

## **JUDITH A. CURRY**

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### **GENERAL INFORMATION**

#### **Education**

1982 Ph.D. The University of Chicago, Geophysical Sciences  
1974 B.S. cum laude Northern Illinois University, Geography

#### **Professional Experience**

2002- Professor, School of Earth and Atmospheric Sciences  
Georgia Institute of Technology

2002-2014 Chair, School of Earth and Atmospheric Sciences  
Georgia Institute of Technology

1992-2002 Professor, University of Colorado-Boulder  
Department of Aerospace Engineering Sciences  
Program in Atmospheric and Oceanic Sciences  
Environmental Studies Program

1989-1992 Associate Professor, Department of Meteorology, Penn State

1986-1989 Assistant Professor, Dept of Earth and Atmospheric Sciences, Purdue University

1982-1986 Assistant Scientist, Dept of Meteorology, University of Wisconsin-Madison

#### **Awards/Honors**

2011 Graetzinger Moving School Forward Award, Georgia Tech

2007 Fellow, American Association for the Advancement of Science

2006 Best Faculty Paper Award, Georgia Tech Sigma Xi

2004 Fellow, American Geophysical Union

2002 NASA Group Achievement Award for CAMEX-4

2002 Green Faculty Award, University of Colorado

1997 Elected Councilor, American Meteorological Society

1995 Fellow, American Meteorological Society

1992 Henry G. Houghton Award, the American Meteorological Society

1988 Presidential Young Investigator Award, the National Science Foundation

#### **Recent Professional Activities**

World Meteorological Organization / International Council of Scientific Unions / International Ocean Commission / World Climate Research Programme

- Global Energy and Water Experiment (GEWEX) Radiation Panel (1994-2004)
- GEWEX Cloud System Studies (GCSS) Science Steering Group (1998-2004)
- Chair, GCSS Working Group on Polar Clouds (1998-2004)
- Chair, GEWEX Radiation Panel SEAFLUX Project (1999-2004)

- Steering Committee, IGAC/SOLAS Air-Ice Chemical Interactions (2003-2006)
- Science Steering Group, Arctic Climate System (ACSYS) Programme (1994-2000)

#### National Research Council – National Academies

- Space Studies Board (2004-2007)
- Climate Research Committee (2003-2006)
- Panel: A Strategy to Mitigate the Impact of Sensor Descopes and De-manifests on the NPOESS and GOES-R Spacecraft (2007-2008)
- Committee to review CCSP SAP 1.1 Temperature Trends in the Lower Atmosphere: Steps for Understanding and Reconciling Differences (2007)

#### U.S. Federal Agencies

- DOE Biological & Environmental Research Advisory Committee (BERAC) (2012-2015)
- Earth Science Subcommittee, NASA Advisory Council (2009-2013)
- Search Committee, NSF Director for Geoscience (2007)
- External Advisory Board, NCAR Atmospheric Technology Division (2004-2006)
- Science Board, DOE ARM Climate Reference Facility, (2008-2011)
- External Review Committee, COSIM Program, Los Alamos National Laboratory (2007)
- NOAA Climate Working Group (2004-2009)

#### Professional Societies

- Executive Committee, American Physical Society Topical Group on Physics of Climate (2013-2016)
- Member, Fellows Committee, American Geophysical Union (2013-2014)
- Executive Committee of the Council, American Meteorological Society (1998-2000)
- Councilor, American Meteorological Society (1997-2000)

#### Other

- Member, Visiting Committee, Dept of Earth and Atmospheric Sciences, Purdue Univ. (2008)
- Member, Visiting Committee, Dept of Earth, Atmosphere and Planetary Sciences, the MIT Corporation (2009 - )

## **RESEARCH**

### **Books**

Khvorostyanov, V.I. and J.A. Curry, 2013: *Kinetics and Thermodynamics of Clouds and Precipitation*. Cambridge University Press, Cambridge University Press (in press).

Curry, J.A. and P.J. Webster, 1999: *Thermodynamics of Atmospheres and Oceans*. Academic Press, London, 467 pp (second edition under contract).

Holton, J.P., J.A. Curry, and J. Doyle, eds., 2003: *Encyclopedia of Atmospheric Sciences*. Academic Press, London, 6244 pp.

### **Refereed Publications**

1. Curry, J.A., 1983: On the formation of continental Polar air. *J. Atmos. Sci.*, 40, 2278-2292.
2. Herman, G.F. and J.A. Curry, 1984: Observational and theoretical studies of solar radiation in Arctic stratus clouds. *J. Clim. Appl. Met.*, 23, 5-24.
3. Curry, J.A. and G. F. Herman, 1985: Infrared radiative properties of Arctic stratus clouds. *J. Clim. Appl. Met.*, 24, 525-538.
4. Curry, J.A. and G.F. Herman, 1985: Relationships between large-scale heat and moisture budgets

