

Akhilesh Kumar Mishra

Curriculum Vitae

Personal Information

Assistant in Research

Center for Ocean Atmospheric Prediction Studies
The Florida State University, Tallahassee, FL 32306,
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Research Interests

Climate Modeling, Ocean Modeling, Numerical modeling of Global Ocean-Atmosphere coupled system, HYbrid Coordinate Ocean Model (HYCOM), Interannual and decadal variability of Ocean state, Water mass properties and large-scale circulation, Climate variability, Predictability of Coupled Ocean-atmosphere system on various time scales, Mixed Layer ocean modeling, Multi-model and Ensemble forecasting, Global Spectral Modeling, Air-Sea Interaction, Tropical Meteorology, Asian Monsoon, Regional Coupled RSM-ROMS System modeling, Dynamical downscaling and seasonal prediction.

Academic Data

Ph.D. : Ocean and Indian Institute of Tropical Meteorology, 2003-2008
Atmospheric Pune/ University of Pune, India
Science

Thesis title : *Numerical Modelling of the upper ocean dynamics and thermodynamics over the North Indian Ocean*

M. Sc. : Geophysics Banaras Hindu University, Varanasi, India 1997-2000
(Tech.) Meteorology

Dissertation : *Applications of LIDAR in Meteorology*

B.Sc. : Maths, Physics Purvanchal University, Jaunpur India 1993-1996
and Chemistry

Work Experience

December 2011- Research Faculty/Assistant in Center for Ocean-Atmospheric Prediction Studies, Florida State University, Tallahassee, FL- 32306

August 2011 - December 2011 Post Doctoral Scientist in Center for Ocean-Atmospheric Prediction Studies, Florida State University, Tallahassee, FL-32306

October 2008 - August 2011 Post-Doctoral Fellow in Department of Earth Ocean and Atmospheric Science (EOAS), Florida State University, Tallahassee, FL-32306

February 2004 - October 2008 Research Associate in Dept. of Meteorology, Florida State University, Tallahassee, FL -32306

October 2001- February 2004 Research Fellow, Indian Institute of Tropical Meteorology, Pune, India-411008

November 2000 - May 2001 Project Assistant in Center for Atmospheric Sciences, Indian Institute of Technology, Delhi, Hauz Khas, New Delhi, India-110016

