetation interaction. *Science*, **286**, 1537-1540.
52. Dijkstra, H. A. and J. D. Neelin, 2000: Imperfections of the thermohaline circulation: Latitudinal asymmetry and preferred northern sinking. *J. Climate*, **13**, 366-382.

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**Principal Publications** (continued)

53. Neelin, J. D., and N. Zeng, 2000: A quasi-equilibrium tropical circulation model—formulation. *J. Atmos. Sci.*, **57**, 1741–1766.
54. Zeng, N., J. D. Neelin, and C. Chou, 2000: A quasi-equilibrium tropical circulation model—implementation and simulation. *J. Atmos. Sci.*, **57**, 1767–1796.
55. Lin, J. W., J. D. Neelin, and N. Zeng, 2000: Maintenance of tropical intraseasonal variability: impact of evaporation-wind feedback and midlatitude storms. *J. Atmos. Sci.*, **57**, 2793–2823.
56. Neelin, J. D., F.-F. Jin, and H.-H. Syu, 2000: Variations in ENSO phase-locking. *J. Climate*, **13**, 2570–2590.
57. Syu, H.-H., and J. D. Neelin, 2000: ENSO in a hybrid coupled model. Part I: sensitivity to physical parameterizations. *Climate Dynamics*, **16**, 19–34.
58. Syu, H.-H., and J. D. Neelin, 2000: ENSO in a hybrid coupled model: Part II: prediction with piggyback data assimilation. *Climate Dynamics*, **16**, 35–48.
59. Zeng, N., J. D. Neelin, C. Chou, J. W.-B. Lin and H. Su, 2000: Climate and variability in a quasi-equilibrium tropical circulation model. In *General circulation Modeling: Past, Present, and Future*. D. A. Randall, ed., Academic Press, pp. 457-488.
60. Zeng, N. and J. D. Neelin, 2000: The role of vegetation-climate interaction and interannual variability in shaping the African Savanna. *J. Climate*, **13**, 2665-2670.
61. Roulston, M. S., and J. D. Neelin, 2000: The response of an ENSO model to climate noise, weather noise and intraseasonal forcing. *Geophys. Res. Lett.*, **27**, 3723-3726.
62. Lin, J. W.-B., and J. D. Neelin, 2000: Influence of a stochastic moist convective parameterization on tropical climate variability. *Geophys. Res. Lett.*, **27**, 3691–3694.
63. Perigaud, C. M., C. Cassou, B. DeWitte, L.-L. Fu and J. D. Neelin, 2000: Using data and intermediate coupled models for seasonal-to-interannual forecasts. *Mon. Wea. Rev.* **128**, 3025-3049.
64. Chou, C., and J. D. Neelin, 2001: Mechanisms limiting the southward extent of the South American summer monsoon. *Geophys. Res. Lett.*, **28**, 2433-2436.
65. Su, H., J. D. Neelin, and C. Chou, 2001: Tropical teleconnection and local response to SST anomalies during the 1997-1998 El Niño. *J. Geophys. Res.*, **106**, D17, 20,025–20,043.
66. Chou, C., J. D. Neelin, and H. Su, 2001: Ocean-atmosphere-land feedbacks in an idealized monsoon, *Quart. J. Roy. Meteor. Soc.*, **127**, 1869-1891.
67. Sun, C., Z. Hao, M. Ghil and J. D. Neelin, 2002: Data assimilation for a coupled ocean-atmosphere model. Part I: Sequential state estimation. *Mon. Wea. Rev.*, **130**, 1073–1099.
68. Lin, J. W.-B., and J. D. Neelin, 2002: Considerations for stochastic convective parameterization. *J. Atmos. Sci.*, **59**, 959-975.
69. Stevens, B., J. Duan, J. C. McWilliams, M. Münnich and J. D. Neelin, 2002, Entrainment, Rayleigh friction and boundary layer winds over the tropical Pacific. *J. Climate*, **15**, 30-44.
70. Su, H., and J. D. Neelin, 2002: Teleconnection mechanisms for tropical Pacific descent anomalies during El Niño. *J. Atmos. Sci.*, **59**, 2694-2712.