- and the occurrence of Arctic stratus clouds. *Mon. Wea. Rev.*, 113, 1441-1457.
5. Curry, J.A., 1986: Interactions among turbulence, radiation and microphysics in Arctic stratus clouds. *J. Atmos. Sci.*, 43, 90-106.
  6. Curry, J.A., 1986: Reply to comments on "Interactions between turbulence, radiation and microphysics in Arctic stratus clouds." *J. Atmos. Sci.*, 43, 2753-2755.
  7. Curry, J.A., 1987: The contribution of radiative cooling to the formation of cold-core anticyclones. *J. Atmos. Sci.*, 44, 2575-2592.
  8. Curry, J.A., E.E. Ebert, and G.F. Herman, 1988: Mean and turbulence structure of the summertime Arctic cloudy boundary layer. *Quart. J. Roy. Met. Soc.*, 114, 715-746.
  9. Curry, J.A., 1988: Arctic cloudiness in spring from satellite imagery: some comments. *J. Climatol.*, 8, 543-549.
  10. Curry, J.A. and C.-H. Moeng, 1989: Role of cloud-top radiative cooling in the production of turbulence kinetic energy. *IRS'88: Current Problems in Atmospheric Radiation*, 60-63.
  11. Curry, J.A., F.G. Meyer and E.E. Ebert, 1989: Cloudless ice-crystal precipitation in the polar regions. *IRS '88: Current Problems in Atmospheric Radiation*, 80-83.
  12. Tian, L. and J.A. Curry, 1989: Cloud overlap statistics. *J. Geophys. Res.*, 94, 9925-9935.
  13. Curry, J.A. and E.E. Ebert, 1990: Sensitivity of the thickness of Arctic sea ice to the optical properties of clouds. *Ann. Glaciol.*, 14, 43-46.
  14. Curry, J.A., F.G. Meyer, L.F. Radke, C.A. Brock, and E.E. Ebert, 1990: The occurrence and characteristics of lower tropospheric ice crystals in the Arctic. *Int. J. Climatol.*, 10, 749-764.
  15. Curry, J.A., C.D. Ardeel, and L. Tian, 1990: Liquid water content and precipitation characteristics of stratiform clouds as inferred from satellite microwave measurements. *J. Geophys. Res.*, 95, 16659-16671.
  16. Meyer, F.G., J.A. Curry, C.A. Brock and L.F. Radke, 1991: Springtime visibility in the Arctic. *J. Appl. Meteor.*, 30, 342-357.
  17. Ebert, E.E. and J.A. Curry, 1992: A parameterization of cirrus cloud optical properties for climate models. *J. Geophys. Res.*, 97, 3831-3836.
  18. Sheu, R.-S. and J.A. Curry, 1992: Interactions between North Atlantic clouds and the large-scale environment. *Mon. Wea. Rev.*, 120, 261-278.
  19. Curry, J.A. and G. Liu, 1992: Assessment of aircraft icing potential using satellite data. *J. Appl. Meteor.*, 31, 605-621.
  20. Curry, J.A. and E.E. Ebert, 1992: Annual cycle of radiative fluxes over the Arctic Ocean: Sensitivity to cloud optical properties. *J. Climate*, 5, 1267-1280.
  21. Liu, G. and J.A. Curry, 1992: Retrieval of precipitation from satellite microwave measurements using both emission and scattering. *J. Geophys. Res.*, 97, 9959-9974.
  22. Ebert, E. and J.A. Curry, 1993: An intermediate one-dimensional thermodynamic sea ice model for investigating ice-atmosphere interactions. *J. Geophys. Res.*, 98, 10085-10109.
  23. Tan, Y.C. and J.A. Curry, 1993: A diagnostic study of the evolution of an intense North American anticyclone during winter 1989. *Mon. Wea. Rev.*, 121, 961-975.
  24. Liu, G. and J.A. Curry, 1993: Determination of characteristics of cloud liquid water from satellite microwave measurements. *J. Geophys. Res.*, 98, 5069-5092.
  25. Wilson, L.D., J.A. Curry, and T.P. Ackerman, 1993: On the satellite retrieval of lower tropospheric ice crystal clouds in the polar regions. *J. Climate*, 6, 1467-1472.
  26. Curry, J.A., J. Schramm and E.E. Ebert, 1993: Impact of clouds on the surface radiation budget of the Arctic Ocean. *Meteor. and Atmos. Phys.*, 57, 197-217.
  27. Curry, J.A. and L.F. Radke, 1993: Possible role of ice crystals in ozone destruction of the lower Arctic atmosphere. *Atmos. Environ.*, 27, 2873-2879.
  28. Curry, J.A. et al., 1994: New Program to Research Issues of Global Climate in the Arctic. *EOS*, 75, 249-252.
  29. Liu, G., J.A. Curry and M. Weadon, 1994: Atmospheric water balance in Typhoon Nina as determined from SSM/I satellite data. *Meteor. Atmos. Phys.* 54, 141-156.

