

Curriculum Vitae

M. RAVICHANDRAN

Director,

Earth System Science Organization-National Centre for Polar and Ocean Research (ESSO-NCPOR),

(An autonomous body under the Ministry of Earth Sciences, Govt. of India)

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Research Interest

- Atmospheric Physics & Ocean dynamics
- Ocean Observation systems (in-situ & satellite)
- Ocean Modelling and data assimilation

Education

- Ph.D in Physics from University of Pune, India (IITM-Pune).
- Master of Science in Physics, Alagappa University, Karaikudi, Tamil Nadu, India (1987)

Position held

S. No	Period	Place of Employment	Designation
1	Dec 1988 – May 1997	Indian Institute of Tropical Meteorology (ESSO-IITM), Pune	Sr. Scientific Asst, Junior Scientific Officer
2	May 1997 – Mar 2001	National Institute of Ocean Technology, (ESSO-NIOT) Chennai	Sr. Project Engineer
3	Mar 2001 – Feb 2007	Indian National Centre for Ocean Information Services (ESSO-INCOIS), Hyderabad	Scientist ‘E’
	March 2007 – Dec 2011		Scientist ‘F’
	Jan 2012 – Nov 2016		Scientist “G”
4	Nov 2016- Present	National Centre for Polar and Ocean Research (ESSO-NCPOR), Goa	Director

Professional Experience:

**1. National Centre for Polar and Ocean Research (ESSO-NCPOR), Goa
(Nov 2016 to Present)**

Director

Responsibility: Overall execution and implementation of Polar Science activities of India and Geo scientific exploration of non-living resources and survey.

2. Indian National Centre for Ocean Information Services (INCOIS) (March 2001 to Nov 2016)

***Head, Modeling and Ocean observation Group &
Deputy Project Director, Indian Argo Project***

Responsibility:

- Formulation and Execution of **Indian Argo Project**
- Design and coordination of ocean observation systems
- Implement Ocean Data assimilation and Modelling for operational ocean services
- Data analysis of Ocean and atmospheric variables to understand dynamics and thermodynamics of the Indian Ocean for different temporal scales.
- Validation of Ocean models and satellite derived Ocean parameters.
- Project Management of the Indian Ocean Modeling sub-projects executed by different National institutes/Universities.
- Sub-mesoscale observations under Monsoon Mission

3. Previous employment at NIOT (May 1997 to March 2001)

Senior Project Engineer,

National Data Buoy Programme, National Institute of Ocean Technology, Madras, India.

Responsibility:

- Project formulation and implementation of **National Data Buoy Moored buoy Programme**
- Data Management and Quality control of Moored Buoy data (met-ocean buoys)
- Data analysis and quality control & Generation of knowledge products
- Incorporation of additional sensors, Deployment /retrieval/ Servicing of Data buoys
- Value added services to Port and Harbours.

4. Previous Employment at IITM, Pune (Dec 1988 to May 1997)

Sr. Scientific Asst. & Junior Scientific Officer

Instruments and Observational Technique Division, Indian Institute of Tropical Meteorology, Pune

Responsibility:

- Development of Instruments for Cloud electrification studies
- Study on Lightning Location systems
- Analysis atmospheric data to understand Global Electric Circuit
- Fundamental research on Atmospheric electricity

Member of International committee / bodies

- Vice-President, SCAR of International Science Council (Capacity Building) (2018-present)
- Council Member, International Arctic Science committee (IASC) (2016-present)
- Alternate Delegate-India, Scientific Committee on Antarctic Research (SCAR) (2016-Present)
- Indian Rep: Council of Managers of National Antarctic Programs (2016 to present)
- Alternate Delegate-India, Antarctic Treaty System (2016-Present)
- Co-Chair, Indian Ocean Panel of GOOS/CLIVAR, Climate Research program of WCRP (2012-2016)
- Member, International Argo Steering Team & Regional Argo Co-ordinator for the Indian Ocean (2005 to 2017)
- Member, SIBER (Sustained Indian Ocean Biogeochemical and Ecological Research) Scientific Steering Committee (2010- 2017)
- Ocean Expert: WMO/IOC capacity building

Member of Professional society

- American Geophysical Union, USA
- Indian Meteorological Society, India
- Indian Oceanographic Society, India
- Indian Physics Association, Mumbai, India

Editor, Pure and Applied Geophysics (Atmospheric and Ocean Sciences) (2015 to Present)

Complete list of Publications (Only referred journals)

1. Kamra, A. K and **M. Ravichandran**, (1993), On the Assumption of the Earth's Surface as a perfect Conductor in Atmospheric Electricity, ***J. Geophys. Res. (Atmos)***., Vol. 98, No.D12, 22,875-22,885.
2. **Ravichandran, M.** and A. K. Kamra, (1999), A spherical field meter to measure the electric field vector – Measurements in fair-weather and inside a dust devil, ***Review of Scientific Instruments***, vol.70, Issue 4, 2140-2149.

3. Premkumar, K., **M. Ravichandran**, S.R. Kalsi, D. Sengupta, S. Gadgil, (1999), First results from a new observational system over the Indian Seas. *Current Science*, 78, 323-330.
4. Chintalu G.R., Seetaramayya P., **Ravichandran M.** and Mahajan P.N, (2001), Response of the Bay of Bengal to Gopalpur and Paradip super cyclones during 15-31 October 1999, *Current Science*, 81, 283-291.
5. Sengupta, D. and **M. Ravichandran**, (2001), Oscillations of Bay of Bengal sea surface temperature during the 1998 summer monsoon. *Geophysical Research Letters*, 28, 10,2033-2036
6. Bhat G. S., S. Gadgil, P. V. Hareesh Kumar, S. R. Kalsi, P. