

Curriculum Vitae

Vasubandhu Misra

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General Information

University address: Earth, Ocean & Atmospheric Sci & Center for Ocean-Atmospheric
Prediction Studies
College of Arts and Sciences
LOVE BUILDING 0420
Florida State University
Tallahassee, Florida 32306-4520
Phone: 645-8859/644-2814; Fax: 644-4841/644-9642

E-mail address: vmisra@fsu.edu

Web site: <http://www.coaps.fsu.edu/misra/people.php>

Professional Preparation

- 1997 Doctor of Philosophy, Florida State University. Major: Meteorology.
- 1995 Master of Science, Florida State University. Major: Meteorology.
- 1991 B. E., Karnataka Regional Engineering College, Mangalore University, India.
Major: Civil Engineering. Not Applicable.

Nondegree Education and Training

- 1999–2000 Center for Ocean-Land-Atmosphere Studies.
- 1997–1999 Department of Atmospheric and Oceanic Sciences, McGill University,
Canada.

Professional Experience

- 2012–present Associate Professor, Department of Earth, Ocean and Atmospheric Science,
Florida State University, Florida State University.

- 2008–present Assistant Professor, Earth, Ocean & Atmospheric Science, Florida State University, Florida State University.
- 2001–2008 Research Scientist, Center for Ocean-Land-Atmosphere Studies, Institute of Global Environment and Society. Responsible for conducting climate modeling research in tropical Meteorology.

Honors, Awards, and Prizes

- Ralph E. Powe Junior Faculty Enhancement Award, Oak Ridge Association of Universities (2010). (\$10,000).
Selected Early Career Scientist for the Junior Faculty Forum, National Center for Atmospheric Research (2009).

Current Membership in Professional Organizations

- American Geophysical Union
American Meteorological Society

Teaching

I weigh my teaching responsibilities equally with my research priorities. I joined this profession solely because I strongly feel that research and teaching are complimentary to each other. I endeavor to keep the teaching material updated with current developments in the field and motivate students in the subject area from clear explanation of how research questions were framed and answered.

Courses Taught

- Atmopsheric Physics I (MET4420)
Tropical Meteorology I (MET 5533)
Southeast Climate Variations and Change (MET6155)
Introduction to Physical Climatology (MET2101)
Tropical Meteorology II (MET5533)
Southeast Climate Variations and Change (MET 4159)
Southeast Climate Variations and Change (MET 6150)
Tropical Meteorology II (MET5533)
Physical Climatology (MET2101)
* Tropical Meteorology II (MET5533)
* Physical Climatology (MET2101)
* Tropical Meteorology II (MET 5533)
* Tropical Meteorology I (MET 5534)

- * Tropical Meteorology II (MET5533)

New Course Development

Atmospheric Physics I (2015)
Southeast Climate Variations and Change (2012)

- * Physical Climatology (2010)
- * Tropical Meteorology I (2009)
- * Tropical Meteorology II (2009)

Curriculum Development

Atmospheric Physics I: This is a course being offered to senior undergraduate and first year graduate students. It dwells on understanding the laws of thermodynamics in the context of atmospheric processes (2015)

Southeast US Climate Variations and Change: This is a course being offered at the senior undergraduate and at graduate level. Although parochial by title, it dwells on global climate variations and change and relates them to the local (southeast US) climate variations and change (2012)

- * Physical climatology: This is an introductory course to understand the components of the earth's climate system and underlying principles of climate variability (2010)
- * Tropical Meteorology II: This dwells on the meso and synoptic scale variations of the atmosphere at tropical latitudes. The students are given extensive introduction to atmospheric convection (a characteristic feature of the tropical latitudes), tropical boundary layer and a lengthy discussion on hurricanes and the African easterly waves (2009)
- * Tropical Meteorology I: dwells on large-scale tropical variations of weather and climate. It gives a holistic perspective on tropical variations with extensive discussions on coupled ocean-land-atmosphere interactions. The students are exposed to relevant theoretical, observational and modeling studies (2009)

Doctoral Committee Chair

Selman, C., graduate. (2015). *Simulating the impacts and sensitivity of the Southeastern United States Climatology to Irrigation.*

Kozar, M., graduate. (2015). *Analysis and prediction of integrated kinetic energy in Atlantic tropical cyclones.*

Michael, J., graduate. (2014). *On Initializing CGCMs for Seasonal Predictability of ENSO.*

Glazer, R., doctoral candidate. *Impact of air-sea coupling on the Indian Monsoon.*
Groenen, D., doctoral student. *The variability and predictability of the Central American Monsoon.*

Doctoral Committee Member

Albers, C., graduate. (2014).
You, Y., graduate. (2013).
* Ryglicki, D. R., graduate. (2011).
* Maue, R., graduate. (2010).
Annane, B., doctoral candidate.
Sun, J., doctoral candidate.
Nowell, H. K., doctoral candidate.
Wang, H., doctoral candidate.
Weihs, R. R., doctoral student.
Heath, N., doctoral student.
Marchand, M., doctoral student.
Truchelet, R., doctoral student.

Doctoral Committee University Representative

Saha, B., doctoral student.

Master's Committee Chair

Selman, C., graduate. (2012). *Impact of irrigation on the southeast US climate.*
Stroman, A. C., graduate. (2011). *The rendition of the Atlantic Warm Pool in Reanalyses.*
* Moeller, L. E., graduate. (2011). *Sea Breeze variations in Florida.*
* Frumkin, A. J., graduate. (2011). *Predictability of dry season reforecasts over the tropical South American region.*
* Pantina, P., graduate. (2011). *Characterizing the variability of the Indian Monsoon: Changes in evaporative sources for summertime rainfall events.*
Cotcamp, B., student. *A review and historical perspective of 2015 El Nino.*
Noska, R., student. *Characterizing the onset and the demise of the Indian Monsoon.*

Master's Committee Cochair

Seitz, C., graduate. (2015). *Estimating the effects of climate change on tropical cyclone*

activity.

- * Michael, J. -P., graduate. (2010). *ENSO fidelity in two coupled models.*

Master's Committee Member

- Bielli, J., graduate. (2015).
- Smoleroff, K., graduate. (2015).
- Lahr, A., graduate. (2014).
- Sun, J., graduate. (2014).
- Yifang, R., graduate. (2014).
- Hall, T., graduate. (2014).
- Lahr, A., graduate. (2014).
- Glazer, R., graduate. (2014).
- Ren, Y., graduate. (2014).
- Hazelton, A., graduate. (2013).
- Heath, N., graduate. (2013).
- Bradford, J., graduate. (2012).
- Taylor, A., graduate. (2012).
- Helms, C., graduate. (2012).
- Johnson, B., graduate. (2012).
- Moore, K. E., graduate. (2012).
- Moore, K., graduate. (2012).
- Taylor, A., graduate. (2012).
- Todd, A., graduate. (2012).
- * Thompson, A., graduate. (2011).
- * Ma, Y., graduate. (2011).
- * Strazzo, S. E., graduate. (2011).
- * Taylor, Z. B., graduate. (2011).
- * May, J. C., graduate. (2010).
- Hernandez, K., student.
- Ducker, J., student.
- Keefer, J., student.
- Allison, T., student.
- Dobbs, W., student.
- Zelinsky, D. A., student.

Bachelor's Committee Member

- Zuromski, L., graduate. (2015).

Research and Original Creative Work

My research primarily resides tropical meteorology and climate variations. I am fundamentally a climate modeler interested to simulate, predict, and understand the slowly varying climate variations. I am also pursuing improving our prediction capability of tropical cyclone intensity. I am also interested to build new interfaces with other disciplines.

Publications

Refereed Journal Articles

Misra, V., & Mishra, A. (submitted). The oceanic influence on the rainy season of Peninsular Florida. *Geophysical Research (Atmospheres)*. Manuscript submitted for publication, 40 pages.

Misra, V., Mishra, A., & Li, H. (submitted). The sensitivity of the regional coupled ocean-atmosphere simulations over the Intra-Americas Seas to the prescribed bathymetry. *Dynamics of Atmospheres and Oceans*. Manuscript submitted for publication, 54 pages.

Selman, C., & Misra, V. (submitted). The impact of an extreme case of irrigation on the Southeastern United States Climate. *Climate Dynamics*. Manuscript submitted for publication, 40 pages.

Misra, V., Groenen, D., Bharadwaj, A., & Mishra, A. (in press). The warm pool variability of the tropical northeast Pacific. *International Journal of Climatology*, 28 pages.

Misra, V., & Bastola, S. (in press). Reconciling droughts and land falling tropical cyclones in the Southeastern United States. *Climate Dynamics*, 22 pages.

doi:10.1007/s00382-015-2645-7.

Bastola, S., & Misra, V. (2015). Seasonal hydrological and nutrient loading forecasts for watersheds over the Southeastern United States. *Environmental Modeling and Software*, 73, 90-102. doi:10.106/j.envsoft.2015.08.005

Selman, C., & Misra, V. (2015). Simulating Diurnal Variations Over the Southeastern United States. *Geophysical Research (Atmospheres)*, 120, 19. doi:10.1002/2014JD02181

Bastola, S., Misra, V., & Li, H. (2014). Seasonal hydrological forecasts for watersheds over the Southeastern United States for boreal summer and fall seasons. *Earth Interactions*, 17 (25), 38. doi:10.1175/2013EI000519.1

Demonstrates the applicability of summer and fall seasonal climate forecasts on stream flow forecasts over the southeastern US.

- Di, T., Senthold, A., Martinez, C. J., Misra, V., Cammarano, D., & Ortiz, V. (2014). Does decadal climate variation influence Wheat and Maize production in the southeast USA. *Agricultural and Forest Meteorology*, 204, 9. doi:http://dx.doi.org/10.1016/j.agrformet.20
- Kozar, M., & Misra, V. (2014). Statistical Prediction of Integrated Kinetic Energy in North Atlantic Tropical Cyclones. *Monthly Weather Review*, 142, 4646-4657. doi:10.1175/MWR-D-14-00117.1
- Li, H., Kanamitsu, M., Hong, S. -Y., Yoshimura, K., Cayan, D. R., Misra, V., & Sun, L. (2014). Projected Climate Change Scenario over California by a Regional Ocean–Atmosphere Coupled Model System. *Climatic Change*, 122 (4), 25. doi:10.1007/s10584-013-1025-8.
Examines the role of high resolution air-sea coupling on regional climate change over California.
- Misra, V., & Haiqin, L. (2014). The seasonal climate predictability of the Atlantic Warm Pool and its Teleconnections. *Geophys. Res. Lett*, doi:10.1002/2013GL058740, 6.
Diagnoses the Atlantic warm pool predictability skill of the North American multi-model ensemble.
- Misra, V., Li, H., & Kozar, M. (2014). The precursors in the Intra-Americas Seas to seasonally climate variations over North America. *Geophysical Research Letters*, 119, 15. doi:10.1002/2014JC009911
- Nag, B., Misra, V., & Bastola, S. (2014). Validating ENSO teleconnections on Southeastern United States Winter Hydrology. *Earth Interactions*, 18, 22. doi:EI-D-14-0007.1
- Cammarano, D., Stefanova, L., Ortiz, B., Rodrigues, M. R., Asseng, S., Misra, V., Wilkerson, G., Basso, B., Jones, J. W., & Boote, K. J. (2013). Evaluating the fidelity of downscaled climate data on simulated wheat and maize production in the southeastern US. *Regional Environmental Change*, 1-x. doi:10.1007/s10113-013-0410-1
- Misra, V., DiNapoli, S., & Powell, M. (2013). The Track Integrated Kinetic Energy of the Atlantic Warm Pool. *Monthly Weather Rev*, 1-x. doi:10.1175/MWR-D-12-00349.1
- Bastola, S., & Misra, V. (2013). Evaluation of dynamically downscaled reanalysis precipitation data for hydrological application: A case study of watersheds in the southeast United States. *Hydrological Processes*, 1-x. doi:10.1002/hyp.9734
This paper examines the efficacy of dynamic downscaling on hydrological simulation over 28 watersheds in the southeast US.
- Li, H., & Misra, V. (2013). Global Seasonal Climate Predictability in a Two Tiered Forecast System. Part II: Boreal winter and spring seasons. *Climate Dynamics*, 1-x. doi:10.1007/s00382-013-1813-x

It describes the seasonal predictability of a newly launched global atmospheric climate model that is forced with a uniquely bias corrected forecast SST from two coupled ocean-atmosphere models.

Li, H., Kanamitsu, M., Hong, S. -Y., Yoshimura, K., Cayan, D. R., & Misra, V. (2013). A high-resolution ocean-atmosphere coupled downscaling of present climate over California. *Climate Dynamics*, 1-x. doi:10.1007/s00382-013--1670-7

It is a description of the downscaled simulation of the current and future climate over California with a regionally coupled ocean atmosphere model.

Michael, J. -P., Misra, V., & Chassignet, E. (2013). The El Niño Southern Oscillation in the Historical Centennial Integrations of the new Generation of Climate Models. *Regional Environmental Change*, 1-x. doi:10.1007/s10113-013-0452-4

It examines the fidelity of the ENSO in the 20th century simulation of the CMIP5 suite of models.

Misra, V., & DiNapoli, S. (2013). The variability of the Southeast Asian Summer Monsoon. *International journal of climatology*, 1-x. doi:10.1002/joc.3735

This looks at the variability of the length of the southeast Asian monsoon.

Misra, V., & Li, H. (2013). The seasonal predictability of the Asian summer monsoon in a two tiered forecast system. *Climate Dynamics*, 42(9-10), 37. doi:10.1007/s00382-013-1838-1

Doi: 10.1007/s00382-013-1812-y.

Selman, C., Misra, V., Stefanova, L., DiNapoli, S., & Smith, T. (2013). Understanding Differing Regional and Global Climate Model Projections of the 21st Century Wet Season Over the Southeastern United States. *Regional Environmental Change*, 1-x. doi: 10.1007/s10113-013-0477-8

It argues how effective is downscaling to 10km grid resolution of the 20th century reanalysis to reconstruct the local climate of the southeastern United States.

Misra, V., & DiNapoli, S. M. (2012). Understanding wet season variations over Florida. *Climate Dynamics*, 34. doi:10.1007/s00382-012-1382-4

The low frequency variations of the length of the wet season over Florida is discussed in the paper.

Kozar, M., & Misra, V. (2012). Evaluation of twentieth-century Atlantic warm pool simulations in historical CMIP5 runs. *Climate Dynamics*, 1-x. doi:DOI 10.1007/s00382-012-1604-9

Misra, V., Pantina, P., Chan, S. C., & DiNapoli, S. (2012). A comparative study of the Indian summer monsoon hydroclimate and its variations in three reanalyses. *Climate Dynamics*, 39, 1149-1168. doi:10.1007/s00382-012-1319-y

We compare R2, CFSR, and MERRA atmospheric reanalysis for their Indian monsoon hydroclimate simulation.

Misra, V., Stroman, A., & DiNapoli, S. (2012). The rendition of the Atlantic warm pool in the

reanalyses. *Climate Dynamics*, 46. doi:10.1007/s00382-012-1503-0

Three ocean reanalyses and three atmospheric reanalyses are compared for their simulation of the Atlantic warm pool.

Misra, V., & DiNapoli, S. M. (2012). The observed teleconnection between equatorial Amazon and the Intra-Americas Seas. *Climate Dynamics*, 1-33. doi:10.1007/s00382-012-1474-1

A two season lag between the seasonal peak of convection of Amazon and the appearance of warm SST in Intra-Americas Seas is explained in terms of the local heat budget and meridional overturning circulation.

Bastola, S., & Misra, V. (2012). Sensitivity of Hydrological Simulations of Southeastern United States Watersheds to Temporal Aggregation of Rainfall. *Journal of hydrometeorology*, 1-x. doi:10.1175/JHM-D-12-096.1

It highlights the importance of high resolution precipitation observations in simulating the observed streamflow in the southeastern United States.

DiNapoli, S., & Misra, V. (2012). Reconstructing the 20th Century High-Resolution Climate of the Southeastern United States. *Journal of Geophysical Research (Atmospheres)*; doi: 10.1029/2012JD018303, 1-x. doi:10.1029/2012JD018303.

;

Frumkin, A., & Misra, V. (2012). Predictability of dry season reforecasts over the tropical and subtropical South American region. *International journal of climatology*, 11. doi: 10.1002/joc.3508

Predictability of dry season hindcasts over the tropical South American region from global and regional models are diagnosed and their differences are attributed to the land-atmosphere interactions. doi: 10.1002/joc.3508.

Misra, V., DiNapoli, S., & Bastola, S. (2012). Dynamic downscaling of the 20th Century Reanalysis over the Southeastern United States. *Regional Environmental Change*, 1-x. doi:10.1007/s10113-012-0372-8

The efficacy in preserving the decadal variations from downscaling at 10km resolution from the 20th century reanalysis is highlighted.

Misra, V., Li, H., Wu, Z., & DiNapoli, S. (2012). Global seasonal climate predictability in a two tiered forecast system. Part I: Boreal summer and fall seasons. *Climate Dynamics*, 1-x. doi:10.1007/s00382-013-1812-y

It describes the seasonal predictability of a newly launched global atmospheric climate model that is forced with a uniquely bias corrected forecast SST from two coupled ocean-atmosphere models.

Misra, V., & Michael, J. -P. (2012). Varied diagnosis of the observed surface temperature trends in the southeastern United States. *Journal of Climate*, 1-x. doi:JCLI-D-12-00241.1

It compares and contrasts the diagnosed temperature trends from the various versions of the observed datasets provided by the National Climatic Data Center.

Misra, V., Michael, J. -P., Boyles, R., Chassignet, E. P., & O'Brien, J. J. (2012). Reconciling the spatial distribution of the surface temperature trends in the southeast US. *Journal of climate*, 27. doi:<http://dx.doi.org/10.1175/JCLI-D-11-0017>

We show that the heterogeneity of the temperature trends in the southeast US is partially related to urbanization and irrigation in rural areas.

Stefanova, L., Misra, V., Chan, S., O'Brien, J. J., & SmithIII, T. J. (2011). A proxy for high resolution regional reanalysis for the Southeast United States: Assessment of precipitation variability. *Climate Dynamics*, 38, 2449-2466. Retrieved from http://coaps.fsu.edu/~vmisra/clarres_jan21.pdf doi:10.1007/s00382-011-1230-y

Chan, S., & Misra, V. (2011). *Dynamic downscaling of the North American monsoon with the ECPC-NCEP regional spectral model from NCEP CFS global model-varied representation. *Journal of Climate*, 24, 653-673. Retrieved from <http://coaps.fsu.edu/~vmisra/nam.pdf>

A critical view of downscaling and coupled ocean-atmosphere modeling of the North American Monsoon is presented. S. Chan is now working as post-doc in Met Office, UK.