30. Curry, J.A., J. Schramm and E. E. Ebert, 1995: On the sea ice albedo climate feedback mechanism. *J. Climate*, 8, 240-247.
31. Curry, J.A., 1995: Interactions Among Aerosols, Clouds and Climate of the Arctic Ocean. *The Science of the Total Environment*, 160/161, 777-791.
32. Liu, G., J.A. Curry, and C.A. Clayson, 1995: Study of tropical cyclogenesis using satellite data. *Meteor. Atmos. Phys.*, 56, 111-123.
33. Pinto, J.O., J.A. Curry and K.L. McInnes, 1995: Atmospheric convective plumes emanating from leads. Part I: Thermodynamic structure. *J. Geophys. Res.*, 100, 4621-4632.
34. Pinto, J.O. and J.A. Curry, 1995: Atmospheric convective plumes emanating from leads. Part II: Cloud microphysical and radiative properties. *J. Geophys. Res.*, 100, 4633- 642.
35. Alam, A. and J.A. Curry, 1995: Lead-induced atmospheric circulations. *J. Geophys. Res.*, 100, 4643-4652.
36. McInnes, K.L. and J.A. Curry, 1995: Modelling the mean and turbulent structure of the summertime Arctic cloudy boundary layer. *Bound. Lay. Meteor.*, 73, 125-143.
37. Liu, G., J.A. Curry, and R.S. Sheu, 1995: Classification of clouds over the western equatorial Pacific Ocean using combined infrared and microwave satellite data. *J. Geophys. Res.*, 100, 13,811-13,826.
38. Curry, J.A., J.L. Schramm, MC. Serreze, and E.E. Ebert, 1995: Water vapor feedback over the Arctic Ocean. *J. Geophys. Res.*, 100, 14,223-14,229.
39. Ebert, E.E., J.L. Schramm, and J.A. Curry, 1995: Disposition of shortwave radiation in sea ice. *J. Geophys. Res.*, 100, 15965-15976.
40. Curry, J.A., D. Randall, and W.B. Rossow, and J.L. Schramm, 1996: Overview of arctic cloud and radiation characteristics. *J. Clim.*, 9, 1731-1764.
41. Webster, P.J., C.A. Clayson, and J.A. Curry, 1996: Clouds, radiation, and the diurnal cycle of sea surface temperature in the tropical western Pacific. *J. Clim.*, 9, 1712-1730.
42. Considine, G. and J.A. Curry, 1996: A statistical model of drop size spectra for stratocumulus clouds. *Quart. J. Roy. Meteor. Soc.*, 122, 611-634.
43. Sheu, R.-S., J. A. Curry, and G. Liu, 1996: Satellite retrieval of tropical rainfall using ISCCP analyses and microwave measurements. *J. Geophys. Res.*, 101, 21291-21301.
44. Liu, G., J.A. Curry, 1996: Large-scale cloud features during winter in the north Atlantic Ocean determined from SSM/I and SSM/T2 observations. *J. Geophys. Res.*, 101, 7019-7032.
45. Clayson, C.A. and J.A. Curry, 1996: Determination of surface turbulent fluxes for TOGA COARE: Comparison of satellite retrievals and in situ measurements. *J. Geophys. Res.*, 101, 28,503-28,513.
46. Clayson, C.A., C.W. Fairall, and J.A. Curry, 1996: Evaluation of turbulent fluxes at the ocean surface using surface renewal theory. *J. Geophys. Res.*, 101, 28,515-28,528.
47. Sheu, R.-S., J.A. Curry, and G. Liu, 1997: Vertical Stratification of Tropical Cloud Properties as Determined from Satellite. *J. Geophys. Res.*, 102, 4231-4246.
48. Duane, G. and J.A. Curry, 1997: Entropy of a convecting water-air system and the interpretation of cloud morphogenesis. *Quart. J. Roy. Meteorol. Soc.*, 123, 605-629
49. Schramm, J.L., M. Holland, J.A. Curry, and E.E. Ebert, 1997: Modeling the thermodynamics of a distribution of sea ice thicknesses. Part I: Sensitivity to ice thickness resolution. *J. Geophys. Res.*, 102, 23079-23092.
50. Holland, M., J.A. Curry, J.L. Schramm, 1997: Modeling the thermodynamics of distribution of sea ice thicknesses. Part II: Ice/ocean interactions. *J. Geophys. Res.*, 102, 23093-23108.
51. Pinto, J.O., J.A. Curry, and C.W. Fairall, 1997: Radiative characteristics of the Arctic atmosphere during spring as inferred from ground-based measurements. *J. Geophys. Res.*, 102, 6941-6952.
52. Liu, G. and J.A. Curry, 1997: Precipitation characteristics in the GIN Seas determined using satellite microwave data. *J. Geophys. Res.*, 102, 13987-13998.
53. Curry, J.A., J.O. Pinto, T. Benner, and M. Tschudi, 1997: Evolution of the cloudy boundary layer during the autumnal freezing of the Beaufort Sea. *J. Geophys. Res.*, 102, 13851-13860.
54. Pinto, J.O. and J.A. Curry, 1997: Role of radiative transfer in the modeled mesoscale development