(a) Journals

- (i) Misra, V., Danielle Groenen, Amit Bharadwaj and **Akhilesh Mishra**, 2016: The Warm pool variability of the tropical northeast Pacific., accepted for Publications in *Int. Journal. Of Climatology*.
- (ii) Ricardo Farneti, Stephanie M. Downes, Stephen M. Griffies, Simon J. Marsland, Erik Behrens, Mats Bentsen, Daohua Bi, Arne Biastoch, Claus Boning, " Alexandra Bozec, Vittorio M. Canuto, Eric Chassignet, Gokhan Danabasoglu, Sergey Danilov, Nikolay Diansky, Helge Drange, Pier Giuseppe Fogli, Anatoly Gusev, Robert W. Hallberg, Armando Howard, Mehmet Ilicak, Thomas Jung, Maxwell Kelley, William G. Large, Anthony Leboissetier, Matthew Long, Jianhua Lu, Simona Masina, **Akhilesh Mishra**, Antonio Navarra, A.J. George Nurser, Lavinia Patara, Bonita L. Samuels, Dmitry Sidorenko, Hiroyuki Tsujino, Petteri Uotila, Qiang Wang, Steve G. Yeager, An assessment of Antarctic Circumpolar Current and Southern Ocean Meridional Overturning Circulation during 1958–2007 in a suite of interannual CORE-II simulations, *Ocean Modelling* (2015), [doi:10.1016/j.ocemod.2015.07.009](https://doi.org/10.1016/j.ocemod.2015.07.009) *In Press*.
- (iii) Downes, S. M., R. Farneti, P. Uotila, S. M. Griffies, S. J. Marsland, D. Bailey, E. Behrens, M. Bentsen, D. Bi, A. Biastoch, C. Boning, A. Bozec, V. M. Canuto, E. Chassignet, G. Danabasoglu, S. Danilov, N. Diansky, H. Drange, P. G. Fogli, A. Gusev, A. Howard, M. Kelley, M. Ilicak, T. Jung, M. Kelley, W. G. Large, A. Leboissetier, M. Long, J. Lu, S. Masina, **Akhilesh Mishra**, A. Navarra, A. J. G. Nurser, L. Patara, B. L. Samuels, D. Sidorenko, P. Spence, H. Tsujino, Q. Wang, S. G. Yeager, An assesment of Southern Ocean water masses and sea ice during 1988-2007 in a suite of interannual CORE-II simulations, *Ocean Modelling* (2015), [doi:10.1016/j.ocemod.2015.07.022](https://doi.org/10.1016/j.ocemod.2015.07.022) *In Press*.
- (iv) Griffies, S.M., J. Yin, P.J. Durack, P. Goddard, S.C. Bates, E. Behrens, M. Bentsen, D. Bi, A. Biastoch, C. Böning, A. Bozec, **E.P. Chassignet**, G. Danabasoglu, S. Danilov, C. Domingues, H. Drange, R. Farneti, E. Fernandez, R.J. Greatbatch, D.M. Holland, M. Ilicak, J. Lu, S.J. Marsland, **Akhilesh Mishra**, K. Lorbacher, A.J.G. Nurser, D. Salas y Melia, J.B. Palter, B.L. Samuels, J. Schröter, F.U. Schwarzkopf, D. Sidorenko, A.-M. Treguier, Y. Tseng, H. Tsujino, P. Uotila, S. Valcke, A. Aurore, Q. Wang, M. Winton, and X. Zhang, 2014. An assessment of global and regional sea level for years 1993-2007 in a suite of interannual CORE-II simulations. *Ocean Modelling*, **78**, 35-89, [doi:10.1016/j.ocemod.2014.03.004](https://doi.org/10.1016/j.ocemod.2014.03.004).
- (v) Akiyo Yatagai, T. N. Krishnamurti, Vinay Kumar, **A. K. Mishra** and Anu Simon, 2013: Use of APHRODITE rain-gauge based precipitation and TRMM 3B43 products for improving Asian Monsoon seasonal precipitation forecasts by superensemble method, *J. Climate.*, 27(3), pp. 1062-1069, doi: <http://dx.doi.org/10.1175/JCLI-D-13-00332.1>
- (vi) Griffies, S.M., J. Yin, S.C. Bates, E. Behrens, M. Bentsen, D. Bi, A. Biastoch, C. Böning, Böning, A. Bozec, **E.P. Chassignet**, G. Danabasoglu, S. Danilov, C. Domingues, H. Drange, P.J. Durack, R. Farneti, E. Fernandez, P. Goddard, R.J. Greatbatch, D.M. Holland, M. Ilicak, J. Lu, S.J. Marsland, **A. Mishra**, K. Lorbacher, A.J.G. Nurser, D. Salas y Melia, J.B. Palter, B.L. Samuels, J. Schröter, F.U. Schwarzkopf, D. Sidorenko,