Chan, S., Misra, V., & Smith, H. (2011). A modeling study of the interaction between the Atlantic warm pool, Tropical Atlantic Easterlies, and the Lesser Antilles. *Journal of Geophysical Research (Atmospheres)*, doi:10.1029/2010JD01, 1-x. Retrieved from <http://coaps.fsu.edu/~vmisra/antilles.pdf>

The impact of the diurnal cycle introduced by the islands of the Lesser Antilles on the local climate variations is studied in this high resolution modeling work. S. Chan is post-doc in UK Met Office. H. Smith is vice-provost in University of Virgin Islands.

Marengo, J. A., Liebmann, B., Grimm, A., Misra, V., Dias, P. S., Cavalcanti, I. F. A., Carvalho, L. M. V., Berbery, E. H., Ambrizzi, T., Vera, C. S., Saulo, A. C., Nogues-Paegle, J., Zipser, E., Seth, A., & Alves, L. M. (2011). New developments on the functioning, characteristics, and variability of the South American Monsoon System. *International Journal of Climatology*, doi:10.1002/joc.2254, 1-x. Retrieved from <http://coaps.fsu.edu/~vmisra/reviewsam.pdf>

A review paper on South American Monsoon. All the co-authors are professional colleagues outside of FSU.

Misra, V., Moeller, L., Stefanova, S., Chan, S., O'Brien, J. J., SmithIII, T. J., & Plant, N. (2011). The influence of the Atlantic Warm Pool on the Panhandle Florida Sea Breeze. *Journal of Geophysical Research (Atmospheres)*, doi:10.1029/2010JD01, 1-x.

Large (small) Atlantic warm pool is shown to reduce (increase) the intensity of Panhandle Florida Sea breeze. L. Moeller graduated with a Master's in Meteorology in summer 2011. She is back in her hometown in Mississippi. Stefanova is Assistant Scholar scientist in COAPS. O'Brien is emeritus professor in COAPS. T. J. SmithIII and N. Plant are USGS scientists.

Stefanova, L., Misra, V., O'Brien, J. J., Chassignet, E., & Hameed, S. (2011). Multi-model seasonal climate hindcast skill and predictability for the southeast United States.

Climate Dynamics, DOI 10.1007/s00382-, 1-x. Retrieved from <http://coaps.fsu.edu/~vmisra/seus-skill.pdf>

The seasonal prediction skill of coupled ocean-atmosphere models and 2-tier models over the southeast US are compared. Stefanova is Assistant Scholar Scientist in COAPS, O'Brien is emeritus professor in COAPS, Chassignet is Director of COAPS, S. Hameed is a faculty in University of Aizu.

- * Chan, S., & Misra, V. (2010). A diagnosis of the 1979-2005 Extreme Rainfall Events in the southeast US with Isentropic Moisture Tracing. *Monthly Weather Review*, 138, 1172-1185. Retrieved from <http://coaps.fsu.edu/~vmisra/mwr-schan.pdf>

Through this back trajectory analysis of moisture, we diagnose the contribution of remote and local moisture to extreme events in the southeast US. S. Chan is post-doc in UK Met Office.

- * Krishnamurthy, V., & Misra, V. (2010). Daily Atmospheric Variability in the South American Monsoon System. *Climate Dynamics*, doi:10.007/s00382-01, 1-x. Retrieved from <http://coaps.fsu.edu/~vmisra/daily.pdf>

Using multi-channel singular spectrum analysis we decompose and understand the temporal variations of the south american monsoon using daily data. V. Krishnamurthy is a professional colleague in Center for Ocean-Land-Atmosphere Studies, Maryland.

- * Krishnamurthy, V., & Misra, V. (2010). Observed ENSO teleconnections with the South American System. *Atmospheric Science Letters*, 11, 7-12. Retrieved from <http://coaps.fsu.edu/~vmisra/ar1.pdf>

This observational paper clarifies the teleconnection between South American monsoon and ENSO. V. Krishnamurthy is a professional colleague in Center for Ocean-Land-Atmosphere studies, Maryland.

- * Misra, V. (2010). Interaction of interannual and diurnal variations over equatorial Africa. *Journal of Geophysical Research*, 115, 1-x. Retrieved from <http://coaps.fsu.edu/~vmisra/zaire.pdf>

- * Wei, J., Dirmeyer, P. A., Guo, Z., Zhang, L., & Misra, V. (2010). How much do different land models matter for climate simulation: results from an atmospheric model coupled to three different land models. *Journal of Climate*, 23, 3135-3145. Retrieved from <http://coaps.fsu.edu/~vmisra/wei2010.pdf>

By tiling 3 different land surface schemes to the same atmospheric model, the uncertainty stemming from land-atmosphere interactions are uniquely determined. The co-authors are professional colleagues in Center for Ocean-Land-Atmosphere Studies, Maryland.

- * Misra, V. (2009). Harvesting Model Uncertainty in the Simulation of the Interannual Variability. *Journal of Geophysical Research (Atmospheres)*, 114, 1-11. Retrieved from <http://coaps.fsu.edu/~vmisra/harvest.pdf>

A unique way of introducing stochasticity in the cumulus parameterization of the AGCM is introduced and shown how it can modulate low frequency variations in a coupled integration.

- * Misra, V. (2009). The Amplification of the ENSO Forcing over Northern Tropical South America. *Journal of Hydrometeorology*, 16, 1561-1568. Retrieved from <http://coaps.fsu.edu/~vmisra/saamp.pdf>

It is shown that diurnal variability is modulated by ENSO over Northern tropical South America.

- * Misra, V., & Chan, S. (2009). Seasonal predictability of the Atlantic Warm Pool in the NCEP CFS. *Geophysical Research Letters*, 36, 1-x. Retrieved from http://coaps.fsu.edu/~vmisra/awp_pred.pdf

It is shown that seasonal prediction of the Atlantic warm pool is sensitive to the low frequency initialization of the ocean component of the climate model. S. Chan is post-doc in UK Met Office.

- * Misra, V., Chan, S., Wu, R., & Chassignet, E. (2009). Air-Sea Interactions over the Atlantic Warm Pool in the NCEP CFS. *Geophysical Research Letters*, 36, 1-x. Retrieved from <http://coaps.fsu.edu/~vmisra/awp.pdf>

It is shown that air-sea interaction over the Atlantic warm pool is important to get the correct simulation of the Atlantic warm pool in the NCEP CFS. Chassignet is Director of COAPS. S. Chan is post-doc in UK Met Office. R. Wu is faculty in Univ. of HongKong.

- * Misra, V., & Dirmeyer, P. (2009). Air, Sea and Land interactions of the US Hydroclimate. *Journal of Hydrometeorology*, 10, 353-373. Retrieved from <http://coaps.fsu.edu/~vmisra/aol-us.pdf>

Coupled interactions is contrasted between boreal winter and summer and that between southeast and southwest US. P. Dirmeyer is professional colleague in Center for Ocean-Land-Atmosphere Studies, Maryland.

- * Misra, V., & Marx, L. (2009). The coupled seasonal hindcasts of the South American Monsoon. *International Journal of Climatology*, 29, 1101-1115. Retrieved from <http://coaps.fsu.edu/~vmisra/ijoc.pdf>

The seasonal predictability of boreal winter season over South America is examined at different resolutions of the coupled model.

- * Brunke, M., Zeng, X., Misra, V., & Beljaars, A. (2008). Integration of a prognostic sea surface skin temperature scheme into weather and climate models. *Journal of Geophysical Research (Atmospheres)*, D21117, 1-15. Retrieved from <http://coaps.fsu.edu/~vmisra/brunke.pdf>

The impact of simulating diurnal variability of sea surface temperature on the Asian monsoon rainfall variability is shown.

- * Misra, V. (2008). Coupled Air, Sea, and Land Interactions of the South American Monsoon. *Journal of Climate*, 21, 6389-6403. Retrieved from <http://coaps.fsu.edu/~vmisra/aol-sam.pdf>

The difference in the coupled interactions over the Amazon River Basin and Southeast Brazil (core of the

South American Monsoon) is highlighted.

- * Misra, V. (2008). Coupled Interactions of the Monsoons. *Geophysical Research Letters*, 35, 1-7. Retrieved from <http://www.coaps.fsu.edu/~vmisra/gmonsoons.pdf>

A clean demonstration of coupled land-atmosphere-ocean interactions in the monsoons around the globe is done in this modeling study.

- * Misra, V., Marx, L., Fennessy, M., Kirtman, B. P., & KinterIII, J. L. (2008). A Comparison of Climate Prediction and Simulation over Tropical Pacific. *Journal of Climate*, 21, 3601-3611. Retrieved from <http://www.coaps.fsu.edu/~vmisra/cmip.pdf>

Impact of initializing coupled climate models for ENSO prediction is assessed. All coauthors are professional colleagues in Center for Ocean-Land-Atmosphere Studies, Maryland.

