

Curriculum Vitae

Philip Sura

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General Information

University address: Department of Earth, Ocean & Atmospheric Sciences
College of Arts and Sciences
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Florida State University
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Professional Preparation

- 2000 Doctor of Science, University of Hamburg, Germany. Major: Geosciences. Meteorology and Physical Oceanography. Supervisor: Prof. Klaus Fraedrich. Magna cum laude.
- 1997 M.S., University of Hamburg, Germany. Major: Physical Oceanography. Supervisor: Prof. Klaus Fraedrich. Magna cum laude.

Professional Experience

- 2012–present Associate Professor, Florida State University.
- 2008–2012 Assistant Professor, Department of Earth, Ocean & Atmospheric Sciences, Florida State University.
- 2002–2008 Research Scientist, NOAA-CIRES Climate Diagnostics Center, Boulder, Colorado.
- 2001–2002 Postdoctoral Researcher, Scripps Institution of Oceanography, University of California, San Diego.
- 1998–2001 Research Scientist, Department of Meteorology, University of Hamburg.

Visiting Professorship(s)

2012 Department of Meteorology, Stockholm University, Sweden.

Fellowship(s)

European Science Foundation Research-Fellow at the Istituto di Cosmogeofisica, Torino, Italy (1998).

Current Membership in Professional Organizations

American Geophysical Union (AGU)
American Meteorological Society (AMS)

Teaching

Courses Taught

Meteorological Computations (MET3220-C)
Advanced Topics in Climatology (MET6155)
General Meteorology (MET2700)
Doctoral Seminar (MET6930)
Master's Seminar (MET5930)

New Course Development

Linking Weather and Climate (2008)

Doctoral Committee Chair

Perron, M., doctoral candidate.
West, R., doctoral student.

Doctoral Committee Member

Shin, Chul-Su, graduate. (2012).
Roberts, J. B., graduate. (2011).
Koorehpazan Dezfuli, A., graduate. (2011).
Koorehpazan, D. A., graduate. (2011).
Balwada, D., doctoral candidate.

Feng, J., doctoral candidate.
Girihagama, L. N. K., doctoral candidate.
Halperin, D. J., doctoral candidate.
Kozar, M. E., doctoral candidate.
Michael, J. P., doctoral candidate.
Nag, B., doctoral candidate.
Sejas, S. A., doctoral candidate.
Simons, E. G., doctoral candidate.
Sims, E. M., doctoral candidate.
Smith, C. A., doctoral candidate.
Hughes, P. J., doctoral candidate. (2013).
Fraza, E., doctoral student.
Preston, A. D., doctoral student.
Ren, Y., doctoral student.
Truchelut, R. E. J., doctoral student.
Weihs, R. R., doctoral student.

Doctoral Committee University Representative

Wilson, A. M., graduate. (2013).
Liang, T., doctoral candidate.

Master's Committee Chair

Christophersen, J. A., graduate. (2013).
Duncan, J. B., graduate. (2013).
West, R. R., graduate. (2012).
Perron, M., graduate. (2010).
Taeger, J. J., graduate. (2010).
Christman, R. E., student.

Master's Committee Member

Nedbor-Gross, R., graduate. (2013).
Day, Lindsey Rose-Michelle, graduate. (2013).
Feng, J., graduate. (2012).
Preston, A. D., graduate. (2012).
Visco, T., graduate. (2012).
Collier, C. E., graduate. (2012).
Farmer, B. R. A., graduate. (2012).
Halperin, D. J., graduate. (2012).
Tamurian, Z. M., graduate. (2012).
Tamurian, Z. N., graduate. (2012).

Weih, R. R., graduate. (2012).
Scott, J. P., graduate. (2011).
Frumkin, A. J., graduate. (2011).
Strazzo, S. E., graduate. (2011).
Williams, M., graduate. (2010).
Murray, D. A., graduate. (2009).
Wolf, L., graduate. (2009).
Albert, O. S., student.
Avery, C. M., student.
Clark, M. T., student.
Farmer, B. R. A., student.
Halperin, D. J., student.
Rachel Weih, student.
Ren, Y., student.
Rivard, J. M., student.
Seitz, C. D., student.
Barton, C. A., student. (2012).
Schaaf, B. M., student. (2012).