- A.-M. Treguier, Y. Tseng, H. Tsujino, P. Uotila, S. Valcke, A. Aurore, Q. Wang, M. Winton, and X. Zhang, **2013**. An assessment of global and regional sea level in a suite of interannual CORE-II simulations: a synopsis. *CLIVAR Exchanges*, **18**(2), 11-15
- (vii) Krishnamurti, T. N., Anu Simon, Aype Thomas, **Akhilesh Mishra**, Dev Sikka, Dev Niyogi, Arindam Chakraborty, Li Li, **2012**: Modeling of Forecast Sensitivity on the March of Monsoon Isochrones from Kerala to New Delhi: The First 25 Days. *J. Atmos. Sci.*, Volume **69**, Issue 8 (August 2012), pp 2465–2487. doi: <http://dx.doi.org/10.1175/JAS-D-11-0170.1>
- (viii) **Mishra, A. K.** and T. N. Krishnamurti. **2012**: Observing System Simulation Experiment for Global Precipitation Mission, PAGEOPH, Volume 169, Issue 3, March 2012, pp 353-365, DOI: 10.1007/s00024-011-0383-2
- (ix) Mitra AK, Iyengar GR, Durai VR, Sanjay J, Krishnamurti T.N., **Mishra A**, Sikka DR. **2011**. Experimental Real-Time Multi-Model Ensemble (MME) prediction of rainfall during monsoon 2008: large-scale medium-range aspects. *Journal of Earth System Science* **120**(1), 1-22pp.
- (x) Krishnamurti, T. N., Arindam Chakraborty, **A. K. Mishra**, **2010**: Improving Multimodel Forecasts of the Vertical Distribution of Heating Using the TRMM Profiles. *J. Climate*, **23**, 1079–1094.
- (xi) Krishnamurti, T.N., **A. K. Mishra**, A. Chakraborty, and M. Rajeevan, **2009**: Improving Global Model Precipitation Forecasts over India Using Downscaling and the FSU Superensemble. Part I: 1–5-Day Forecasts. *Mon. Wea. Rev.*, **137**, 2713–2735.
- (xii) Krishnamurti, T. N., A. D. Sagadevan, A. Chakraborty **A. K. Mishra**, and A. Simon, **2009**: Improving multimodel weather forecast of monsoon rain over China using FSU superensemble. *Adv. Atmos. Sci.*, 26(5), 813–839, doi: 10.1007/s00376-009-8162-z.
- (xiii) Krishnamurti, T. N., **A.K. Mishra**, Anu Simon, Akio Yatagai, **2009**: Use of a dense rain gauge network over India for improving blended TRMM products and downscaled weather models; Vol. 87A, *Journal of Met. Soc. of Japan*, pp.393-412. doi:10.2151/jmsj.87A.393
- (xiv) Krishnamurti, T.N., C. Gnanaseelan, **A. K. Mishra**, and A. Chakraborty, **2008**: Improved Forecasts of the Diurnal Cycle in the Tropics Using Multiple Global Models. Part I: Precipitation. *J. Climate*, **21**, 4029–4043. doi: 10.1175/2007JCLI2106.1
- (xv) Mutemi, J. N., L. A. Ogallo, T. N. Krishnamurti, **A. K. Mishra** and T. S. V. Vijaya Kumar **2007**: Multimodel based superensemble forecasts for short and medium range NWP over various regions of Africa, Volume 95, Numbers 1-2, *Meteorology and Atmospheric Physics*, pp.87-113, doi:10.1007/s00703-006-0187-6.
- (xvi) **Mishra, A. K.**, T. N. Krishnamurti, **2007**: Current status of multimodel superensemble and operational NWP forecast of the Indian summer monsoon, DOI:10.1007/s12040-007-0037-z, Volume 116, Number 5 / October, 2007 *Journal of Earth System Science*, pp369-384.
- (xvii) **Mishra A. K.**, C. Gnanaseelan and P. Seetaramayya, **2004**: ‘A comprehensive investigation of the rain fall along the west coast of India in relation to low level jet and air sea interaction over the Arabian Sea’, *Current Science*, 87 (4), 475-485.

(xviii) Gnanaseelan, C., J.S. Chowdary., **A. K. Mishra** and P.S. Salvekar, **2003**: 'Indian Ocean Dipole mode events in a simple ocean model', *Indian Journal of Marine Sciences*, vol. 32, pp. 294-304.