- * Misra, V., Marx, L., Zeng, X., & Brunke, M. (2008). The Equatorial Pacific Cold Tongue Bias in a Coupled Climate Model. *Journal of climate*, 21, 5852-5869. Retrieved from <http://www.coaps.fsu.edu/~vmisra/coupint.pdf>

The influence of high frequency stochastic forcing on low frequency climate modes is demonstrated in this modeling study. L. Marx is professional colleague in Center for Ocean-Land-Atmosphere Studies, Maryland. X. Zeng and M. Brunke are faculty in Univ. of Arizona.

- # Misra, V. (2007). A Sensitivity Study of the Coupled Simulation of the Northeast Brazil Rainfall Variability. *Journal of Geophysical Research (Atmospheres)*, 112, 1-16. Retrieved from http://www.coaps.fsu.edu/~vmisra/nor_col3.2_jgr.pdf

The impact of shallow inversion clouds in the eastern subtropical oceans on the rainfall variability in the austral fall over Nordeste is examined.

- # Misra, V. (2007). Addressing the Issue of Systematic Errors in a Regional Climate Model. *Journal of Climate*, 20, 801-818. Retrieved from <http://www.coaps.fsu.edu/~vmisra/addressing.pdf>

From over 100 regional climate seasonal simulations it is shown that removing systematic bias in the lateral boundary forcing of vorticity, log of surface pressure, and divergence improves the simulation of the dynamic downscaling the most.

- # Misra, V. (2007). The manifestation of remote response over equatorial Pacific in a climate model. *Journal of Geophysical Research (Atmospheres)*, 112, 1-17. Retrieved from <http://www.coaps.fsu.edu/~vmisra/manifestation.pdf>

The impact of stratus clouds on the Walker circulation in the tropical Oceans are examined in this modeling study.

- # Misra, V., Marx, L., KinterIII, J. L., Kirtman, B. P., Guo, Z., Min, D., Fennessy, M., Dirmeyer, P. A., Kallumal, R., & Straus, D. M. (2007). Validating and Understanding ENSO simulation in Two Coupled Models. *Tellus*, 58A, 292-308. Retrieved from <http://www.coaps.fsu.edu/~vmisra/validating.pdf>

A series ENSO metrics are systematically compared between two coupled models, one of which was developed by the first author.

- # Misra, V., & Zhang, Y. (2007). The Fidelity of the NCEP CFS Seasonal Hindcasts over Nordeste. *Monthly Weather Review*, 135, 618-627. Retrieved from http://www.coaps.fsu.edu/~vmisra/nor_cola3.2_jgr.pdf

The extensive NCEP CFS seasonal hindcasts are examined for their boreal spring seasonal precipitation skill over Northeast Brazil. The co-author was a high school intern.

- # Misra, V. (2006). Understanding the predictability of seasonal precipitation over Northeast Brazil. *Tellus*, 58A, 307-319. Retrieved from <http://www.coaps.fsu.edu/~vmisra/tellus.pdf>

The high seasonal predictability over Northeast Brazil is attributed to tropical Atlantic SST variations in this modeling study.

- # Misra, V. (2005). On the simulation of the intraseasonal variance of the South American summer Monsoon. *Monthly Weather Review*, 133, 663-676. Retrieved from http://www.coaps.fsu.edu/~vmisra/intraseas_jp.pdf

It is shown that diurnal rectification has an impact on the simulation of the intraseasonal variability over South America.

- # Misra, V. (2004). An Evaluation of the Predictability of the Austral Summer Seasonal Precipitation over South America. *Journal of Climate*, 17, 1161-1175. Retrieved from http://www.coaps.fsu.edu/~vmisra/southamerica-predictability_jp.pdf

Predictability from dynamical seasonal prediction and AMIP runs from the same model are compared to isolate the impact of initialized forecasts.

- # Misra, V. (2004). The teleconnection between western Indian and western Pacific Oceans. *Monthly Weather Review*, 132, 445-455. Retrieved from http://www.coaps.fsu.edu/~vmisra/westpacific_jp.pdf

In this modeling study we show that the rainfall variability over the warm pool region in the western Pacific is forced by the western Indian SST variability.

- # Misra, V., & Kanamitsu, M. (2004). Anomaly Nesting: A methodology to downscale seasonal climate simulations from an AGCM. *Journal of Climate*, 17, 3249-3262. Retrieved from <http://www.coaps.fsu.edu/~vmisra/anomalynesting.pdf>

A novel dynamical downscaling strategy is introduced wherein the climatology of the driver model is replaced with reanalysis.

- # Rajendran, K., Krishnamurti, T. N., Misra, V., & Tao, W. -K. (2004). An empirical cumulus parameterization scheme based on TRMM latent heating profiles. *Meteorological Society of Japan*, 82, 989-1006. Retrieved from <http://www.coaps.fsu.edu/~vmisra/>

cumulus_jp.pdf

A statistical cumulus parameterization scheme based on TRMM retrieved diabatic and moistening rates are implemented in a global atmospheric model.

- # Misra, V. (2003). The influence of Pacific SST on the precipitation over southern Africa diagnosed from an AGCM. *Journal of Climate*, 16, 2408-2418. Retrieved from <http://www.coaps.fsu.edu/~vmisra/africa.pdf>

In this modeling study the observed rainfall variability of southern Africa is attributed to the east-west circulation from the Indian Ocean that is modulated by the equatorial Pacific SST.

- # Misra, V., Dirmeyer, P. A., & Kirtman, B. P. (2003). Dynamical downscaling of seasonal simulations over South America. *Journal of climate*, 16, 103-117. Retrieved from http://www.coaps.fsu.edu/~vmisra/dynamic_downscale.pdf

This compares the austral summer seasonal predictability from an AGCM and a regional climate model.

- # Misra, V., Dirmeyer, P. A., & Kirtman, B. P. (2002). A comparison of two land surface schemes in regional climate simulations over South America. *Journal of Geophysical Research (Atmospheres)*, 107, 48-1 48-9. Retrieved from http://www.coaps.fsu.edu/~vmisra/twolandsurface_jp.pdf

A simple two layer soil model is replaced with more sophisticated Simple Simplified Biosphere (SSiB) scheme and its impact is assessed over South America.

- # Misra, V., Dirmeyer, P. A., Kirtman, B. P., Juang, H. -M., & Kanamitsu, M. (2002). Regional Simulation of Interannual Variability over South America. *Journal of Geophysical Research (Atmospheres)*, 107, 3-1 3-16. Retrieved from http://www.coaps.fsu.edu/~vmisra/simulationofSA_jp.pdf

Interannual variation of low level jet over South America is examined in this regional climate simulation.

- # Misra, V., & Yau, M. K. (2001). An ensemble strategy for high-resolution regional model forecasts. *Meteorology and Atmospheric Physics*, 78, 61-74.

A diabatic initialization strategy for mesoscale models to generate probabilistic forecasts is presented.

- # Misra, V., Yau, M. K., & Badrinath, N. (2000). Atmospheric water species budget study in mesoscale simulations of lee cyclones over Mackenzie River Basin. *Tellus*, 52A, 150-161. Retrieved from http://www.coaps.fsu.edu/~vmisra/mackenzie_jp.pdf

A residue free water species budget for 3 lee cyclones over Mackenzie river basin (a GEWEX region) in a mesoscale model is conducted.

- # Krishnamurti, T. N., Sinha, M. C., Misra, V., & Sharma, O. P. (1997). Tropical-middle latitude interactions viewed via wave energy flux in the frequency domain. *Dynamics of Atmospheres and Oceans*, 27, 383-412. Retrieved from <http://www.coaps.fsu.edu/>

~vmisra/Tropical-middle.pdf

Wave energy flux in frequency domain shows energy flux from the monsoon to polar latitudes across the critical latitude contrary to common understanding.

- # Krishnamurti, T. N., Han, S. K., & Misra, V. (1995). Predictions of Dry and Wet spell of the Australian Monsoon. *International Journal of Climatology*, 15, 753-771. Retrieved from http://www.coaps.fsu.edu/~vmisra/aus_monsoon.pdf

An innovative initialization technique to forecast the 30 to 60 day oscillations over Australia using AGCM.

Invited Books

Krishnamurti, T. N., Stefanova, L., & Misra, V. (2012). *An Introductory Course in Tropical Meteorology*. Springer Verlag.

Edited Books

Misra, V. (Ed.). (in press). *Muti-disciplinary assessment of the Southeastern US climate*. Regional Environmental Change, Springer.

This is a special supplemental issue of a journal on the mutli-disciplinary assess of the Southeastern US climate. I was the guest editor for this special issue. It has 15 articles covering the application of climate science in ecology, hydrology, crop science, economy, and social science.

Invited Book Chapters

Miller, A. J., Collins, M., Gualdi, S., Jensen, T. J., Misra, V., Pezzi, L. P., Pierce, D. W., Putrasahan, D., Seo, H., & Tseng, Y. -H. (in press). The science of ocean prediction. In N. Pinardi, K. Brink, & P. Lermusiaux (Eds.), *The Sea* (46 pages). Springer.

- # Krishnamurti, T. N., Misra, V., Bhaskar, J., & Tewari, M. (1995). Recent Research Contributions on the South Asian Monsoon. In R. A. Pielke Jr., & R. A. Pielke Sr. (Eds.), *Hazards and Disasters* (pp. 270-310). Routledge, London. Retrieved from <http://www.coaps.fsu.edu/~vmisra/recent-southasia.pdf>

A review article on recent research (as in 1995) conducted fundamentally on Indian summer monsoon variability.