Research and Original Creative Work

Publications

Invited Journal Articles

Sura, P. (2011). A General Perspective of Extreme Events in Weather and Climate. *Atmos. Res*, 101, 1-21.

Sura, P., & Sardeshmukh, P. D. (2009). A Global View of Air-Sea Thermal Coupling and Related Non-Gaussian SST Variability. *Atmos. Res*, 94, 140-149.

Refereed Journal Articles

West, R., & Sura, P. (submitted). Power law behavior of atmospheric variability. *J. Atmos. Sci.*
Manuscript submitted for publication.

Worsnop, R., Griffin, M., Bourassa, M., Stefanova, L., & Sura, P. (submitted). Multidecadal Variations of Extreme Temperatures in the Southeastern United States. *J. Climate*.
Manuscript submitted for publication.

Halperin, D. J., Fuelberg, H. E., Hart, R. E., Pasch, R. J., Cossuth, J. H., & Sura, P. (in press). An evaluation of tropical cyclone genesis forecasts from global numerical models. *Weather and Forecasting*.

- Perron, M., & Sura, P. (2013). Climatology of non-Gaussian atmospheric statistics. *J. Climate*, *26*, 1063-1083.
- Stefanova, L., Sura, P., & Griffin, M. (2013). Quantifying the non-Gaussianity of wintertime daily maximum and minimum temperatures in the Southeast United States. *J. Climate*, *26*, 838-850.
- Sura, P. (2010). On Non-Gaussian SST Variability in the Gulf Stream and Other Strong Currents. *Ocean Dynamics*, *60*, 155-170.
- Sura, P., & Gille, S. T. (2010). Stochastic Dynamics of Sea Surface Height Variability. *J. Phys. Oceanogr*, *40*, 1582-1596.
- Sura, P., & Perron, M. (2010). Extreme Events and the General Circulation: Observations and Stochastic Model Dynamics. *J. Atmos. Sci*, *67*, 2785-2804.
- Sardeshmukh, P. D., & Sura, P. (2009). Reconciling non-Gaussian Climate Statistics with Linear Dynamics. *J. Climate*, *22*, 1193-1207.
- Sura, P., & Sun, D.-Z. (2009). Ocean-Atmosphere Coupling. *Atmos. Res*, *94*, 1-2.
- Sura, P., & Newman, M. (2008). The Impact of Rapid Wind Variability upon Air-Sea Thermal Coupling. *J. Climate*, *21*, 621-637.
- Sura, P., & Sardeshmukh, P. D. (2008). A Global View of Non-Gaussian SST Variability. *J. Phys. Oceanogr*, *38*, 639-647.
- Sardeshmukh, P. D., & Sura, P. (2007). Multi-Scale Impacts of Variable Heating in Climate. *J. Climate*, *20*, 5677-5695.
- Sura, P., Newman, M., & Alexander, M. A. (2006). Daily to Decadal Sea Surface Temperature Variability Driven by State-Dependent Stochastic Heat Fluxes. *J. Phys. Oceanogr*, *36*, 1940-1958.
- Sura, P., Newman, M., Penland, C., & Sardeshmukh, P. D. (2005). Multiplicative Noise and Non-Gaussianity: A Paradigm for Atmospheric Regimes? *J. Atmos. Sci*, *62*, 1391-1409.
- Sura, P. (2003). Stochastic Analysis of Southern and Pacific Ocean Sea Surface Winds. *J. Atmos. Sci*, *60*, 654-666.
- Sura, P., & Gille, S. T. (2003). Interpreting Wind-Driven Southern Ocean Variability in a Stochastic Framework. *J. Mar. Res*, *61*, 313-334.
- Sura, P. (2002). Noise-Induced Transitions in a Barotropic Beta-Plane Channel. *J. Atmos. Sci*, *59*, 97-110.

Sura, P., & Barsugli, J. J. (2002). A Note on Estimating Drift and Diffusion Parameters from Timeseries. *Phys. Lett. A*, 305, 304-311.

Sura, P., & Penland, C. (2002). Sensitivity of a Double-Gyre Ocean Model to Details of Stochastic Forcing. *Ocean Modelling*, 4, 327-345.

Sura, P., Fraedrich, K., & Lunkeit, F. (2001). Regime Transitions in a Stochastically Forced Double-Gyre Model. *J. Phys. Oceanogr*, 31, 411-426.

Sura, P., Lunkeit, F., & Fraedrich, K. (2000). Decadal Variability in a Simplified Wind-Driven Ocean Model. *J. Phys. Oceanogr*, 30, 1917-1930.

Invited Book Chapters

Sura, P. (2013). Stochastic models of climate extremes: Theory and observations. In S. Sorooshian, D. Easterling, A. AghaKouchak, S. Schubert, K. Hsu (Ed.), *Extremes in a Changing Climate - Detection, Analysis & Uncertainty* (pp. 181-222). Springer-Verlag.

Invited Encyclopedia Entries

Sura, P. (in press). Extreme Climate Events. In Wang, Y. Q. (Ed.), *Encyclopedia of Natural Resources*. Taylor & Francis Group.

Refereed Proceedings

Penland, C., & Sura, P. (2005). Sensitivity of an Ocean Model to Details of Stochastic Forcing. In *Proceedings of the Workshop on Representation of Sub-Grid Processes Using Stochastic Dynamic Models*. European Centre for Medium-Range Weather Forecasts (ECMWF).

Invited Reviews

Sura, P. (2010). Book Review of "Stochastic Physics and Climate Modelling" by Tim Palmer and Paul Williams (Eds.), 2010, Cambridge University Press. *Bulletin of the American Meteorological Society*, 91, 1417-1419.

Presentations

Invited Presentations at Conferences

- Sura, P. (presented 2012, January). *Stochastic Models of Climate Extremes: Theory and Observations*. Presentation at AMS General Meeting, American Meteorological Society, New Orleans, Louisiana. (International)
- Sura, P. G. (presented 2012, January). *Stochastic Models of Climate Extremes: Theory and Observations*. Presentation at AMS General Meeting, American Meteorological Society, New Orleans, Louisiana. (International)
- Sura, P. (presented 2010, May). *A General Perspective of Extreme Events in Climate*. Presentation at General Assembly of the European Geosciences Union, European Geosciences Union (EGU), Vienna, Austria. (International)
- Sura, P. (presented 2010, May). *Extreme Events and the General Circulation of the Atmosphere: Dynamics and Observations*. Presentation at General Assembly of the European Geosciences Union, European Geosciences Union (EGU), Vienna, Austria. (International)
- Sura, P. (presented 2009, March). *Reconciling Non-Gaussian Atmosphere-Ocean Statistics with Linear Dynamics*. Presentation at SIAM Conference on Computational Science and Engineering, Society for Industrial and Applied Mathematics (SIAM), Miami, Florida. (International)
- Sura, P. (presented 2006, December). *The Impact of Rapid Wind Variability on Sea Surface Temperatures and Atmosphere-Ocean Coupling*. Presentation at AGU Fall Meeting, American Geophysical Union (AGU), San Francisco, California. (International)
- Sura, P. (presented 2006, April). *On Non-Gaussianity and Stochastic Modeling in Geophysics*. Presentation at Third EGU General Assembly, European Geosciences Union (EGU), Vienna, Austria. (International)
- Sura, P. (presented 2004, April). *Multiplicative Noise and Non-Gaussianity: A Paradigm for Atmospheric Regimes?* Presentation at First EGU General Assembly, European Geosciences Union (EGU), Nice, France. (International)
- Sura, P. (presented 2004). *Multiplicative Noise and Non-Gaussianity: A Paradigm for Atmospheric Regimes?* Presentation at 5th AIMS International Dynamical Systems Conference, American Institute of Mathematical Sciences (AIMS), Pomona, California. (International)