(xix) Gnanaseelan, C, J.S. Chowdary, **A. K. Mishra** and P.S. Salvekar, **2003**: 'Interannual variability of upper ocean heat content in the Indian Ocean', *Journal of Indian Geophysical Union*, vol. 7, pp. 193-200.

(b) Book Chapter/ Book:

- Krishnamurti T. N., and **A. K. Mishra** April **2011**: Improving Multimodel Forecasts of Monsoon Rainfall over China using the FSU Superensemble, *The Global Monsoon System: Research and Forecast, 2nd Edition*. Chang, C.-P., Y. Ding, N.-C. Lau, R. H. Johnson, B. Wang, and T. Yasunari, Eds., World Scientific Series on Asia-Pacific Weather and Climate, Vol. 5, 608 pp.

(c) Monographs:

- Krishnamurti, T.N., A. Simon, Aype Thomas, **Akhilesh Mishra**, Dev Sikka, Dev Niyogi, Arindam Chakraborty and Li Li, **2011**: Modeling of forecast sensitivity on the march of monsoon isochrones from Kerala to New Delhi, first 25 days (shorter version), Published in Monsoon Monograph India Meteorological Department Publications.

(d) Proceedings:

- Anu Simon, **A. K. Mishra** and T. N. Krishnamurti, **2008**: Adjustment of TRMM rainfall algorithm for monsoon land areas. Proc. SPIE, Vol. **7148**, 71480H (2008); doi:10.1117/12.80642
- C. Gnanaseelan, Bijoy Thompson, **A.K. Mishra**, Vaid, B.H. and Salvekar, P.S., **2003**: 'Effect of open ocean circulation on coastal sea level over the west coast of India, Proceedings of the conference on hydraulics and water resources - HYDRO 2003, PP 247-253.

(e) Other Reports:

- **Mishra A.K.** and C. Gnanaseelan, **2006**: 'Mixed Layer dynamics and thermodynamics in the Central Arabian Sea', WMO CAS/JSC WGNE report, 2006, 8-17.
- Krishnamurti, T. N., **A. K. Mishra**, **2006**: "Current status of multimodel superensemble for the 2004 season". FSU Research Report No.135.
- C. Gnanaseelan, **A.K. Mishra**, Bijoy Thompson and Salvekar, P.S., **2003**: Thermodynamics and dynamics of the upper ocean mixed layer in the central and eastern Arabian Sea, IITM Research Report, No RR - 098, August 2003, 37 pp

Tutorials, Workshop, Conference:

- i) **5th University of Florida Water Institute Symposium** Tuesday, February 16, 2016 - Wednesday, February 17, 2016
- ii) 2016 American Geophysical Union-Ocean Sciences Meeting, 21-26 February 2016, New Orleans, LA USA.
- iii) First Gridpoint Statistical Interpolation (GSI) Data Assimilation System workshop (June 28, 2011) and the Second GSI Community Tutorial (June 29 to July 1, 2011) at the NCAR Foothills Laboratory, **Boulder, Colorado**, USA.
- iv) Western Pacific Geophysics Meeting, 22-25 June 2010, Taipei, Taiwan. (<http://www.agu.org/meetings/wp10/>)

- v) Participated in *Joint Mathematics meeting organized by American Mathematical Society* in **New Orleans, LA, USA** during January 5-8, 2007.
- vi) Regularly attended and presented work in NASA's annual GPM/TRMM science meetings during 2004-2011.
- vii) Participated in annual *AMS Conference*, organized in **New Orleans, LA, USA** during January 22nd to January 24th 2008.