Refereed Encyclopedia Entries

Misra, V. (2014). Ocean-Atmosphere Interaction. In Y. Q. Wang (Ed.), *Encyclopedia of Natural Hazards*. Taylor and Francis.

Invited Reviews

Misra, V. (in press). Modeling Uncertainty in the Earth Sciences. *Bulletin of American Meteorological Society*, 3 pages.

Invited Newsletter Articles

Misra, V., & Powell, M. (2015, June). There are better ways to quantify how big and bad a hurricane is. *The Conversation, online*, 1-1. Retrieved from <https://theconversation.com/there-are-better-ways-to-quantify-how-big-and-bad-a-hurricane-is-40137>

Douglas, A. V., Enfield, D. B., & Misra, V. (2013, May). A review of recent research activities within the Intra-Americas Science Climate Processes Program (IASCLiP). *GEWEX*, 18, 2-4. Retrieved from <http://www.clivar.org/sites/default/files/Exchanges/Exchanges%2061.pdf>

Misra, V. (2013). NOAA Climate Prediction Task Force. *US CLIVAR Variations*, 11, 27-28.

Presentations

Invited Papers at Conferences

For invited papers at conferences, 50.0% were national, 50.0% were regional in scope.

Misra, V. (accepted). *Florida Climate Institute Seasonal Hindcasts at 50km grid resolution*. Paper to be presented at Southeast Climate Consortium--Fall Meeting, SECC, Tifton, Georgia. (Regional)

Misra, V. (accepted). *Understanding climate change in the southeast US from (recent) past, present, and future, Ecology of the Everglades in the Context of Climate Change*. Paper to be presented at Webinar in Hydrology, South Florida Water Management District, Webinar. (Regional)

Misra, V. (accepted). *Understanding climate change in the southeast US from (recent) past, present, and future, Hydrology of the Everglades in the Context of Climate Change*. Paper to be presented at USGS, CES, Sea Grant Sponsored Workshop, Florida Atlantic University-Davie Campus, Ft. Lauderdale. (State)

Misra, V. (presented 2012, August). *IASCLiP Modeling*. Paper presented at IASCLiP Appraisal, US CLIVAR, Washington DC. (National)

Program managers from NSF, NOAA, DOE attended this presentation.

Misra, V. (presented 2012, June). *Reconciling the differing projections for the wet season over the southeastern US*. Paper presented at Landscape and Climate Science and Scenarios Workshop, Peninsula Florida Landscape Conservation Cooperative, St. Petersburg, Florida. (Regional)

Nonrefereed Papers at Conferences

For nonrefereed papers at conferences, 23.1% were international, 30.8% were national, 38.5% were regional, 7.7% were state in scope.

Misra, V., & Mishra, A. (presented 2015, December). *The challenge of simulating the regional climate over Florida*. Paper presented at AGU Fall meeting, AGU, San Francisco, California. (International)

Misra, V. (presented 2015, November). *Predicting integrated kinetic energy of Atlantic tropical cyclones*. Paper presented at Hurricane Forecast Improvement Project Monthly Teleconference, NOAA, Virtual. (National)

Misra, V. (presented 2015, October). *What is happening to the wet season of Florida*. Paper presented at Southeast Climate Consortium Fall meeting, SECC, Athens, Georgia. (Regional)

Misra, V., & Bastola, S. (presented 2015, October). *Reconciling droughts and landfalling tropical cyclones in the southeastern US*. Paper presented at 40th Climate Diagnostics and Prediction Workshop, NOAA, Denver, Colorado. (National)

Misra, V. (presented 2015, September). *The sensitivity of regional coupled ocean-atmosphere simulations over the Intra-Americas Seas to the Prescribed bathymetry*. Paper presented at Observing and Modeling Climate Variability in the Intra-Americas Seas and Impacts on the Continental Americas and the Caribbean Virtual Workshop, US CLIVAR, Virtual. (International)

Misra, V. (presented 2013, November). *Putting Southeast US extreme forecasts in action*. Paper presented at RISA annual conference, NOAA, San Diego, California. (National)

Misra, V. (presented 2013, July). *The Track Integrated Kinetic Energy (TIKE) of Atlantic Tropical Cyclones*. Paper presented at Davos Atmosphere and Cryosphere Assembly, IUGG, Davos, Switzerland. (International)

Kozar, M., & Misra, V. (presented 2013, May). *Atlantic Warm Pool Climatology within*

Historical CMIP5 Runs. Paper presented at SECC-Spring Meeting, SECC, Savannah, Georgia. (Regional)

Misra, V. (presented 2013, January). *Learning to tailor seasonal climate prediction to a stakeholder group in Florida*. Paper presented at RISA annual conference, NOAA, San Diego. (National)

DiNapoli, S., & Misra, V. (presented 2012, November). *FLAReSI.0*. Paper presented at SECC Fall planning meeting, SECC, Tifton, Georgia. (Regional)

Misra, V. (presented 2012, November). *New sources of historical and projected climate data*. Paper presented at Southeast Climate Consortium Fall Planning Meeting, SECC, University of Georgia, Tifton. (Regional)

Misra, V. (presented 2012, October). *Florida Climate Institute-Florida State University Seasonal Hindcasts at 50km*. Paper presented at Climate Impacts working group meeting, Florida Water and Climate Alliance, Orlando Utility Corporation, Orlando. (State)

Misra, V. (presented 2012, July). *A perspective on reanalysis*. Paper presented at Department Seminar, Center for Atmospheric Sciences, Indian Institute of Technology, New Delhi, India, New Delhi. (Regional)

Invited Keynote and Plenary Presentations at Conferences

For invited keynote and plenary presentations at conferences, 66.7% were international, 33.3% were regional in scope.

Misra, V. (presented 2014, November). *Why is regional climate modeling critical for climate change projections?* Keynote presentation at International workshop on risk information on climate change, Japan Agency for Marine Earth Science and Technology, Yokohama, Japan. (International)

Misra, V. (presented 2012, March). *Understanding climate change in the southeast US: (recent) past, present and future*. Keynote presentation at Hydrology of the Everglades in the Context of Climate Change, USGS, Florida Sea Grant, Florida Atlantic University, Boca Raton, Florida. (Regional)

* Misra, V. (presented 2011, May). *Scenarios for Planning*. Plenary presentation at Climate Information for Managing Risks, UF/SECC/FCI, Orlando, FL. (International)

The talk gave new perspectives on climate scenarios relevant to the southeast US, which could be useful for planning across wide range of disciplines.

Invited Presentations at Symposia

For invited presentations at symposia, 100.0% were international in scope.

Misra, V. (presented 2014, November). The conundrums of droughts and landfalling tropical cyclones in the southeastern US. In Shelby Krantz (Chair), *International Symposium on Weather and Climate Extremes, Food Security and Biodiversity*. Presentation at the meeting of George Mason University, George Mason University. (International)

Nonrefereed Presentations at Conferences

For nonrefereed presentations at conferences, 52.8% were international, 38.9% were national, 5.6% were regional, 2.8% were local in scope.

Misra, V. (presented 2012, May). *Why models project to dry the summers of the southeast US in a future world?* Presentation at Modes of Variability in the Climate System, European Science Foundation, Innsbruck, Austria. (International)

* Misra, V., A. Frumkin, and S. DiNapoli. (presented 2011, June). *A potential feedback of the Amazonian rainfall variability on the Intra-Americas Seas*. Poster presentation at 16th Annual CESM workshop, NCAR, Breckenridge, Colorado. (National)

A. Frumkin and S. DiNapoli work as FSU OPS in my lab.

* Misra, V., J. -P. Michael, R. Boyles, E. Chassignet, M. Griffin, & J. J. O'Brien. (presented 2011, May). *Anthropogenic influence on climate over the Southeast United States*. Presentation at Climate information for managing risks, UF/SECC/FCI, Orlando, FL. (International)

The impact of land cover and land use changes and irrigation on climate is discussed.

* Michael, J. -P., Misra, V., & Chassignet, E. P. (presented 2010, November). *ENSO simulation in two coupled coupled models*. Poster presentation at New strategies for evaluating ENSO processes in climate models, WCRP, Paris, France. (International)

J. -P. Michael is a Ph. D. student under me.

* Stefanova, L., & Misra, V. (presented 2010, November). *Summer seasonal prediction skill over the southeast US*. Presentation at Fall SECC meeting, SECC, Rosentiel School of Marine Sciences, University of Miami. (Regional)

Dr. Stefanova is Assistant Scholar Scientist in COAPS, FSU partially supported by my grants.

* Frumkin, A., & Misra, V. (presented 2010, October). *Predictability and fidelity of dry season downscaled reforecasts over the tropical South American region*. Poster presentation at NOAA 35th Climate diagnostics and prediction workshop, NOAA, Raleigh, North

Carolina. (National)

Graduated with M. S. (Meteorology) and is now working as an FSU OPS in my lab.

- * Misra, V. (presented 2010, October). *Seasonal predictability of the Atlantic Warm Pool in the NCEP CFS*. Presentation at NOAA 35th Climate Diagnostics and Prediction Workshop, NOAA, Raleigh, North Carolina. (National)

The NCEP CFS displays a poor skill in the interannual variations of the Atlantic warm pool.

- * Moeller, L., & Misra, V. (presented 2010, October). *Sea breeze variations in Florida*. Presentation at NOAA 35th Climate diagnostics and prediction workshop, NOAA, Raleigh, North Carolina. (National)

Graduated with M. S. (Meteorology).