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**Principal Publications** (continued)

71. Nogues-Paegle, J., C. R. Mechoso, R. Fu, E. H. Berbery, W. C. Chao, T.-C. Chen, K. Cook, A. F. Diaz, D. Enfield, R. Ferreira, A. M. Grimm, V. Kousky, B. Liebmann, J. Marengo, K. Mo, J. D. Neelin, J. Paegle, A. W. Robertson, A. Seth, C. S. Vera, J. Zhou, 2002: Progress in Pan American CLIVAR Research: Understanding the South American Monsoon. *Meteorologica*, **27** 3-32.
72. Zeng, N., K. Hales, and J. D. Neelin, 2002: Nonlinear dynamics in a coupled vegetation-climate system and implications for desert-forest gradient. *J. Climate*, **15**, 3474-3487.
73. Mechoso, C. R., J. D. Neelin and J.-Y. Yu, 2003: Testing simple models of ENSO. *J. Atmos. Sci.*, **60**, 305-318.
74. Chou, C. and J. D. Neelin, 2003: Mechanisms limiting the northward extent of the northern summer monsoons over North America, Asia and Africa. *J. Climate*, **16**, 406-425.
75. Su, H., J. D. Neelin and J. E. Meyerson, 2003: Sensitivity of tropical tropospheric temperature to sea surface temperature forcing. *J. Climate*, **16**, 1283-1301.
76. Lin, J. W.-B., and J. D. Neelin, 2003: Toward stochastic moist convective parameterization in general circulation models. *Geophys. Res. Lett.*, **30**(4), 1162, doi:10.1029/2002GL016203.
77. Dijkstra, H. A., W. Weijer and J. D. Neelin, 2003: Imperfections of the three-dimensional thermohaline ocean circulation: Hysteresis and unique-state regimes. *J. Phys. Oceanog.*, **33**, 2796-2814.
78. Roulston, M. S., and J. D. Neelin, 2003: Non-linear coupling between modes in a low-dimensional model of ENSO. *Atmosphere-Ocean*, **41**, 217-231.
79. Su, H. and J. D. Neelin, 2003: The scatter in tropical average precipitation anomalies. *J. Climate*, **16**, 3966-3977.
80. Neelin, J. D., C. Chou, and H. Su, 2003: Tropical drought regions in global warming and El Niño teleconnections. *Geophys. Res. Lett.*, **30**(24), 2275, doi:10.1029/2003GL018625.
81. Munnich, M., and J. D. Neelin, 2004: Where is ENSO stress balanced? *Atmospheric Science Letters*, **5**, 35-41.
82. K. Hales, J. D. Neelin and N. Zeng, 2004: Sensitivity of tropical land climate to leaf area index: Role of surface conductance versus albedo. *J. Climate*, **17**, 1459-1473.
83. Chou, C. and J. D. Neelin, 2004: Mechanisms of global warming impacts on regional tropical precipitation. *J. Climate*, **17**, 2688-2701.
84. Su, H., J. D. Neelin, and J. E. Meyerson, 2004: Tropical tropospheric temperature and precipitation response to sea surface temperature forcing. In *Ocean-Atmosphere Interaction and Climate Variability*. Geophysical Monograph Series, 147, 397-392. C. Wang, S.-P. Xie, J. Carton, eds., Amer. Geophys. Union.
85. Tang, B. H., and J. D. Neelin, 2004: ENSO influence on Atlantic hurricanes via tropospheric warming. *Geophys. Res. Lett.*, **31**, L24204, doi:10.1029/2004GL021072.
86. Neelin, J. D., and H. Su, 2005: Moist teleconnection mechanisms for the tropical South American and Atlantic sector. *J. Climate*, **18**, 3928-3950.