Oral and Posters Presentations:

- ❖ **Akhilesh Mishra** and Vasu Misra, "The Role of High-resolution Air-Sea coupling on the Indian Monsoon", 2016 American Geophysical Union-Ocean Sciences Meeting, 21-26 February 2016, New Orleans, LA USA
- ❖ Vasu Misra and **Akhilesh Mishra**, 2015, "The Challenge of Simulating the Regional Climate over Florida", December 14-18, AGU Fall Meeting (<http://fallmeeting.agu.org/2015/>).
- ❖ Akhilesh Mishra and Vasu Misra, **5th UF Water Institute Symposium** Gainesville, Florida during February 16-17, 2016.
- ❖ Vasu Misra and **Akhilesh Mishra**, 2015, "The Sensitivity of Regional Coupled Ocean-Atmosphere Simulations over the Intra-Americas Seas to the Prescribed Bathymetry", Climate Variability in the Intra-Americas Seas Virtual Workshop, September 9-11, 2015 (<http://usclivar.org/meetings/2015-iasclip-virtual-workshop>).
- ❖ E. Chassignet, J. Lu, **Akhilesh Mishra**, A., Bozec, CORE II Simulations with HYCOM, (http://www.clivar.org/sites/default/files/WGOMD/activities/190/wgomd10_HYCOM_core2.pdf), presented in 10th Session of CLIVAR Working Group on Ocean Model Development (WGOMD), 11-13 January **2012**, Institute of Marine Sciences, Venice, Italy.
- ❖ Poster by Amit Bhardwaj, T. N. Krishnamurti, O. P. Sharma and **A. K. Mishra** in IITM Golden Jubilee International Conference (OCHAMP), 21st to 25th February **2012**, On improving the Advanced Research WRF Forecast with the multimodel Superensemble Technique.
- ❖ Poster by Akiyo Yatagai, T. N. Krishnamurti, **A. K. Mishra**, N. Yasutomi, A. Hamada, V. Kumar, and A. Simon, **2011**: Utilization of a high-resolution daily rain-gauge based precipitation product for an improvement of the Asian monsoon forecastsing" during *91st Annual Meeting*. Seattle, WA 23–27 January 2011.
- ❖ Poster by T. N. Krishnamurti and **Akhilesh K Mishra**, **2010**: "Design of OSSE for NASA's Global Precipitation Mission (GPM)" in NASA's Precipitation Measurement Mission (PMM) Science Team Meeting Seattle Marriott Waterfront Seattle, WA, during November 1-4, 2010.
- ❖ **Mishra, A. K.**, T. N. Krishnamurti and Vinay Kumar, **2010**; Seasonal precipitation forecast over the Taiwan region using FSU multimodel Superensemble and simple downscaling, invited talk (on behalf of Prof. Krishnamurti) in Western Pacific Geophysics Meeting, 22–25 June 2010, Taipei, Taiwan. (<http://www.agu.org/meetings/wp10/>)
- ❖ Krishnamurti T. N., A. Simon, **A. K Mishra**, Lisa Bucci, Edward Bensman, A Thomas, **2010**: Some observational and forecast issues, on different space time scales, for clouds using CLOUDSAT/CALIPSO/ISCCP and model ensemble Presentations given at the

ECMWF/JCSDA Workshop on Assimilating Satellite Observations of Clouds and Precipitation into NWP Models, 15 - 17 June 2010.