- * Pantina, P., & Misra, V. (presented 2010, October). *Tracing the evaporative sources of the dry and wet spells of the Indian Monsoon*. Poster presentation at NOAA 35th Climate diagnostics and prediction workshop, NOAA, Raleigh, North Carolina. (National)

Graduated with M. S. (Meteorology).

- * Stefanova, L., Misra, V., Chan, S., Griffin, M., O'Brien, J. J., & SmithIII, T. J. (presented 2010, October). *Atmospheric regional reanalysis of the Southeast US*. Poster presentation at NOAA 35th Climate diagnostics and prediction workshop, NOAA, Raleigh, North Carolina. (National)

Stefanova is Assistant Scholar Scientist in COAPS, Steven Chan has joined UK Met office after serving as post-doc in my lab for over 2 years.

- * Stroman, A., & Misra, V. (presented 2010, October). *Rendition of the Atlantic warm pool in the reanalyses*. Poster presentation at NOAA 35th Climate diagnostics and prediction workshop, NOAA, Raleigh, North Carolina. (National)

Graduated with M. S. (Meteorology).

- * Stefanova, L., Misra, V., Chan, S., Griffin, M., O'Brien, J. J., & SmithIII, T. J. (presented 2010, May). *Atmospheric regional reanalysis of the Southeast US*. Poster presentation at Spring planning meeting of SECC, SECC, Raleigh, North Carolina. (Regional)

- * Chan, S., & Misra, V. (presented 2010, January). *Southeast US extreme precipitation events footprint in interannual variability*. Poster presentation at 90th AMS General Annual Meeting, AMS, Atlanta, GA. (National)

Steven Chan has joined UK Met office.

- * Misra, V. (presented 2009, November). *Does climate change impact Oyster population in the*

Apalachicola Bay? Presentation at 3rd Annual workshop on aquatic resources, NSF, Alexandria, Egypt. (International)

* Misra, V. (presented 2009, July). *Harvesting model uncertainty for the simulation of interannual variations*. Poster presentation at Advanced Study Program Junior Faculty Forum, NCAR, Boulder, Colorado. (International)

Misra, V. (presented 2007, October). *The Equatorial Cold Tongue Bias in a Coupled Climate Model*. Presentation at NOAA 32nd Climate Diagnostics and Prediction Workshop, NOAA, Tallahassee, FL. (National)

The impact of the coupling interval between ocean and atmospheric models on systematic errors are discussed.

Misra, V. (presented 2007, July). *Multi-scale interactions of the South American Monsoon*. Poster presentation at Celebrating the Monsoons, Indian Institute of Science, Bengaluru, India. (International)

Misra, V. (presented 2007, February). *A comparison of climate prediction and simulation over tropical Pacific*. Poster presentation at 3rd WGNE workshop on systematic errors in climate and NWP models, WGNE, San Francisco. (International)

Misra, V. (presented 2006, April). *Dynamic downscaling of the South American Seasonal Climate*. Poster presentation at 8th International Conference on Southern Hemisphere Meteorology and Oceanography, American Meteorological Society, Foz do Iguacu, Brazil. (International)

Misra, V. (presented 2006, April). *The fidelity of NCEP-CFS seasonal hindcasts over Nordeste*. Poster presentation at 8th International Conference on Southern Hemisphere Meteorology and Oceanography, American Meteorological Society, Foz do Iguacu, Brazil. (International)

Misra, V. (presented 2005, October). *A Journey to "ENSO" Simulation at COLA*. Presentation at 30th Annual climate diagnostics workshop, State College, NOAA, State College, PA. (Local)

The development of a new coupled ocean-atmosphere model to simulate ENSO is discussed.

Misra, V. (presented 2005, October). *The fidelity of NCEP-CFS seasonal hindcasts over Nordeste*. Poster presentation at 30th Annual climate diagnostics workshop, State College, Penn State University, State College, PA. (National)

- # Misra, V. (presented 2005, July). *Addressing the issue of Systematic Errors in RSM*. Presentation at 6th Annual RSM workshop, International research institute for Climate and Society, Palisades, New York. (International)
The benefit of anomaly nesting is discussed.
- # Misra, V. (presented 2005, January). *The seasonal climate variability in the version 3 of the Center for Ocean-Land-Atmosphere Studies (COLA) AGCM*. Poster presentation at 16th Conference on Climate Variability and Change, American Meteorological Society, San Diego, CA. (National)
- # Misra, V. (presented 2004, July). *Dynamic downscaling of seasonal simulations over South America*. Presentation at 4th International RSM conference, Los Alamos National laboratory, Los Alamos, New Mexico. (International)
- # Misra, V. (presented 2004, June). *Anomaly Nesting: A methodology to downscale the South American summer monsoon from an AGCM*. Poster presentation at International CLIVAR conference, World Climate Research Program, Baltimore, MD. (International)
- # Misra, V. (presented 2004, January). *COLA's research and prediction activity over Nordeste*. Presentation at VI International Workshop on Climate Prediction (and evaluation) for Nordeste (north part), Brazilian Meteorological Agency, Fortaleza, Brazil. (International)
- # Misra, V. (presented 2003, October). *The teleconnection between western Indian and western Pacific Oceans, Scale interactions and variability of the monsoons*. Presentation at International Conference on Seasonal to Interannual Variability of the Indian Monsoon, Center for Mathematical modeling and computer simulation, Munnar, India. (International)
- # Misra, V. (presented 2001, February). *Implication of high resolution climate modeling over South America*. Presentation at The Large-scale Biosphere-Atmosphere Experiment in Amazonia (LBA) open ecology meeting, LBA, Atlanta, GA. (International)
- # Misra, V. (presented 2001, January). *Interannual Variability in the Regional Climate Simulation over South America*. Poster presentation at AMS symposium on Climate Variations, the Oceans and Societal Impacts, American Meteorological Society, Albuquerque, New Mexico. (National)
- # Misra, V. (presented 2000, July). *Multi-seasonal Regional Climate Simulation over South America During Three Contrasting Years of the ENSO cycle*. Presentation at 2nd

international RSM conference, Maui High performance computing center, Maui, Hawaii. (International)

- # Misra, V. (presented 2000, June). *The Simulated Moisture Budget over South America During Three Contrasting Years of the ENSO cycle*. Presentation at First Scientific Conference of the Large-Scale Biosphere-Atmosphere Experiment in Amazonia, NASA, Belem, Brazil. (International)
- # Misra, V. (presented 2000, May). *High Resolution Moisture Budget over South America During Three Contrasting Years of the ENSO cycle*. Poster presentation at Spring meeting of American Geophysical Union, AGU, Washington D. C. (National)
- # Misra, V. (presented 1999, July). *An Ensemble strategy for forecasts at meso-* scales using high resolution precipitation observations*. Presentation at 29th International Conference on Radar Meteorology, American Meteorological Society, Montreal, Canada. (International)
- # Misra, V. (presented 1999, June). *Residue Free atmospheric water budget study over Mackenzie River Basin during the life history of lee cyclones*. Presentation at 33rd Annual Canadian Meteorological and Oceanographic Society (CMOS) Congress, CMOS, Montreal, Canada. (National)
- # Misra, V. (presented 1998, October). *An ensemble strategy for high-resolution regional model forecasts*. Presentation at Tropical Rainfall Measuring Mission Workshop, NASA, Tallahassee, FL. (International)

Nonrefereed Presentations at Symposia

For nonrefereed presentations at symposia, 100.0% were state in scope.

Misra, V. (presented 2012, August). Understanding climate change in the southeast US from (recent) past, present, and future. In Jayantha Obeysekera (Chair), *Climate Science for Ecologists*. Presentation at the meeting of Florida Atlantic University and USGS, Webinar. (State)

Invited Workshops

For invited workshops, 40.0% were international, 60.0% were regional in scope.

Misra, V. (2014, November). *Climate Research, Engagement and Tools*. Workshop delivered at Southeast Climate Consortium, Auburn University, Alabama. (Regional)

Misra, V., & Selman, C. (2014, November). *13th International Regional Spectral Model Workshop*. Workshop delivered at Japan agency for marine earth science and technology, Yokohama. (International)

Misra, V. (2014, April). *Climate Research: Overview and challenges in the Southeastern US*. Workshop delivered at Board on Atmospheric Sciences and Climate, National Academy of Science, Tallahassee. (Regional)

Misra, V. (2014, April). *Florida Water and Climate Alliance*. Workshop delivered at University of Florida. (Regional)

Misra, V. (2012, August). *Oscillation Monsoon in the Current and Future Climate*. Workshop delivered at International Center for Theoretical Physics, Trieste, Italy. (International)

Invited Lectures and Readings of Original Work

For invited lectures and readings of original work, 13.9% were international, 8.3% were national, 8.3% were regional, 8.3% were state, 61.1% were local in scope.

