

## CURRICULUM VITAE

Lydia B. Stefanova

[lstefanova@fsu.edu](mailto:lstefanova@fsu.edu), tel 850 645 8479

COAPS, Florida State University, Tallahassee, FL 32306-4520

### EDUCATION

<b>Ph.D. in Meteorology</b>	<b>2001</b>	Florida State University, Tallahassee, Florida
<b>M.S. in Meteorology</b>	<b>1996</b>	Florida State University, Tallahassee, Florida
<b>B.S. in Physics</b>	<b>1993</b>	Sofia University, Sofia, Bulgaria

### EMPLOYMENT

<b>2008-present</b>	<b>Visiting Assistant Scholar Scientists</b> , COAPS, FSU.
<b>2001-2008</b>	<b>Research Associate</b> , Dept. of Meteorology, FSU.
<b>2001-2002</b>	<b>Scientific Consultant</b> Weather Predict Inc., Raleigh, North Carolina
<b>1993-2001</b>	<b>Graduate Research Assistant</b> , Dept. of Meteorology, FSU.

### CURRENT RESEARCH INTERESTS

Sources of climate predictability over the Southeast US,  
Dynamical climate forecasting with a focus on near-surface processes,  
Approaches to probabilistic seasonal forecasting,  
Real-time global and regional seasonal forecasting,  
Land surface parameterizations,  
Applications of climate forecasts to agricultural crop modeling.

### PAST RESEARCH EXPERIENCE

Methods for optimal combination of multi-model forecasts; assessing error statistics and skill measures of multi-model forecasts in a wide range of contexts.  
Approaches for producing local seasonal forecasts from combination of model output and oceanic indices.  
Probabilistic forecasts for rainfall using deterministic multi-model forecasts.  
Implementation of land-surface parameterization scheme into a Global Spectral model.  
Role of land-surface parameterization in seasonal forecasting – diagnostics, sensitivity, predictability.  
Design and implementation of a global spectral barotropic model for the simulation and study of the development of blocking in response to small-scale vorticity perturbations.  
Development and numerical implementation of a mathematical framework for the assessment of energy exchanges among phenomena of different frequency, such as the Madden-Julian Oscillation, Pacific Decadal Oscillation, and ENSO.  
Development and numerical implementation of a mathematical framework for the assessment of energy exchanges and conversions in hurricanes.

## PUBLICATIONS:

- Stefanova, L.** and T. N. Krishnamurti, 2009: Kinetic energy exchanges between the time scales of ENSO and the Pacific Decadal Oscillation. *In review*
- Thompson, A., **L. Stefanova**, and T. N. Krishnamurti, 2008: Baroclinic splitting of jets. *Meteorology and Atmospheric Physics*, **100**, 257-274.
- 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. *Meteorology and Atmospheric Physics*, **98**, 137-174.
- 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.
- Krishnamurti, T.N., T.S.V. Vijaya Kumar, A.K. Mitra, W.T. Yun, **L. Stefanova**, Brian P. Mackey, Adam J. Oshay And William K. Dewar, 2005: Further Improvements in Superensemble Forecasts for Weather and Climate, In: Book on Predictability, Eds. Tim Palmer and R. Hagedorn, Cambridge University Press, London.
- 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.*, **13**, 1886-1912.
- 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.
- 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.
- Yun, W. T., **L. Stefanova**, and T. N. Krishnamurti, 2003: Improvement of the multimodel superensemble technique for seasonal forecasts. *J. Climate*, **16**, 3834-3840.
- 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.
- 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.
- 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.

## PRESENTATIONS:

- Stefanova, L.**, Y. K. Lim, M. Griffin, D. W. Shin, and J. J. O'Brien: "High resolution real-time seasonal climate forecasts for the Southeast US: Downscaling global forecasts to regional domain. SECC meeting, Griffin, Georgia, May 5-7, 2009

- Stefanova, L.**, T. N. Krishnamurti and S. Pattnaik: "Interaction of hurricane and cloud scales: contribution to hurricane intensity", 27th Conference on Hurricanes and Tropical Meteorology, Monterey, California, 2006.
- Stefanova, L.** and T. N. Krishnamurti: "Nonlinear scale interactions via energy exchanges between the Pacific Decadal Oscillation and the El Niño-Southern Oscillation", 15<sup>th</sup> Symposium on Global Change and Climate Variations, Seattle, Washington, 2004.
- W. T. Yun, **L. Stefanova**, A. K. Mitra and T. N. Krishnamurti: "Multi-Model Synthetic Superensemble Prediction System", 15<sup>th</sup> Symposium on Global Change and Climate Variations, Seattle, Washington, 2004.
- T. N. Krishnamurti, A. K. Mitra, W. T. Yun and **L. Stefanova**: "Seasonal climate forecasts of asian monsoon from multimodels", INDOCLIM, February 23-27, 2004.
- T. N. Krishnamurti, Florida State University, Tallahassee, FL; and D. R. Chakraborty, N. Cubukcu, **L. Stefanova**, and T. S. V. Vijaya Kumar: "A mechanism of the MJO based on interactions in the frequency domain", 15<sup>th</sup> Symposium on Global Change and Climate Variations, Seattle, Washington, 2004.
- A. K. Mitra, W. T. Yun, **L. Stefanova** and T. N. Krishnamurti: "Seasonal Prediction of North American Monsoon from Coupled Ocean-Atmosphere Models and Multimodel Ensemble Technique", CLIVAR meeting
- T. N. Krishnamurti, A. K. Mitra, W. T. Yun and **L. Stefanova**: "Seasonal Climate Forecasts from Multimodels", Spring 2004 Heiland Lecture Series, Golden, Colorado, March 11, 2004.
- T. N. Krishnamurti, A. K. Mitra, WT Yun, and **L. Stefanova**: "Seasonal forecasts for the asian monsoon", International workshop on monthly-to-seasonal climate prediction, Taiwan, October 25-27, 2003.
- T. N. Krishnamurti, T.S.V. Vijaya Kumar, **Lydia Stefanova** and Jeffrey Wood: Landfall Prediction of Hurricanes/Typhoons from the FSU Superensemble, 25th Conference on Hurricanes and Tropical Meteorology , San Diego, CA, April 2002.
- T. N. Krishnamurti, **Lydia Stefanova**, Arun Chakraborty, T.S.V. Vijaya Kumar, Steve Cocke, David Bachiochi and Brian Mackey (Florida State University): "Seasonal forecasts of precipitation anomalies for North American and Asian Monsoons", NCAR Workshop on Regional Climate Research: Needs and Opportunities, Boulder, Colorado, April 2-4, 2001.
- Stefanova, L.** and J. Ahlquist: "Sequence of events following a mid-latitude perturbation in a barotropic spectral model", 11<sup>th</sup> AMS Conference on Numerical Weather Prediction, Norfolk, Virginia, 1996.