- of summertime arctic stratus. *J. Geophys. Res.*, 102, 13861-13872.
55. Alam, A. and J.A. Curry, 1997: Determination of surface turbulent fluxes over leads in arctic sea ice. *J. Geophys. Res.*, 102, 3331-3344.
  56. Considine, G., J.A. Curry, and B.A. Wielicki, 1997: Modeling cloud fraction and horizontal variability in boundary layer clouds. *J. Geophys. Res.*, 102, 13
  57. Schramm, J.L., M.M. Holland, and J.A. Curry, 1997: Applications of a single-column ice/ocean model understanding the mass balance of sea ice and snow in the Central Arctic. *Ann. Glaciol.*, 25, 287-291.
  58. Holland, M.M., J.L. Schramm, and J.A. Curry, 1997: *Thermodynamic feedback processes in a single-column sea ice/ocean model.* *Ann. Glaciol.*, 25, 327-332.
  59. Arbetter, T., J.A. Curry, M.M. Holland, and J. M. Maslanik, 1997: Response of sea ice models to perturbations in surface heat flux. *Ann. Glaciol.*, 25, 193-197.
  60. Tschudi, M., J.A. Curry, and J.M. Maslanik, 1997: Determination of areal surface feature coverage in the Beaufort Sea using aircraft video data. *Ann. Glaciol.*, 25, 434-438.
  61. Considine, G. and J.A. Curry, 1998: Role of entrainment and droplet sedimentation on the microphysical structure in stratus and stratocumulus clouds. *Quart. J. Roy. Meteorol. Soc.*, 24, 123-150.
  62. Randall, D., J. A. Curry, et al., 1998: Outlook for Large-Scale Modelling of Atmosphere Ice-Ocean Interactions in the Arctic. *Bull. Amer. Meteor. Soc.*, 70, 197-219.
  63. Liu, G. and J.A. Curry, 1998: Remote sensing of ice water characteristics in tropical clouds using aircraft microwave measurements. *J. Appl. Meteor.*, 37, 337-355.
  64. Liu, G. and J. A. Curry, 1998: An investigation of the relationship between emission and scattering signals in SSM/I data. *J. Atmos. Sci.*, 55, 1628-1643.
  65. Alam, A. and J.A. Curry, 1998: Evolution of new ice and turbulent fluxes from freezing Arctic leads. *J. Geophys. Res.*, 103, 15,783-15,802.
  66. Benner, T.C. and J.A. Curry, 1998: Characteristics of small tropical cumulus clouds and their impact on the environment. *J. Geophys. Res.*, 103, 28753-28768.
  67. Webster, P.J. and J.A. Curry, 1998: The Oceans and Weather. *Scien. Amer.*, 9, 38-43.
  68. Stamnes, K., Ellingson, R.G., J.A. Curry, J.E. Walsh, and B. D. Zak, 1999: Review of science issues and deployment strategies for the North Slope of Alaska/Adjacent Arctic Ocean (NSA/AAO) ARM site. *J. Climate*, 12, 46-63.
  69. Pinto, J.O., J.A. Curry, and A.H. Lynch, 1999: Modeling clouds and radiation for the November 1997 period of SHEBA using a column climate model. *J. Geophys. Res.*, 104, 6661-6678.
  70. Liu, G. and J.A. Curry, 1999: Tropical ice water amount and its relations to other atmospheric hydrological parameters as inferred from satellite data *J. Appl. Meteor.*, 38, 1182-1194.
  71. Khvorostyanov, V.I., and J.A. Curry, 1999: A simple analytical model of aerosol properties with account for hygroscopic growth. Part I: Equilibrium size spectra and CCN activity spectra. *J. Geophys. Res.*, 104, 2163-2174.
  72. Khvorostyanov, V.I., and J.A. Curry, 1999: A simple analytical model of aerosol properties with account for hygroscopic growth. Part II: Scattering and absorption coefficients. *J. Geophys. Res.*, 104, 2175-2184.
  73. Perovich, D. K., E.L. Andreas, J.A. Curry, et al., 1999: Year on ice gives climate insights. *EOS*, 80, 481.
  74. Khvorostyanov, V.I. and J.A. Curry, 1999: Theory of Stochastic Condensation in Clouds. Part I: A General Kinetic Equation. *J. Atmos. Sci.*, 56, 3985-3996.
  75. Khvorostyanov, V.I. and J.A. Curry, 1999: Theory of Stochastic Condensation in Clouds. Part II: Analytical Solutions of the Gamma-Distribution Type. *J. Atmos. Sci.*, 56, 3997-4013.
  76. Arbetter, T.E., J.A. Curry, and J.A. Maslanik, 1999: On the effects of rheology and ice thickness distribution in a dynamic-thermodynamic sea ice model. *J. Phys. Oceanog.*, 29, 2656-2670
  77. Holland, M.M. and J.A. Curry, 1999: The role of different physical process in determining the interdecadal variability of Arctic sea ice. *J. Climate*, 12, 3319-3330.

