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Center for Ocean-Atmospheric Prediction Studies (COAPS)

The Florida State University (FSU)

Tallahassee, FL 32306-2840

1. EDUCATION

Ph.D. in Meteorology 2001 The Florida State University, Tallahassee, FL
Dissertation: *Sensitivity of seasonal forecasts to the parameterization of land-surface processes*
Advisor: Prof. T. N. Krishnamurti

M.S. in Meteorology 1996 The Florida State University, Tallahassee, FL
Thesis: *Onset of blocking and teleconnection lows from small-scale vorticity forcing*
Advisor: Prof. J. Ahlquist

B.S. in Physics 1993 Sofia University, Sofia, Bulgaria

2. EMPLOYMENT

2013-present	Associate Research Scientist	COAPS, FSU
2008-2013	Assistant Research Scientist	COAPS, FSU
2001-2008	Post Doctoral Research Associate	Krishnamurti Lab, Dept. of Meteorology, FSU
1993-2001	Graduate Research Assistant	Dept. of Meteorology, FSU

3. CONSULTING EXPERIENCE

2016-present	Scientific Consultant	US Fish and Wildlife Service
2001-2002	Scientific Consultant	Weather Predict Inc, Raleigh, NC

4. RESEARCH AREAS

Large-scale climate variability and links to regional climate and climate applications; Analysis and statistical modeling of environmental data; Climate downscaling and bias-correction; Climate projections; Climate information for ecology, hydrology, agriculture, health, and other natural and human systems.

5. TEACHING EXPERIENCE

Workshops and lectures in Tropical Meteorology; Numerical Methods; Time Series Analysis; Regional Climate Modeling; Historical Climate; Climate Variability and Change

6. SPECIALIZED TECHNICAL AND OTHER SKILLS

- [1] **Operating Systems:** Linux, Mac OS, Unix, Windows
- [2] **Programming Languages and Visualization/Analysis Software:** Awk, Bash Shell, FORTRAN, gnuplot, GrADS, Matlab, Microsoft Excel, R, XLSTAT
- [3] **Specialized Data Formats:** grib, NetCDF
- [4] **Languages:** English (fluent), Bulgarian (native), Russian (fluent), Spanish (moderate)

7. WORK PRODUCTS

7.1 PUBLISHED MANUSCRIPTS

- [1] Conlon KC, Kintziger KW, Jagger M, **Stefanova L**, Uejio CK, Konrad K, 2016: Working with climate projections to estimate disease burden: Perspectives from public health. *Int. J. Environ. Res. Public Health* **2016**, *13*(8), 804
- [2] Ramírez-Rodrigues MA, Alderman PD, **Stefanova L**, Cossani CM, 2016: The value of seasonal forecasts for irrigated, supplementary irrigated, and rainfed wheat cropping systems in northwest Mexico, *Agricultural Systems* *147*, 76-86
- [3] Cammarano D, Zierden D, **Stefanova L**, Asseng S, O'Brien JJ, Jones JW, 2015: Using historical climate observations to understand future climate change impacts. *Climate Change* *134* (1-2), 311-326
- [4] Wootten A, Smith K, Boyles R, Terando A, **Stefanova L**, Misra V, Smith III TJ, Blodgett D, and Semazzi F, 2014: Downscaled climate projections for the Southeast United States—Evaluation and use for ecological applications: *U.S. Geological Survey Open-File Report, 2014–1190*, 54 pp
- [5] LaRow T, **Stefanova L**, Seitz C, 2014: Dynamical Simulations in North Atlantic Tropical Cyclone Activity using Observed Low Frequency SSTs Oscillation Imposed on CMIP5 Model SSTs. *Journal of Climate*, doi: <http://dx.doi.org/10.1175/JCLI-D-13-00607.1>
- [6] Ramírez-Rodrigues MA, Asseng S, Fraisse C, **Stefanova L**, and Eisenkolbi A, 2014: Tailoring wheat management to ENSO phases for increased wheat production in Paraguay. *Climate Risk Management*, **3**, 24-38
- [7] Swain, E., **L. Stefanova**, T.J Smith III, 2014: Applying downscaled global climate model data to a hydrodynamic surface water/groundwater model. *American Journal of Climate Change*, *2014*, *3*, 33-49
- [8] Krishnamurti, T. N, **L. Stefanova**, V. Misra, 2013: *Tropical meteorology: An introduction*. Springer, 429pp.
- [9] **Stefanova, L.**, P. Sura and M. Griffin, 2013: Quantifying the non-Gaussianity of observed wintertime daily minimum and maximum temperatures in the Southeast United States. *J Climate*, **26**, 838-849.
- [10] Selman, C., V. Misra, **L. Stefanova**, S. DiNapoli, T. J. Smith III, 2013: On the twenty-first-century wet season projections over the Southeastern United States. *Regional Environmental Change*, **13** (Issue 1 Supplement), 153-164
- [11] Cammarano, D., **L. Stefanova**, B. Ortiz, M. R. Rodrigues, S. Asseng, G. Vellidis, V. Misra, G. Wilkerson, B. Basso, J. W. Jones, K. Boote, 2013: Evaluating the fidelity of downscaled climate data on simulated wheat and maize production in the southeastern US. *Regional Environmental Change*, **13** (Issue 1 Supplement), 101-110
- [12] Mirhousseini, G., P. Srivastava and **L. Stefanova**, 2013: Evaluating the Impact of Climate Change on Rainfall Intensity-Duration-Frequency (IDF) Curves in Alabama Using Dynamically-Downscaled Precipitation Data. *Regional Environmental Change*, **13** (Issue 1 Supplement), 25-33
- [13] **Stefanova, L.**, V. Misra, S. C. Chan, M. Griffin, J. J. O'Brien, and T. J. Smith III, 2012: A proxy for high-resolution regional reanalysis for the Southeast United States. *Clim Dyn*, **38**, 2449-2466, DOI: 10.1007/s00382-011-1230-y.
- [14] Cammarano, D., J. Payero, B. Basso, **L. Stefanova** and P. Grace, 2012: Adapting wheat sowing dates to projected climate change in Australia sub-tropics: analysis of crop water use and yield. *Crop and Pasture Science*, <http://dx.doi.org/10.1071/CP11324>).
- [15] **Stefanova, L.**, T. Krishnamurti, 2011: Kinetic energy exchanges between the time scales of ENSO and the Pacific Decadal Oscillation. *Meteorol and Atm Phys*, **114**, 95-105.
- [16] Misra, V., L. Moeller, **L. Stefanova**, S. Chan, J. J. O'Brien, T. J. Smith III, and N. Plant, 2011: The influence of Atlantic warm pool on Florida Sea Breeze. *J Geophys Res (Atm)*, **116**, D00Q06, doi:10.1029/2010JD015367.
- [17] **Stefanova, L.**, V. Misra, J. J. O'Brien, E. P. Chassignet and S. Hameed, 2011: Hindcast skill and predictability for precipitation and two-meter air temperature anomalies in global circulation