Refereed Presentations at Conferences

- Sura, P. G., Stefanova, L., Griffin, M., & Worsnop, R. (presented 2012, December). *Quantifying Observed Temperature Extremes in the Southeastern United States*. Poster presentation at AGU Fall Meeting, American Geosciences Union, San Francisco, California. (International)
- Stefanova, L., Sura, P., & Griffin, M. (presented 2011, July). *Quantifying the non-Gaussianity of wintertime daily maximum and minimum temperatures in the southeast United States*. Poster presentation at 19th AMS Conference on Applied Climatology, American Meteorological Society, Asheville, NC. (International)
- Sura, P. (presented 2009, June). *On non-Gaussian Sea Surface Height Variability*. Presentation at 17th AMS Conference on Atmospheric and Oceanic Fluid Dynamics, American Meteorological Society (AMS), Stowe, Vermont. (International)
- Sura, P. (presented 2007, June). *A Global View of Non-Gaussian SST Variability*. Presentation at 16th AMS Conference on Atmospheric and Oceanic Fluid Dynamics, American Meteorological Society (AMS), Santa Fe, New Mexico. (International)
- Sura, P. (presented 2007, June). *The Impact of Rapid Wind Variability upon Air-Sea Thermal Coupling*. Poster presentation at 16th AMS Conference on Atmospheric and Oceanic Fluid Dynamics, American Meteorological Society (AMS), Santa Fe, New Mexico. (International)
- Sura, P. (presented 2005). *Daily to Decadal Sea Surface Temperature Variability Driven by State-Dependent Stochastic Heat Fluxes*. Presentation at 15th AMS Conference on Atmospheric and Oceanic Fluid Dynamics, American Meteorological Society (AMS), Cambridge, MA. (International)
- Sura, P. (presented 2005). *Multiplicative Noise and Non-Gaussianity: A Paradigm for Atmospheric Regimes*. Presentation at 15th AMS Conference on Atmospheric and Oceanic Fluid Dynamics, American Meteorological Society (AMS), Cambridge, MA. (International)
- Sura, P. (presented 2004). *A Stochastic Perspective on Atmospheric Regime Behavior*. Presentation at 84th AMS Annual Meeting, American Meteorological Society (AMS), Seattle, WA. (International)
- Sura, P. (presented 2003). *A Stochastic Perspective on Atmospheric Regime Behavior*. Presentation at 28th Annual Climate Diagnostics Workshop, NOAA, Reno, NV. (International)
- Sura, P. (presented 2003). *Complex Rossby Wave Behavior Induced by Stochastic Parameterizations*. Presentation at 14th AMS Conference on Atmospheric and Oceanic

Fluid Dynamics, American Meteorological Society (AMS), San Antonio, TX.
(International)

Sura, P. (presented 2002). *Interpreting Wind-Driven Southern Ocean Variability in a Stochastic Framework*. Presentation at AGU Ocean Sciences Meeting, American Geophysical Union (AGU), Honolulu, HI. (International)

Sura, P. (presented 2001). *Stochastic Analysis of Southern and Pacific Ocean Sea Surface Winds*. Presentation at AGU Fall Meeting, American Geophysical Union (AGU), San Francisco, CA. (International)

Invited Lectures and Readings of Original Work

Sura, P. (2012, June). *A General Perspective of Extreme Events in Weather and Climate*.
Delivered at Department of Meteorology, Stockholm University, Sweden. (International)

Sura, P. (2011, May). *A General Perspective of Extreme Events in Weather and Climate*.
Delivered at Alfred-Wegener-Institute for Polar and Marine Research (AWI),
Bremerhaven, Germany. (International)

Sura, P. (2010, December). *A General Perspective of Extreme Events in Weather and Climate*.
Delivered at Department of Meteorology, University of Hamburg, Hamburg, Germany.
(International)

Sura, P. (2010, October). *Estimating the Black Swan Population: A Null Hypothesis for the
Statistics of Extreme Events in Weather and Climate*. Delivered at Florida Climate
Institute, Tallahassee, FL. (International)

Sura, P. (2009, November). *Stochastic Dynamics of Extreme Events in Climate*. Delivered at
Cha-Cha Days Workshop at the University of Central Florida, Orlando, Florida.
(Regional)

Sura, P. (2008, October). *Reconciling Non-Gaussian Climate Statistics With Linear Dynamics*.
Delivered at Department of Mathematics Seminar Series, Florida State University,
Tallahassee, FL. (International)

Sura, P. (2008, July). *On Non-Gaussian SST Variability in the Gulf Stream and Other Strong
Currents*. Delivered at Summer School on Stochastic and Probabilistic Methods for
Atmosphere, Ocean, and Climate Dynamics at the University of Victoria, Victoria,
Canada. (International)