78. Curry, J.A. et al., 1999: High-resolution satellite-derived dataset of the ocean surface fluxes of heat, freshwater and momentum for the TOGA COARE IOP. *Bull. Amer. Meteorol. Soc.*, 80, 2059-2080.
79. Kosovic, B., and J.A. Curry, 2000: A quasi steady state of a stable stratified atmospheric boundary layer: a large-eddy simulation study. *J. Atmos. Sci.*, 57, 1052-1068.
81. Jiang, H. W.R. Cotton, J.O. Pinto, J.A. Curry, and M.J. Weissbluth, 2000: Sensitivity of mixed-phase Arctic stratocumulus to ice forming nuclei and large-scale heat and moisture advection. *J. Atmos. Sci.*, 57, 2105-2117..
82. Liu, G. and J.A. Curry, 2000: Determination of ice water path and mass median particle size using multichannel microwave measurements. *J. Appl. Meteor.*, 39, 1318-1329.
83. Schramm, J.L., G. M. Flato, and J.A. Curry, 2000: Towards the modeling of enhanced basal melting in ridge keels. *J. Geophys. Res.*, 105, 14081-14092.
84. Khvorostyanov, V.I. and J.A. Curry, 2000: A New Theory of Heterogeneous Ice Nucleation for Application in Cloud and Climate Models. *Geophys. Res. Lett.*, 27, 4081-4084.
85. Curry, J.A., J.L. Schramm, D. Perovich, and J.O. Pinto, 2001: Application of SHEBA/FIRE data to evaluation of sea ice surface albedo parameterizations. *J. Geophys. Res.*, 106, 15345-15356.
86. Pinto, J.O., J.A. Curry, and J. Intrieri, 2001: Cloud-aerosol interactions during autumn over the Beaufort Sea. *J. Geophys. Res.*, 106, 15077-15098.
87. Haggerty, J.A., and J.A. Curry, 2001: Microwave emissivity of sea ice estimated from aircraft measurements during FIRE-SHEBA. *J. Geophys. Res.*, 106, 15265-15278.
88. Tschudi, M., J.A. Curry, and J.M. Maslanik, 2001: Airborne observations of summertime surface features and their effect on surface albedo during SHEBA. *J. Geophys. Res.*, 106, 15335-15344.
89. Benner, T., J.A. Curry, and J.O. Pinto, 2001: Radiative transfer in the summertime Arctic. *J. Geophys. Res.*, 106, 15173-15184.
90. Girard, E. and J.A. Curry, 2001: Simulation of arctic low-level clouds observed during the FIRE Arctic Clouds Experiment using a new bulk microphysics scheme. *J. Geophys. Res.*, 106, 15139-15154.
91. Khvorostyanov, V.I., J.A. Curry et al., 2001: Evaluation of an explicit microphysics scheme using observations of an upper-level cloud system observed during FIRE.ACE. *J. Geophys. Res.*, 106, 15099-15112.
92. Curry, J.A., 2001: Introduction to special section: FIRE Arctic Clouds Experiment. *J. Geophys. Res.*, 106, 14985-14989
93. Holland, G.H., P.J. Webster, J.A. Curry, et al., 2001: The Aerosonde robotic aircraft: A new paradigm for environmental observations. *Bull. Amer. Meteorol. Soc.*, 82, 889-901.
94. Lin, B., P. Minnis, A. Fan, J.A. Curry, et al., 2001: Comparison of cloud liquid water paths derived from in situ and microwave radiometer data taken during the SHEBA/FIREACE. *Geophys. Res. Lett.*, 28, 975-978
95. Liu, G., J.A. Curry, J.A. Haggerty, and Y. Fu, 2001: Retrieval and Characterization of Cloud Liquid Water Path Using Airborne Passive Microwave Data during INDOEX. *J. Geophys. Res.*, 106, 28,719-28,730.
96. Tschudi, M., J.A. Curry, and J. Maslanik, 2002: Characterization of springtime leads in the Arctic Ocean from airborne observations during FIRE/SHEBA. *J. Geophys. Res.*, 107, art no. 8034
97. Uttal, T., Curry, J.A., and 26 others, 2002: Surface Heat Budget of the Arctic Ocean. *Bull. Amer. Meteor. Soc.*, 83, 255-275.
98. Curry, J.A. and A.H. Lynch, 2002: Comparing Arctic Regional Climate Models. *EOS*, Trans. Amer. Geophys. Union, 83, p 87.
99. Pinto, J.O., A. Alam., J.A. Maslanik, and J.A. Curry, 2003: Characteristics and atmospheric footprint of springtime leads at SHEBA. *J. Geophys. Res.*, 108, art no 8051..
100. Haggerty, J.A., J.A. Maslanik, and J.A. Curry, 2003: Heterogeneity of sea ice surface temperature at SHEBA from aircraft measurements. *J. Geophys. Res.*, 108, art no. 8052.
101. Curry, J.A., J.L. Schramm, A. Alam, R. Reeder, T.E. Arbetter, P. Guest, 2002: Evaluation of data sets used to force sea ice models in the Arctic Ocean. *J. Geophys Res.*, 107, art. no 3102.