- models over the Southeast United States. *Clim Dyn*, **36**, doi: 10.1007/s0038201009887.
- [18] **Stefanova, L.**, T. Larow, 2011: Low-frequency SST variability in CMIP-5 historical integrations. *Science and Technology Infusion Climate Bulletin*, NOAA's National Weather Service.
- [19] Lim, Y-K, **L. Stefanova**, S. C. Chan, S. D. Schubert, and J. J. O'Brien, 2010: High-resolution subtropical summer precipitation derived from dynamical downscaling of the NCEP/DOW reanalysis: how much small-scale information is added by a regional model? *Clim Dyn*, **35**, 331-340, doi: 10.1007/s00382-010-0891-2.
- [20] LaRow, T., **L. Stefanova**, D.-W. Shin, and S. Cocke, 2010: Seasonal Atlantic tropical cyclone hindcasting/forecasting using two sea surface temperature datasets. *Geoph Res Lett*, **37**, L02804, doi:10.1029/2009GL041459 .
- [21] Thompson, A., **L. Stefanova**, and T. N. Krishnamurti, 2008: Baroclinic splitting of jets. *Meteorol and Atm Phys*, **100**, 257-274.
- [22] Ross R. S., A. Chakraborty, A. Chen, **L. Stefanova**, S. Sirdas, T. N. Krishnamurti, 2007: Improved seasonal climate forecasts for the Caribbean region using the Florida State University Synthetic Superensemble. *Meteorol and Atmos Phys*, **98**, 137-174.
- [23] Krishnamurti, T. N., **L. Stefanova**, L. Watson, and S. Pattnaik, 2007: Addressing hurricane intensity through angular momentum and scale energetics approaches. *Pure and Applied Geophysics*, **164**, 1429-1441.
- [24] Krishnamurti, T.N., T.S.V. Vijaya Kumar, W.T. Yun, A. Chakraborty, **L. Stefanova**, A. Chakraborty, 2006: Weather and seasonal climate forecasts using the superensemble approach, In: *Predictability of Weather and Climate*, Eds. Tim Palmer and R. Hagedorn, Cambridge University Press, London.
- [25] Krishnamurti, T.N., S. Pattnaik, **L. Stefanova**, T.S.V.V. Kumar, B.P. Mackey, A. J. O'Shay, and R. J. Pasch, 2005: On the hurricane intensity issue. *Mon Wea Rev*, **133**, 1886-1912.
- [26] Yun, W.T., **L. Stefanova**, A.K. Mitra, T.S.V.V. Kumar, W. Dewar, and T.N. Krishnamurti, 2005: Multi-model synthetic superensemble algorithm for seasonal climate prediction using DEMETER forecasts. *Tellus*, **57A**, 280-289.
- [27] Mitra, A. K., **L. Stefanova**, T.S.V.V. Kumar and T.N. Krishnamurti, 2005 Seasonal prediction for the Indian Monsoon region with FSU Ocean-Atmosphere coupled model: Model mean and 2002 anomalous drought. *Pure and Appl Geoph*, **162**, 1431-1454.
- [28] Yun, W. T., **L. Stefanova**, and T. N. Krishnamurti, 2003: Improvement of the multimodel superensemble technique for seasonal forecasts. *J Climate*, **16**, 3834-3840.
- [29] Krishnamurti, T.N., D.R. Chakraborty, N. Cubukcu, **L. Stefanova**, and T.S.V.V. Kumar, 2003: A mechanism of the Madden-Julian Oscillation based on interactions in the frequency domain. *Q J Roy Meteor Soc*, **129**: 2559-2590.
- [30] **Stefanova, L.** and T.N. Krishnamurti, 2002: Interpretation of seasonal climate forecast using Brier skill score, the Florida State University superensemble and the AMIP-1 dataset. *J Climate*, **15**, 537-544.
- [31] Krishnamurti, T.N, **L. Stefanova**, A. Chakraborty, T.S.V.V. Kumar, S. Cocke, D. Bachiochi and B. Mackey, 2002: Seasonal forecasts of precipitation anomalies for North American and Asian Monsoons. *J Meteorol Soc Jpn*, **80** (6): 1415-1426.
- [32] **Stefanova, L.**, 2001: Sensitivity of seasonal forecast to the parameterization of land surface processes. *FSU Report*, 120pp.

7.2 DATA SETS

- [1] CLARReS10: Coupled Land-Atmosphere Regional Reanalysis for the Southeast United States at 10km resolution (<http://floridaclimateinstitute.org/resources/data-sets/regional-downscaling#CLARReS10>).
- [2] CLAREnCE10: Coupled Land-Atmosphere Regional Ensemble Climate Change Experiment for the Southeast United States at 10 km resolution (<http://floridaclimateinstitute.org/resources/data-sets/regional-downscaling#CLAREnCE10>).