Sura, P. (2007, October). *A Global View of Non-Gaussian SST Variability and Related Air-Sea
Thermal Coupling*. Delivered at Courant Institute of Mathematical Sciences, New York
University, New York City, New York. (International)

- Sura, P. (2007, May). *On Non-Gaussianity and Stochastic Modeling in Meteorology and Physical Oceanography*. Delivered at Department of Meteorology, Florida State University, Tallahassee, FL. (International)
- Sura, P. (2007, April). *A Global View of Non-Gaussian SST Variability*. Delivered at Workshop on Stochastic Dynamical Systems and Climate Modeling at the Banff International Research Station for Mathematical Innovation and Discovery, Banff, Canada. (International)
- Sura, P. (2007, April). *A Global View of Non-Gaussian SST Variability*. Delivered at Institute of Geophysics and Planetary Physics, University of California, Los Angeles, Los Angeles, California. (International)
- Sura, P. (2007, April). *A Global View of Non-Gaussian SST Variability*. Delivered at Scripps Institution of Oceanography, University of California, San Diego, San Diego, California. (International)
- Sura, P. (2007, April). *On Non-Gaussianity and Stochastic Modeling in Geophysics*. Delivered at EQECAT, Inc, Oakland, California. (International)
- Sura, P. (2006). *On Non-Gaussianity and Stochastic Modeling in Geophysics*. Delivered at Risk Management Solutions, Inc, London, UK. (International)
- Sura, P. (2006). *The Impact of Stochastic Heat Fluxes on Sea Surface Temperature Variability and Atmosphere-Ocean Coupling*. Delivered at NCAR Workshop on Multi-Scale Processes for Low Frequency Variability, Boulder, Colorado. (International)
- Sura, P. (2003). *A Stochastic Perspective on Oceanic and Atmospheric Regime Behavior*. Delivered at Woods Hole Oceanographic Institution, Woods Hole, Massachusetts. (International)
- Sura, P. (2002). *Multiplicative Noise in Atmospheric Dynamics: Modeling and Observations*. Delivered at Applied Mathematics Colloquium, Illinois Institute of Technology, Chicago, IL. (International)

Contracts and Grants

Contracts and Grants Funded

- Sura, P. (PI). (Aug 2009–Jul 2013). *Assessing Atmospheric Extreme Events in a Stochastic Framework*. Funded by National Science Foundation. (0903579). Total award \$366,378.
- Sura, P. (PI). (Feb 2008–Aug 2010). *Impact of Rapidly-Varying Heat Fluxes on Air-Sea Interac.* Funded by National Science Foundation. Total award \$123,159.

Service

Florida State University

FSU University Service

Member, Faculty Senate Library Committee (2012–present).

Member, Faculty Senate (2012–present).

FSU Department Service

Member, COAPS Academic Committee (2011–present).

Member, EOAS Computer Committee (2011–present).

Director, EOAS Graduate Studies (2011–present).

Acting Chair, Meteorology Graduate Admission Committee (2011–present).

Member, Meteorology Graduate Admission Committee (2009–present).

Member, Meteorology Computer Committee (2009–2010).

Member, Extreme Events in Climate Cluster Hiring Committee (2008–2009).

The Profession

Guest Editing for Refereed Journals

Sura, P. (Ed.). (2009, September). Ocean-Atmosphere Coupling [Special Issue]. *Atmospheric Research*, 94.

Editorial Board Membership(s)

Journal of Atmospheric Sciences (2012–present).

Guest Reviewer for Refereed Journals

Atmospheric Research (2000–present).

Atmospheric Science Letters (2000–present).

Bulletin of the American Meteorological Society (2000–present).

Climate Dynamics (2000–present).

Geophysical Research Letters (2000–present).

International Journal of Climatology (2000–present).

Journal of Atmospheric and Oceanic Technology (2000–present).

Journal of Climate (2000–present).

Journal of Marine Research (2000–present).

Journal of Physical Oceanography (2000–present).

Journal of the Atmospheric Sciences (2000–present).

Physica D (2000–present).

Physics Letters A (2000–present).

Reviewer or Panelist for Grant Applications

National Environment Research Council (UK) (2000–present).

National Science Foundation (2000–present).

NOAA (2000–present).