102. Haggerty, J.A., J.A. Curry, and G. Liu, 2002: The potential for estimating cloud liquid water path over sea ice from airborne passive microwave measurements. *J. Geophys. Res.*, 107, art. No. 4007.
103. Randall, D., S. Krueger, C. Bretherton, J.A. Curry, et al., 2003: Confronting Models with Data: The GEWEX Cloud System Study. *Bull. Amer. Meteor. Soc.*, 84, 455-469
104. Khvorostyanov, V.I. and J.A. Curry, 2002: Terminal Velocities of Droplets and Crystals: Power Laws with Continuous Parameters Over the Size Spectrum. *J. Atmos. Sci.*, 59, 1872-1884.
105. Khvorostyanov, V.I., J.A. Curry, I. Gultepe, 2003: Simulations and observations of springtime cloud over the Cape Bathurst polynya. *J. Geophys. Res.*, 108 Art. No. 4296
106. Liu, G. and J.A. Curry, 2003: Observation and Interpretation of Microwave "Hot Spots" Over the Arctic Ocean During Winter. *J. Appl. Met.*, 42, 51-64.
107. Liu, G., H. Shao, J.A. Coakley, J.A. Curry, et al., 2003: Retrieval of Cloud Droplet Size from Visible and Microwave Radiometric Measurements during INDOEX: Implication to Aerosols Indirect Radiative Effect. *J. Geophys. Res.*, 108 (D1): art. no. 4006.
108. Morrison, H., M. Shupe, J.A. Curry, 2003: Evaluation of a bulk microphysical scheme using SHEBA data. *J. Geophys. Res.*, 108, art no. 4225.
109. Brunke, M.A., C.W. Fairall, X. Zeng, L. Eymard, J.A. Curry, 2003: Which bulk aerodynamic algorithms are least problematic in computing ocean surface turbulent fluxes? *J. Clim.*, 15, 619-635.
110. Liu, J.P., J.A. Curry, and D.G. Martinson, 2004: Interpretation of recent Antarctic sea ice variability. *Geophys. Res. Lett.*, 31, Art. No. L02205.
111. Khvorostyanov, V.I., J.A. Curry, 2004: Toward the theory of heterogeneous ice nucleation. Part I: Critical radius, energy and nucleation rate. *J. Atmos. Sci.*, 61, 2676-2691.
112. Curry, J.A., J.M. Maslanik, G.J. Holland, and J.O. Pinto, 2004: Applications of Aerosondes in the Arctic. *Bull. Amer. Meteorol. Soc.*, 85, 1855-1861.
113. Agudelo, P.A. and J.A. Curry, 2004: Analysis of spatial distribution in tropospheric temperature trends. *Geophys. Res. Lett.*, 31, Art. No. L222207.
114. Inoue, J. and J.A. Curry, 2004: Application of Aerosondes to high-resolution observations of sea surface temperature over Barrow Canyon. *Geophys. Res. Lett.*, 31, Art. No. L14312.
115. Liu, J.P., J.A. Curry and Y.Y. Hu, 2004: Recent Arctic sea ice variability: connections to the Arctic Oscillation and the ENSO. *Geophys. Res. Lett.*, 31, L09211.
116. Curry, J.A. and 22 others, 2004: SEAFUX. *Bull. Amer. Meteor. Soc.*, 85, 409-419.
117. Khvorostyanov, V.I. and J.A. Curry, 2004: On the Thermodynamic Theory of Freezing and Melting of Water and its Solutions: *J. Phys. Chem. A*, 108, 11073-11085.
118. Lynch, A.H., J. A. Curry, et al., 2004: Towards an integrated assessment of the impacts of extreme wind events on Barrow, Alaska. *Bull. Amer. Meteorol. Soc.*, 85, 209+
119. Khvorostyanov, V.I. and J.A. Curry, 2005: Toward the theory of heterogeneous ice nucleation. Part II: Parcel model simulations. *J. Atmos. Sci.*, 62, 261-284.
120. Mirocha, J.D., B. Kosovic, J.A. Curry, 2005: Vertical heat transfer in the lower atmosphere over the Arctic Ocean during clear sky periods. *Bound. Layer Meteorol.*, 117, 37-71.
121. Inoue, J., B. Kosovic and J.A. Curry, 2005: Evolution of a storm-driven boundary layer in the Arctic. *Bound. Layer Meteorol.*, 117, 213-230.
122. Morrison, H., J.A. Curry, V.I. Khvorostyanov, 2005: A new double-moment microphysics parameterization. Part I: Description. *J. Atmos. Sci.*, 62, 1665-1677.
123. Morrison, H. J.A. Curry, et al., 2005: A new double-moment microphysics parameter-ization. Part 2: Application to Arctic stratiform clouds. *J. Atmos. Sci.*, 62, 1678-1693.
124. Liu, J., J.A. Curry, W. B. Rossow, J.R. Key, X. Wang, 2005: Comparison of surface radiative flux data sets over the Arctic Ocean. *J. Geophys. Res.*, 110, Art. No. C02015.
125. Khvorostyanov, V.I., J.A. Curry, 2005: Fall Velocities of Hydrometeors in the Atmosphere: Refinements to a Continuous Quasi - Power Law. *J. Atmos. Sci.*, 62, 4343-4357.
126. Morrison, H., M. Shupe, J.O. Pinto, J.A. Curry, 2005: Possible role roles of ice nucleation mode and ice nuclei depletion in the extended lifetime of arctic mixed phase clouds. *Geophys. Res. Lett.*, 32 (18): Art. No. L18801.