7.3 SELECTED INVITED PRESENTATIONS

- [1] **Stefanova L.**, 2015: Climate information and agricultural decision making. USDA Grazinglands Research Laboratory, El Reno, Oklahoma, 10 June 2015
- [2] **Stefanova, L.**, 2014: Climate, climate modeling, climate projections, downscaling. Building Resilience Against Climate Effects (BRACE) Webinar, Florida Department of Health, Tallahassee, FL, 15 July 2014.
- [3] **Stefanova, L.**, 2014: Climate extremes in peninsular Florida: history and projections. Guest seminar, Archbold Biological Station, Lake Placid, FL, 3 April 2014.
- [4] **Stefanova, L.**, 2013: Using historical and projected future climate model simulations as drivers of agricultural and biological models. American Geophysical Union Fall Meeting, San Francisco, CA, December 2013
- [5] LaRow, T and **L. Stefanova (presenting)**, 2013: The impact of the AMO on North Atlantic tropical cyclone activity in the 21st century. American Geophysical Union Meeting of The Americas, Cancun, Mexico, May 2013.
- [6] **Stefanova, L.**, J. Lu and T. LaRow, 2013: Sea level rise along the Southeast US coast: using historical measurements to inform the downscaling of CMIP5 projections. Coastal Hazards Symposium, St. Augustine, FL, Feb 2013.
- [7] **Stefanova, L.**, 2012: Climate variability and change: Southern peninsular Florida and the Florida Keys. KEYSMAP workshop, Marathon FL, July 2012 (Keynote speaker).
- [8] **Stefanova, L.**, V. Misra and T. J. Smith III, 2012: Climate downscaling: Southern peninsular Florida and the Florida Keys. KEYSMAP workshop, Marathon FL, July 2012 (Keynote speaker).
- [9] **Stefanova, L.**, V. Misra and T. J. Smith III, 2012: La Florida: Dynamical downscaling of climate for the Southeast United States. Gulf of Mexico LCC Workshop, Baton Rouge, LA, May 2012.
- [10] **Stefanova, L.**, V. Misra, S. Chan, T. LaRow, P. Sura, M. Griffin, S. DiNapoli, S. Bastola, C. Selman, J. J. O'Brien, and T. J. Smith III, 2011: Dynamical downscaling of climate for the Southeast United States. *SECC Fall Meeting*, Tallahassee FL, Nov 2011.
- [11] **Stefanova, L.**, 2011: Dynamical downscaling of climate: implications for South Florida. *FAU Everglades Workshop*, Boca Raton, FL, Mar 2011.
- [12] **Stefanova, L.**, 2011: Dynamical downscaling of climate for the Southeast United States: introducing the CLARReS10 data set. *USGS La Florida Workshop*, Gainesville, FL, Mar 2011.

8. RECENT FUNDING SOURCES

- [1] "Developing weather and climate-based environmental indices for a common framework to model survival, reproductive and movement rates of sea turtles, gulf sturgeon and manatees in the Northern Gulf of Mexico. USGS (2016-2017).
- [2] "Arctic shelf and large rivers seamless nesting in global HYCOM". Funded by Office of Naval Research (2015-2018).
- [3] "Climate variability to climate change: extension challenges and opportunities in the Southeast USA". Funded by University of Florida/NIFA (2011-2017)
- [4] "Building resilience against climate effects (BRACE)". Funded by Florida Department of Health (2013-2016).

- [5] “Relating large-scale climate drivers to regional/continental/global scale frequency of extremes.” Funded by Risk Prediction Initiative – Connecting Science and (Re)Insurance (2013-2014).
- [6] “Downscaling for Puerto Rico.” Funded by Southeast Climate Science Center, DOI (2013-2015).
- [7] “Synthesis of climate model downscaling products for the southeastern United States”. Funded by Southeast Climate Science Center, DOI (2012-2013).
- [8] “Role of low frequency sea surface temperature modes within a changing climate in modulating Atlantic hurricane activity”. Funded by DOE (2010-2013).
- [9] “Incorporating climate change effects into next-generation coastal inundation decision support systems: an integrated and community-based approach”. Funded by NOAA/UF subcontract (2011-2014).
- [10] “La Florida: a land of flowers in a latitude of deserts: Developing regional climate change projections to aid conservation management of Florida’s biodiversity”. Funded by USGS (2010-2013).