- ❖ Tiruvalam Krishnamurti, Vinay Kumar, **A. K. Mishra**, Anu Simon, Akiyo Yatagai, **2010**: Seasonal Climate forecasts with the FSU Multimodel Superensemble including a downscaling component for the Japan region, in Japan Geoscience Union Meeting, Makuhari Chiba Japan during may 23-28 2010.
- ❖ T. N. Krishnamurti and **Akhilesh K Mishra. 2008**: “ Use of dense rain gauge network over India for improving blended TRMM products and downscaled weather models” *The 3rd International TRMM Science Conference, sponsored by the National Aeronautics and Space Administration (NASA) at Bally's Hotel in Las Vegas, NV USA Feb. 4-8, 2008.*
- ❖ T. N. Krishnamurti, A. D. Sagadevan and **Akhilesh K Mishra, 2008**: “Improving multimodel monsoon weather over China using FSU Superensemble” October 21st 2008. *WMO Fourth International Workshop on Monsoons (IWMIV) 20-25 October 2008, Beijing, China.*
- ❖ Poster presentation presented in Symposium on Asian Winter Monsoon by Rao, D.V. Bhaskar Krishnamurti T.N. Chakraborty, A., **Mishra, A. K., 2006**: “Weather and Climate Prediction of the Northeast Monsoon over India Using Multi-model Superensemble Approach”, *Winter MONEX A Quarter Century and Beyond, 4-7 April 2006, Kuala Lumpur, Malaysia*
- ❖ **Mishra A. K. et al (2006)**: “Florida State University multimodel based forecasting of Indian Monsoon” in **Department of Atmospheric Sciences, CUSAT, Cochin India** on April 13th 2006.
- ❖ **Mishra A. K. et al (2003)**: “Simulation of Indian Ocean dipole in simple mixed layer model” for *National Hindi Workshop on Ocean Sciences, 2003 at Indian National Centre for Ocean Information Services, Hyderabad, India* on September 1st 2003.
- ❖ **Mishra A. K. et al (2002)**: “Diurnal variation of oceanic mixed layer at a point in northern Arabian Sea” in a symposium in *National Symposium on: Advances in the Frontier areas of Meteorology at the turn of the millennium* during 29-31 October, at **Andhra University, Visakhapatnam.**

Award, Fellowship, Honor, Recognition

- ◆ IMS Award for the best paper published on Modelling Study on Atmospheric and Oceanic Sciences (Formerly A. D. Vernekar Award) for our paper on Experimental realtime MME prediction, published in JESS, 2011, Vol. 120, Lead Author Dr. Ashish K. Mitra.
- ◆ UGC Fellowship during third year of M. Sc. (Tech), Merit Scholarship during college (U. P. Board)
- ◆ Member of the Editorial Board of International Journal of Earth and Atmospheric Science (ISSN Online: 2349-9222). <http://jakraya.com/journal/ijeas?journalval=Editorial#> Reviewed journal article for Climate Dynamics, International Journal of Climatology, Journal of Earth System Science, Pure and Applied Geophysics and Meteorology and Atmospheric Physics.
- ◆ PhD examiner for Department of Physics of Gujarat University, India.

References

- Prof. T.N. Krishnamurti Robert O'Lawton Distinguished Professor Department of

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- Prof. (Dr.) Eric Chassignet, Director, Center for Ocean Atmosphere Prediction Studies, The Florida State University, 2000 Levy Ave., Suite 292, Building A, Phone: (850) 645-7288, Fax: (850) 644-4841, Email: echassignet@coaps.fsu.edu
- Dr. V. Misra, Assistant Prof., Department of Earth Ocean and Atmospheric Science, and COAPS, Florida State University, USA. Tallahassee, FL 32306, Ph: (850) 644-2814/ 645-8859, Fax: (850) 644-4841, Email: vmisra@fsu.edu.
- Prof. Sachchida Nand Tripathi, Rajeeva and Sangeeta Lahri Chair Professor, Department of Civil Engineering & Department of Earth Sciences, Faculty Building 314 Indian Institute of Technology Kanpur –208016, Phone: +91-512 2597845 (Off), Email: snt@iitk.ac.in
- Dr. Mark Bourassa, Prof. in Meteorology, Earth, Ocean and Atmospheric Science, Florida State University, P.O. Box 3064520 Tallahassee, FL 32306-4520, Telephone: (850) 645-4788, (850) 644-6923, Fax: (850) 644-4841, Email: mbourassa@coaps.fsu.edu
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- Dr. Atul K Varma Scientist-SG, Atmospheric and Oceanic Sciences Group (AOSG) Geophysical Parameter Retrievals Division (GRD) Space Applications Centre Indian Space Research Organization Ahmedabad 380015, India, Phone 91-79-2691 6050, Email: varma.atul@gmail.com