Misra, V. (2015, June). *A new modeling strategy for prediction of tropical cyclones*. National Center for Medium Range Weather Forecasting. Delivered at National Center for Medium Range Weather Forecasting. (International)

Misra, V. (2014, August). *An alternative to intensity prediction of tropical cyclones*. Delivered at Center for Atmospheric and Oceanic Sciences, Indian Institute of Science, Bengaluru, India. (International)

Misra, V. (2014, May). *Getting to reliable climate projections for FWC applications*. Delivered at Florida Fish and Wild Life Commission. (Local)

Misra, V. (2014, April). *Climate Science accomplishments in SECC*. Delivered at NOAA Climate Program Office. (National)

Misra, V. (2014, January). *The Intra-American Seas (IAS): What about it?* Delivered at Dept. of Atmospheric Science, University of Illinois at Urbana Champagne. (Local)

Misra, V. (2013, February). *From Stakeholder needs to cyberinfrastructure capitalization*. Delivered at Center for Atmospheric and Oceanic sciences, Indian Institute of Science, Bengaluru, India. (International)

Misra, V. (2012, August). *IASCLiP Modeling*. Delivered at US CLIVAR. (National)

Misra, V. (2012, August). *Understanding climate change in the southeast US from (recent)*

past, present and future. Delivered at Florida Atlantic University, Webinar (Tallahassee, Florida). (State)

Misra, V., & Michael, J. P. (2012, April). *Uncertainties in estimating observed temperature trends in the Southeast US*. Delivered at Southeast Climate Consortium, University of Alabama, Auburn. (Regional)

* Misra, V. (2011, May). *Land of flowers on a latitude of deserts: aiding conservation and management of Florida's biodiversity*. Delivered at Public Water Supply utilities Climate Impact Working Group, Orlando Utility Corporation. (State)

The talk dwelled on the generation of high resolution climate data sets from regional downscaling over the southeast US.

* Misra, V. (2011, April). *CLARReS10: A way to regional reanalysis*. Delivered at College of Marine Science, University of South Florida, St. Petersburg, FL. (Local)

The talk dwelled on the benefit of downscaling from coarse global reanalysis to understand low frequency variations of local features like seabreeze.

* Misra, V. (2011, April). *Downscaling global models: Implications for South Florida*. Delivered at USGS, Florida Atlantic University, Boca Raton, FL. (State)

Overview talk on downscaling of global models in the workshop "Influence of Sea Level Rise on Natural Systems of the Greater Everglades".

* Misra, V. (2010, December). *Potential impact of the Atlantic warm pool on the Caribbean climate*. Delivered at Water Resources Research Institute, University of Virgin Islands, St. Thomas, VI. (Local)

Dwelled primarily on the influence of the Atlantic warm pool on the diurnal variations of the Caribbean Islands.

* Misra, V. (2010, November). *Review of climate variations in the southeast US*. Delivered at South East Climate Consortium, Rosenstiel school of Marine and Atmospheric Sciences, University of Miami, Miami. (Regional)

* Misra, V. (2010, June). *Modeling regional climate variability (Climate change and decadal variability)*. Delivered at UF IFAS extension, Center for Ocean-Atmospheric Prediction Studies, Tallahassee, FL. (Local)

Talk in the workshop: "Adapting to climate variability and change: Tools, Tactics and Strategies for Florida Growers and Ranchers".

* Misra, V. (2010, May). *In pursuit of the summertime predictability over the southeast US*. Delivered at South East Climate Consortium, Raleigh, North Carolina. (Regional)

This talk showed the importance of land-atmosphere interactions on summer rainfall variability over the southeast US.

- * Misra, V. (2009, November). *Climate modeling in the 21st century: Integration of multi-disciplinary science*. Delivered at 3rd International conference of Aquatic Resources, Alexandria, Egypt. (International)

Overview talk on inclusion of coupled interactions in climate models.
- * Misra, V. (2009, June). *IASCLIP modeling and prediction*. Delivered at World Climate Research Program/CLIVAR/VAMOS, San Juan, Puerto Rico. (International)

As chair of the IASCLiP modeling working group, this was a overview talk on modeling and prediction related to Intra-Americas Seas variations.
- * Misra, V. (2008, September). *Coupled interactions of the monsoons*. Delivered at NOAA-Climate Prediction Program for the Americas, Silver Spring, Maryland. (National)

A Modeling study highlighting the uniqueness of the global monsoons in relations to their coupled ocean-land-atmosphere interactions.
- * Misra, V. (2008, August). *Role of shallow inversion clouds as diagnosed in a coupled modeling framework*. Delivered at National Centers for Environmental Prediction, Camp Spring, MD. (Local)

The remote forcing of the shallow stratus clouds on the warm pool over western Pacific was discussed.
- # Misra, V. (2008, June). *Coupled Interactions of the Monsoons*. Delivered at Center for Ocean-Land-Atmosphere Studies, Calverton, Maryland. (Local)
- # Misra, V. (2008, May). *A changing perspective of the Oceans from the Atmosphere*. Delivered at Naval Research Laboratory, Ocean Dynamics and Prediction, Stennis Space Research Center, Stennis, Mississippi. (Local)

This talk shows highlights the notion that the atmospheric variations is a slave of the underlying ocean variability is not always true.
- # Misra, V. (2008, February). *Coupled Interactions of the Monsoons*. Delivered at Department of Meteorology, Florida State University, Tallahassee, FL. (Local)
- # Misra, V. (2008, February). *Coupled Interactions of the Monsoons*. Delivered at Department of Marine, Earth, and Atmospheric Sciences, North Carolina State University, Raleigh, North Carolina. (Local)
- # Misra, V. (2007, March). *ENSO-South American Monsoon Variability*. Delivered at Department of Geography, Ohio State University, Columbus, Ohio. (Local)

The ENSO forcing of the South American Monsoon variability is compared to that with the ENSO forcing of the Amazon variations.

- # Misra, V. (2005, November). *Addressing the issue of Systematic Errors in a regional climate model*. Delivered at Earth System Science Interdisciplinary Center, University of Maryland, College Park, MD. (Local)

Bias corrected lateral boundary forcing to the regional model improves its simulation.

- # Misra, V. (2005, April). *Addressing the issue of Systematic Errors in a Regional Climate Model*. Delivered at Institute for Terrestrial and Planetary Atmospheres, Marine Sciences Research Center, State University of New York, Long Island, New York. (Local)

- # Misra, V. (2005, April). *Addressing the issue of Systematic Errors in a Regional Climate Model*. Delivered at Climate Research Division, Scripps Institute of Oceanography, San Diego, CA. (Local)

- # Misra, V. (2005, March). *Predictability of the Intraseasonal Variability of the South American Summer Monsoon*. Delivered at World Climate Research Program/ CLIVAR/VAMOS, Mexico City, Mexico. (Local)

Diurnal rectification leads to improvement of the simulation of intraseasonal variations over South America.

- # Misra, V. (2005, February). *Development of COLA AGCM V3 for coupled climate integrations*. Delivered at Center for Ocean-Atmospheric Studies, Indian Institute of Science, Bengaluru, India. (Local)

The results at various stages of the development of coupled ocean-atmosphere models was discussed.

- # Misra, V. (2005, January). *Seasonal Prediction of the South American Monsoon*. Delivered at Indian Institute of Tropical Meteorology, Pune, India. (Local)

The impact of initializing AGCM on seasonal prediction errors over South America is discussed.

- # Misra, V. (2004, May). *A paradigm for simulating the monsoons at seasonal to intra-seasonal scales*. Delivered at Interational Research Institute for Climate and Society, Columbia University, Palisades, New York. (Local)

The benefit of anomaly nesting is described in the context of the south American monsoon.

- # Misra, V. (1999, July). *Residue Free atmospheric water budget study over Mackenzie River Basin during the life history of lee cyclones*. Delivered at Center for Ocean-Land-Atmosphere Studies, Calverton, Maryland. (Local)

The water species budget for 3 lee cyclones over Mackenzie River Basin is discussed.

Misra, V. (1999, February). *An ensemble strategy for high resolution regional model forecasts*. Delivered at Indian Institute of Technology, New Delhi, India. (Local)

A novel approach of diabatic initialization for high resolution regional models is discussed.

Misra, V. (1997, March). *A statistically based cumulus parameterization that makes use of heating and moistening profiles derived from observations*. Delivered at Department of Atmospheric and Oceanic Sciences, McGill University, Montreal, Canada. (Local)

An empirical cumulus parameterization based on heating and moistening profiles diagnosed from reanalysis is explained.

Misra, V. (1994). *Predictions of dry and wet spells of summer monsoons*. Delivered at National Center for Medium Range Weather Forecast, New Delhi, India. (Local)

A novel initialization approach for atmospheric models to predict the intraseasonal oscillation of the Indian summer monsoon is presented.

Contracts and Grants

Contracts and Grants Funded

Misra, V. (Jan 2015–Dec 2018). *Regionally coupled ocean-atmosphere seasonal hindcasts of the Indian summer monsoon at 10km resolution*. Funded by Ministry of Earth Sciences, India. Total award \$501,783.

Misra, V., & Zierden, D. (Sep 2014–Jun 2015). *NIDIS Apalachicola-Chattahoochee-Flint River Basin Drought Early Warning System: Coping with Drought*. Funded by NOAA. Total award \$10,000.

Misra, V. (Nov 2013–Dec 2015). *Developing multi-model ensemble projections of ecologically relevant climate variables for Puerto Rico and the US Caribbean*. Funded by Department of Interior. Total award \$245,235.

Boyles, R., Wootten, A., Smith, K., Semazzi, F., Misra, V., Stefanova, L., Smith, T., & Blodgett, D. (Oct 2012–Sep 2013). *Synthesis of climate model downscaling products for the southeastern United States*. Funded by USGS. Total award \$16,339.

Misra, V. (Sep 2012–Aug 2013). *The collaborative development of public water supply utility relevant climate information for improved operations and planning*. Funded by NOAA-CSI. Total award \$76,147.

Misra, V. (Sep 2012–Aug 2016). *Climate Variability of the Tropical Western Atlantic Storms: Is*

it hinged to Intra-Americas Seas Climate Processes. Funded by NOAA CPO. Total award \$460,000.

Misra, V. (Aug 2012–Feb 2012). *Lesser Antilles Specific Assessment of the IPCC AR5 Models for the Current Climate*. Funded by USGS-WRRI. Total award \$18,982.

Misra, V., LaRow, T., & Stefanova, L. (Sep 2011–Aug 2014). *Incorporating Climate Change Effects into Next Generation Coastal Inundation Decision Support Systems: An Integrated and Community-Based Approach*. Funded by NOAA. Total award \$390,000.

* Misra, V. (May 2011–Apr 2012). *Environmental Minute*. Funded by College of Arts and Sciences, FSU. Total award \$12,000.

* O'Brien, James J (PI), & Misra, V. (Sep 2010–Aug 2015). *Regional Integrated Sciences and Assessments*. Funded by University of Florida. Total award \$601,500.

* O'Brien, James J (PI), & Misra, V. (Jul 2010–Jun 2013). *Decision Support System for Reducing Agricultural Risks*. Funded by National Inst of Food & Agriculture. Total award \$4,668,768.

Misra's portion: 150,000.

* Misra, V. (PI). (Jun 2010–Nov 2011). *The Sensitivity of the Climate Variations of the SE US from land cover use and management*. Funded by Oak Ridge Associated Universit. Total award \$5,000.

* Misra, V. (May 2010–Feb 2011). *Influence of the Atlantic warm pool on the Lesser Antilles*. Funded by USGS-WRRI. Total award \$20,000.

* Misra, V. (PI), & Chassignet, E. P. (Feb 2010–Mar 2013). *A Land of Flowers on a Latitude of Deserts: Aiding conservation and management of Florida's biodiversity*. Funded by U. S. Geological Survey. Total award \$499,950.

* Misra, V. (PI). (Sep 2009–Sep 2011). *Impact of Climate on Dinoflagellates and Ciguatera Fish*. Funded by University of Florida. Total award \$85,501.

* Misra, V. (PI). (Aug 2009–Jul 2012). *The Experimental High Resolution Seasonal Climate and Hydrological prediction and predictability studies of the Pan-American and South-American Monsoons from intra-seasonal to seasonal scales*. Funded by National Oceanic and Atmospher. Total award \$271,500.

- * Misra, V. (May 2009–Aug 2009). *Multi-parameter estimation for predictability at seasonal to interannual time scales*. Funded by FSU-CRC. Total award \$17,000.

Postdoctoral Supervision

A. Bharadwaj (Apr 2015–present).

Mishra, A. (Jan 2015–present).

Li, H. (Jan 2012–Jan 2014).

- * Bastola, S. (Jan 2011–Oct 2013).

- * Stefanova, L. (Jan 2010–Dec 2011).

- * Chan, S. (Oct 2008–May 2010).

Reviews of My Research and Original Creative Work by Other Authors

Reviews Appearing on a Web Site

Misra, V. (2012). Spotlight Feature Article. *Florida's fragile oasis*. Retrieved from http://www.oar.noaa.gov/spotlite/archive/2012/articles/fragile_oasis/fragile_oasis.html

Misra, V. (2012). Florida's fragile oasis. *Florida's fragile oasis*. Retrieved from <http://www.climatewatch.noaa.gov/article/2012/floridas-fragile-oasis>

Additional Research or Original Creative Work Not Reported Elsewhere

- * Misra, V. (2010). *The IASCLiP modeling plan*. IASCLiP.

This is a white paper document outlining the modeling plan of the Intra-Americas Seas Climate Program, with contributions from peer scientists (climate modelers) across the nation.

Service

With the creation of the new department of the Earth, Ocean and Atmospheric Sciences in FSU, the department service category is critical and essential with the daunting prospect of developing this department from a fresh beginning. I am quite involved in the various committees of the department, including finding opportunities to advertise the department. I am also involved in various activities of committees at the regional, national and international level of my profession.

Florida State University

FSU Department Service

- * Member, Graduate admissions and curriculum committee (for Meteorology program in EOAS) (2010–present).
- * Member, Computer Committee (EOAS) (2010–2012).
- * Member, Computer committee (Dept. of Meteorology) (2009–2010).

FSU Institute or Center Service

- * Member of the climate scenarios working group, State University System Climate change workshop (2011–present).
- * Co-chair, Florida Climate Institute, Steering committee (2010–present).
- * Chair, AR5 task force, Florida Climate Institute (2010–present).
- * Executive committee member, Florida Public Water Supply Utilities Climate Impact Working Group (2010–present).

The Profession

Guest Editing for Refereed Journals

Misra, V. (Ed.). (2012, January). Multi-disciplinary assessment of the Southeast US climate [Special Issue]. *Regional Environmental Change*.

The deadline for submission of this special issue is July 31, 2012.

Guest Reviewer for Refereed Journals

Journal of Atmospheric Sciences (2005–present).

Journal of Hydrometeorology (2005–present).

- # *Mausam* (2005–present).
- # *Journal of Applied Meteorology and Climatology* (2004–present).
- # *Climate Dynamics* (2003–present).
- # *Tellus* (2000–present).
- # *International Journal of Climatology* (1999–present).
- # *Journal of Climate* (1999–present).
- # *Geophysical Research (Atmospheres)* (1997–present).
- # *Geophysical Research (Oceans)* (1997–present).
- # *Journal of Meteorology and Atmospheric Physics* (1997–present).
- # *Monthly Weather Review* (1997–present).

Reviewer for Textbooks

Modeling uncertainty in the Earth Sciences (2012–present).

This review will appear in Bulletin of American Meteorological Society in next 2-4 months.

Chair of a Symposium

- # Misra, V. (Chair). (2006, April). *Program committee of the 8th Southern Hemisphere on Meteorology and Oceanography*. Symposium conducted at the meeting of American Meteorological Society, Foz du Iguazu, Brazil.

Reviewer or Panelist for Grant Applications

National commission for Scientific and Technological Research, Costa Rica (2014–present).

NOAA-CPO (2014–present).

Natural Environment Research Council (NERC), UK (2014–present).

NOAA CPO (2011).

NSF (2011).

NOAA CPPA (2006).

Service to Professional Associations

* Member, The working group is involved in preliminary discussions to bridge collaborations with University scientists and water utility and supply companies, Florida Water and Climate Alliance (2010–present).

* Chair of Working group on modeling development and diagnostics, IASCLiP (2008–present).

* Steering Committee member, Intra-Americas Study of CLimate Processes (IASCLiP) (2008–present).

* Executive committee member, Southeast Climate Consortium (2008–present).

Member of the modeling and data assimilation group, Monsoon Experiment in South America (MESA) (2007–present).

Co-Lead, Lead and chart the modeling activities sponsored by NOAA in the Nation for seasonal to interannual time scales, NOAA Modeling Task Force (2012–2015).

* Meteorological board member, University of California Davis-Lawrence Livermore National Laboratory, Point of Care Technologies (2009–2012).

* International invitee, Material budget within coastal Egypt: current observations and future projections (2009).

Invited participant, Predictability of the intraseasonal variability of the South American summer monsoon, 8th VAMOS CLIVAR panel meeting (2007).

Service to Other Universities

Member of Governance Committee Task Group, *University Center for Atmospheric Research* (2012–present).

The Community

Chair, Intra-Americas Seas Climate Processes Program (2015–present).

Steering Committee Member, Ecology of the Everglades in the Context of Climate Change, USGS, FAU, Florida Sea Grant (2012–present).

- * Steering committee member, Hydrology of the Everglades in the context of climate change, USGS (2011–present).

Additional Service Not Reported Elsewhere

- * Misra, V. (2011). *Directed Payal Patel (High school intern)*. Young Scholar Program.
Anthropogenic influence on diurnal variability over Florida.
- * Misra, V. (2011). *Directed Environmental Minute (broadcast on WFSU channel; radio show)*.
<https://floridacclimateinstitute.org/resources/environmental-minute>.
This is local radio show that is managed and directed by me.
- * Misra, V. (2010). *Directed Danielle Moragas (high school intern)*. Young Scholar Program.
A study of the correlation between the frequency of hurricane landfalls, soil moisture, and rainfall in South Florida.
- * Misra, V. (2010). *Directed Joseph Hernandez (high school intern)*. Young scholar program.
Effect of stratospheric cooling on tropical cyclones.
- # Misra, V. (2006). *George Moomau*. Blair magnet research program (Maryland).
Analysis of large-scale conditions for hurricane development in climate models.
- # Misra, V. (2005). *Yuning Zhang (high school intern)*. Blair Magnet Research Program (Maryland).
The fidelity of NCEP-CFS seasonal hindcasts over Nordeste.

Misra, V. (1999). *Periodically review proposals for NSF and NOAA.*

Misra, V. (1997). *Periodically review journals.* American Meteorological Society, American Geophysical Union, Royal Meteorological Society, Springer, Wiley.

Since joining FSU in Fall 2008, I am on an average reviewing about 9 articles per year.

Review of post-doc applications

* Misra, V. (2010). *I reviewed over 60 applications for two post-doc positions and interviewed 6 before finalizing on the two candidates.*