9. COLLABORATORS

- [1] **Agronomy and Extension:** Asseng S (UF), Basso B (MSU), Boote K (UF), Cammarano D (UF), Davis JR (UF), Fraisse C (UF), Fuentes M (NCSU), Jones J (UF), Ortiz B (UF), Payero J (UF), Velidis G (UGA), Wilkerson G (NCSU)
- [2] **Atmospheric Science:** Bourassa M (FSU), Bowden J (NCSU), Boyles R (NCSU), Chan S (UK Met), Cocke S (FSU), Devanas A (NWS/NOAA), DiNapoli S (National Data Buoy Center), Griffin M (FL Climate Office), Hameed S (U of Aizu, Japan), Konrad C (UNC), Krishnamurty TN (FSU), LaRow (FSU), Lim YK (NASA), Misra V (FSU), O’Brien JJ (FSU), Schubert S (NASA), Semazzi F (NCSU), Shin DW (FSU), Sura P (FSU), Wooten A (NCSU), Worsnop R (FSU), Zierden D (FL Climate Office)
- [3] **Biology and Ecology:** Beck C (USGS), Blomquist S (USFWS), Coleman F (FSU), Collazo J (NCSU), Gosnell S (FSU), Kaeser A (USFWS), Lamont M (USGS), Langtimm C (USGS), Price M (USGS), Randall M (USGS), Runge M (USGS), Terrando A (USGS), Smith III TJ (USGS), Teague A (USGS)
- [4] **Economics:** Solis D (U Miami/FAMU), Mullen J (UGA), Nadolnyak D (U Auburn)
- [5] **Human Health:** Conlon K (NCDC), Jagger, M (FL Health), Jordan M (Fl Health), Kintziger K (FL Health)
- [6] **Hydrology:** La Fontaine J (USGS), Lietman S (FSU), Martinez C (UF), Mirhosseini G (Auburn U), Lee T (USGS), Plant N (USGS), Srivastava P (Auburn U), Swain E (USGS)
- [7] **Oceanography and Coastal Engineering:** Chassignet EP (FSU), Dukhovskoy D (FSU), Liu B (NCSU), Liu P (NCSU), Morey S (FSU), Paramygin V (UF), Sheng PY (UF), Velissariou P (FSU)

10. SERVICE

10.1 AD-HOC PEER REVIEW

- [1] **Journals:** Climate Dynamics, Geophysical Research Letters, International Journal of Climatology, Journal of the American Water Resources Association, Journal of Climate, Journal of Earth System Science, Journal of Hydrologic Engineering, Regional Environmental Change,
- [2] **Funding agencies:** National Science Foundation.

10.2 MENTORING

- [1] **Undergraduate:** Ms. R Worsnop (BS Honors), Mr. Carlyle McNaught, (BS Honors)
- [2] **Graduate:** Lauren Mueller (MS); C. Selman (MS); Mr. James Duncan (MS); Ms. Chana Seitz (MS), Nafiul Islam (MS); Melissa Rodrigues (PhD).

10.3 COMMUNITY OUTREACH AND VOLUNTEER SERVICE

- [1] Women in Math and Science (WIMSE): providing career advice and guidance at semiannual meetings with undergraduate women participating in Florida State University's WIMSE program.
- [2] Outreach educator, speaker and presenter for local community groups and public K-12 schools.
- [3] Manatee health assessment: volunteer at manatee capture and health assessment held by the USGS at Crystal River National Wildlife Refuge (Crystal River, FL)
- [4] Volunteer at St. Francis wildlife rehabilitation center (Havana, FL)

11. PROFESSIONAL ORGANIZATIONS

- [1] **Professional Membership:** American Meteorological Society, American Geophysical Union.
- [2] **Affiliations:** Florida Climate Institute, Southeast Climate Consortium, Florida Water and Climate Alliance.
- [3] **Expert Groups:** Gulf Coast Vulnerability Assessment Project Climate Experts Team; Florida Water and Climate Alliance Expert Review Committee