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  195. Kravtsov, S., MG Wyatt, JA Curry, A Tsonis, 2014: Two contrasting views of multidecadal climate variability in the 20<sup>th</sup> century. *Geophys. Res. Lett.*, revisions under review.
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## Recent Invited Lectures

- American Physical Society Meeting, March 2014, Denver, *Causes and implications of the growing discrepancy between climate models and observations*
- Invited Participant, APS Climate Change Statement Workshop, New York City, January 2014, *Statement on the IPCC AR5 WGI Report*
- Invited talk, UK-US Workshop on Climate Science Needed to Support Robust Adaptation Decisions. Feb 2014, Atlanta, *Generating possibility distributions of scenarios for regional climate change*
- Invited talk, Workshop on the Roles of Climate Models: Epistemic, Ethical and Socio-political Perspectives Oct 2013, Eindhoven, The Netherlands, *A 21<sup>st</sup> century perspective on climate models from a climate scientist*
- Plenary talk, European Centre for Medium Range Weather Forecasting Annual Users Meeting, June 7, 2013
- Invited talk, American Geophysical Union Fall meeting: *The impact of declining Arctic sea ice on northern hemisphere winter weather.* December 7, 2012, San Francisco.
- Invited talk, Royal Society Workshop on Handling Uncertainty in Weather and Climate Prediction Applications: *Climate models: fit for what purpose?* October 5, 2012, London.
- Plenary invited talk, American Physical Society April meeting: *Berkeley Earth Temperature Project.* April 3, 2012, Atlanta.
- DOE BERAC, invited lecture: *What can we learn from climate models?* February 27, 2012, Washington DC.
- U.N. InterAcademy Council (IAC) Norway meeting: *Research integrity and scientific responsibility.* January 26, 2012
- Invited talk, American Geophysical Union Fall meeting: *Engaging the public on climate change.* December 11, 2011, San Francisco.
- Keynote address at Santa Fe Conference on Climate Change: *Climate Science and the Uncertainty Monster.* November 2, 2011
- Invited talk, Santa Fe Conference on Climate Change: *A critical look at the IPCC AR4 attribution argument.* November 3, 2011
- Victor Starr Memorial Lecture at MIT: *Climate Science and the Uncertainty Monster.* September 30, 2011, Boston
- Invited talk, American Chemical Society Annual Meeting (Denver): *Climate Science and the Uncertainty Monster.* August 28, 2011, Denver

## Research Grants and Contracts (last 10 years)

- Application of global weather and climate model output to the design and operation of wind energy systems. DOE STTR Phase II, \$980K, 4/22/13 – 4/21/15. (PI)
- Integrated analysis of atmospheric water cycle in intense marine storms. NASA, \$189K 11/1/12-10/31/14. (PI)
- Application of global weather and climate model output to the design and operation of wind energy systems. DOE STTR Phase I, \$150K, 2/19/11 – 11/19/11. (PI)
- Climatology of African Easterly Waves. NOAA, 8/1/10 – 7/31/13, \$240K (PI)
- Impact of Marine and Dust Aerosols on Atlantic Tropical Cyclone Development. NSF, \$349,901, 4/1/11-3/31/14 (co-PI).
- Estimating the tropospheric BrO budgets from satellite measurements. NASA, \$50K, 1/12/11-1/11/13 (PI)
- Impact of storms on ocean surface turbulent fluxes, NOAA, 8/1/10 – 7/31/11, \$100K, (PI)

- Impact of Marine and Dust Aerosols on Atlantic Tropical Cyclone Development. NSF, \$349,901, 4/1/11-3/31/14 (co-PI).
- Impact of Aerosols on the Arctic Hydrological Cycle. NASA, 06/01/07-05/31/10, \$480,000 (co-PI).
- Spatio-temporal Variability of Aerosol Load in the Tropics: Interaction with Precipitation and the Radiation Budget. NOAA, 5/01/08-4/30/11, \$366,000 (co-PI)
- Towards the Understanding and Parameterization of High Latitude Cloud and Radiation Processes. DOE ARM, 12/01/02-11/30/08, \$720,000 (PI)
- Global analysis of ocean surface fluxes of heat and freshwater: satellite products, NWP analyses, and CMIP simulations. NASA, 10/1/05-9/30/10, \$1.4M (PI).
- Parameterization of cloud particle activation and diffusional growth. NASA, 11/05-10/08, \$450,000.
- UAV Systems Analysis for Earth Observations: Education and Outreach. NASA, 3/05-3/08, \$350,000 (PI)
- Arctic Regional Climate Model Intercomparison Project: Evaluation and Interpretation Using Data Products from FIRE.ACE. NASA, 12/03-12/07, \$525,000. (PI)
- Applications of Aerosondes to long-term measurements of the atmosphere and sea ice surface in the Beaufort/Chukchi sector of the Arctic Ocean, NSF, 9/1/99-8/31/06, \$3,997,402. (PI)
- Climate variability of the Alaskan North Slope Coastal Region: Observations, simulations, and integrated assessment, NSF/NOAA, 1/1/01-1/1/05, \$2,404,308 (Co-PI)

## **EDUCATION/TEACHING**

### **Courses Taught**

- Global Change Seminar (Georgia Tech, grad/undergrad)
- Hurricanes (Georgia Tech, grad/undergrad)
- Thermodynamics of Atmospheres and Oceans (Georgia Tech, graduate)
- Thermodynamics of the Earth System (Georgia Tech, undergraduate)
- Preparing Future Faculty (University of Colorado; graduate)
- Thermodynamics of Atmospheres and Oceans (University of Colorado; graduate)
- Remote Sensing of the Atmosphere and Ocean (University of Colorado; graduate)
- Aircraft Probing of the Lower Atmosphere (University of Colorado; graduate)
- Engineering Thermodynamics and Heat Transfer (University of Colorado; undergraduate)
- Engineering Senior Design Lab (University of Colorado; undergraduate)
- Survey of Meteorology (Purdue University; undergraduate)
- Atmospheric Thermodynamics (Purdue University, Penn State University; undergraduate)
- Atmospheric Physics (Purdue University, Penn State University; undergraduate)
- Cloud and Precipitation Physics (Purdue University; graduate)

### **Supervision of students**

- M.S. graduates: 29 total
- Ph.D. graduates: 22 total
- Postdocs and research scientists supervised: 15 total

## ENGAGEMENT in SCIENCE and TECHNOLOGY POLICY

### Congressional Testimony

- Testimony, Senate Environment and Public Works, “President’s Climate Action Plan,” 1/16/14 [http://www.epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore\\_id=07472bb4-3eeb-42da-a49d-964165860275](http://www.epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=07472bb4-3eeb-42da-a49d-964165860275)
- Testimony, House Subcommittee on Energy & Environment, “Policy Relevant Climate Issues in Context”, 4/26/13 <http://curryja.files.wordpress.com/2013/04/curry-testimony-2013-il.pdf>
- Testimony, House Subcommittee on Energy & Environment, “Rational Discussion of Climate Change: the Science, the Evidence, the Response,” 11/17/10 <http://curryja.files.wordpress.com/2013/02/curry-epw-testimony.pdf>
- Testimony, House Select Committee on Energy Independence and Global Warming, “Dangerous Climate Change,” 4/26/07 <http://curryja.files.wordpress.com/2013/02/energy-curry-testimony.pdf>
- Testimony, House Reform Committee, “Hurricanes and Global Warming,” 7/20/06 <http://curry.eas.gatech.edu/climate/pdf/testimony-curry.pdf>

### Local/regional engagement

- Advisory Council, Florida Hurricane Catastrophe Fund
- Consulting for Florida Power & Light to increase resilience of the electric grid to hurricanes
- Organizer, Georgia Climate Change Summit 05/06/08 <http://climatesummit.gatech.edu>
- Participant, Atlanta Regional Commission Climate Change Workshop, “Local Warming: Consequences of Climate Change for Atlanta.” [http://curry.eas.gatech.edu/climate/pdf/atlanta\\_rev.pdf](http://curry.eas.gatech.edu/climate/pdf/atlanta_rev.pdf)

### Essays on the Integrity of Science

- Opinion: Can scientists rebuild trust in Climate Science? *Physics Today*, 2/10/10 [http://www.physicstoday.org/daily\\_edition/politics\\_and\\_policy/1.2531584](http://www.physicstoday.org/daily_edition/politics_and_policy/1.2531584)
- An open letter to graduate students and young scientists in fields related to climate research. NYTimes <http://dotearth.blogs.nytimes.com/2009/11/27/a-climate-scientist-on-climate-skeptics/>
- Research Integrity and Scientific Responsibility. U.N. InterAcademy Council (IAC) Norway 1/26/12 <http://judithcurry.com/2012/01/26/questions-on-research-integrity-and-scientific-responsibility-part-ii/>

### Weblog

- Proprietor of the weblog Climate Etc. <http://www.judithcurry.com>  
Climate Etc. provides a forum for climate researchers, academics and technical experts from other fields, citizen scientists, and the interested public to engage in a discussion on topics related to climate science and the science-policy interface.