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**Principal Publications** (continued)

87. Su, H., J. D. Neelin, and J. E. Meyerson, 2005: Mechanisms for lagged atmospheric response to ENSO SST forcing. *J. Climate*, **18**, 4195-4215.
88. Chou, C., J. D. Neelin, U. Lohmann and J. Feichter, 2005: Local and remote impacts of aerosol climate forcing on tropical precipitation. *J. Climate*, **18**, 4621-4636.
89. Su, H., and J. D. Neelin, 2005: Dynamical mechanisms for African monsoon changes during the mid-Holocene. *J. Geophys. Res.*, **110**, D19105, doi:10.1029/2005JD005806.
90. M. Munnich, J. D. Neelin, 2005: Seasonal Influence of ENSO on the Atlantic ITCZ and equatorial South America. *Geophys. Res. Lett.*, **32**, L21709, doi:10.1029/2005GL023900.
91. J. D. Neelin, M. Munnich, H. Su, J. E. Meyerson and C. Holloway, 2006: Tropical drying trends in global warming models and observations. *Proc. Nat. Acad. Sci.*, in press.
92. Hales, K., J. D. Neelin and N. Zeng, 2006: Interaction of vegetation and atmospheric dynamical mechanisms in the mid-Holocene African monsoon. *J. Climate*, in press.
93. Chou, C., J. D. Neelin, J.-Y. Tu, and C.-T. Chen, 2006: Regional tropical precipitation change mechanisms in ECHAM4/OPYC3 under global warming. *J. Climate*, in press.
94. Neggers, R., B. Stevens and J. D. Neelin, 2006: A simple equilibrium model for shallow cumulus convection. *Theoretical and Computational Fluid Dynamics*, revised.
95. Sobel, A. H., and J. D. Neelin, 2006: The boundary layer contribution to intertropical convergence zones in the quasi-equilibrium tropical circulation model framework. *Theoretical and Computational Fluid Dynamics*, submitted.
96. Neggers, R., J. D. Neelin and B. Stevens, 2006: Impact mechanisms of shallow cumulus convection on tropical climate dynamics. *J. Climate*, submitted.
98. Neelin, J. D., 2006: Moist dynamics of tropical convection zones in monsoons, teleconnections and global warming. Revised for *The Global Circulation of the Atmosphere*, T. Schneider and A. Sobel, Eds.

**Selected Talks and Lectures** (since 1995)

- 2006: American Institute of Mathematics, Palo Alto, CA (Invited)  
 Jet Propulsion Laboratory, Pasadena (Invited)  
 Atmospheric Infrared Sounder Science workshop, Cal Tech
- 2005: Workshop on Multi-scale Interactions in the Tropics to midlatitudes: Mathematical theory, observations and numerical models (Invited)  
 Dept. of Oceanic and Atmospheric Science, University of Maryland  
 Columbia University IGERT Colloquium (Invited)  
 Focussed Research Group on Tropical Dynamics Workshop, Columbia Univ.  
 Institute of Geophysical and Planetary Physics  
 Colorado State Univ., Fort Collins (Invited)  
 National Center for Atmospheric Research, Boulder  
 AMS 16th Symp. on Global Change & Climate Variations, San Diego (Two talks)
- 2004: Twenty-Sixth Conference on Hurricanes and Tropical Meteorology, Miami  
 Rosenstiel School of Marine and Atmospheric Science, U of Miami  
 AGU 2004 Joint Assembly, Montreal  
 Conference on the Global Circulation of the Atmosphere, Cal Tech (Invited)  
 AGU session on Tropical teleconnections, San Francisco (Invited)
- 2003: Dept. of Physics, University of Toronto  
 First EGS-AGU-EUG Joint Assembly, Nice, France (Two invited talks)  
 Stochastic modeling of geophysical flows workshop, Boulder CO (invited)  
 Institute of Geophysical and Planetary Physics  
 AMS Annual Meeting, Long Beach, CA
- 2002: International Research Institute, Columbia University (Invited)  
 Goddard Space Flight Center, Greenbelt MD  
 Twenty-Fifth conference on Hurricanes and Tropical Meteorology, San Diego  
 Institute for Pure and Applied Mathematics, UCLA  
 McGill University, Department of Atmospheric and Oceanic Sciences, Montreal
- 2001: Courant Institute of Mathematics, Workshop on Tropical Convection and Waves (Invited)  
 California Institute of Technology  
 Institute of Geophysical and Planetary Physics, UCLA  
 AMS Conference on Interaction of the Sea and Atmosphere, San Diego (Invited)  
 Geophysical Fluid Dynamics Laboratory, Princeton  
 Goddard Space Flight Center, Greenbelt MD  
 California Institute of Technology
- 2000: Canadian Meteorological and Oceanographic Society, Plenary session (Invited)  
 Pan-American Climate System Workshop, Potomac MD  
 Max-Planck-Institut für Meteorologie, Hamburg  
 Postdam Inst. for Climate Impact Research, Potsdam  
 Royal Meteorological Society 150th Anniversary Conference (Invited)  
 Workshop on the Madden-Julian Oscillation and ENSO, Princeton (Invited)  
 McGill University, Centre for Climate and Global Change Research, Montreal
- 1999: Courant Inst. of Mathematics, Workshop on Stochastic Climate Modeling (Invited)  
 International Union of Geodesy and Geophysics, Union lecture, Birmingham, UK  
 International Union of Geodesy and Geophysics, two other talks, Birmingham, UK  
 University of Utrecht, The Netherlands  
 NASA Goddard Space Flight Center  
 National Center for Atmospheric Research
- 1998: American Geophysical Union, Union session, San Francisco

- University of Arizona, Pan-American Climate system meeting  
 Max-Planck-Institut für Meteorologie, Hamburg  
 Cambridge University, Geophysical and Environmental Fluid Mechanics Summer School,  
 Dept. of Applied Math and Theoretical Physics  
 Hadley Centre for Climate Prediction and Research, Bracknell, U.K.  
 Reading University, U.K.  
 Lamont-Doherty Earth Observatory, Columbia University  
 Summer school on “Bifurcations and Pattern Formation in Atmospheric and Ocean Dynam-  
 ics”, Valle d’Aosta, Italy (Invited Lecturer)  
 Geophysical Fluid Dynamics Laboratory, Princeton  
 Dept. of Earth System Science, U. C. Irvine  
 Arakawa Symposium, UCLA  
 American Meteorological Society, Ninth Conf. on the Interaction of the Sea and Atmosphere
- 1997: Goddard Inst. for Space Studies, Workshop on Ocean Modeling, New York  
 IAMAS/IAPSO Symposium on large-scale natural variability in the atmosphere and ocean  
 systems, Melbourne (Invited)  
 Amer. Meteorol. Soc. (AMS) Seventh Conference on Climate Variations, Long Beach  
 National Center for Atmospheric Research, Boulder  
 AMS 22nd Conference on Tropical Meteorology, Fort Collins  
 Jet Propulsion Laboratory, Pasadena  
 Sigma Xi (Invited lecture)
- 1996: AMS 76th Annual Meeting, Atlanta  
 Courant Institute of Mathematical Sciences, New York  
 U of Arizona, Dept. of Atmospheric Sciences, Tucson  
 UCLA, Dept. of Atmospheric Sciences, Los Angeles  
 U of Chicago, Dept. of Geophysical Sciences  
 NATO Advanced Study Institute, Kloster Seeon, Germany (3 Invited lectures)  
 UCLA, Institute of the Environment
- 1995: AMS Symposium on Regulation of Sea Surface Temperature, Dallas  
 McGill University, Dept. of Meteorology  
 Massachusetts Institute of Technology, Dept. of Earth, Atmospheric and Planetary Sciences  
 International Tropical Atmosphere/Global Oceans Conference, Melbourne (Invited)  
 Los Alamos National Laboratory, 15th Annual Conf., Center for Nonlinear Studies (Invited)  
 Woods Hole Oceanographic Institution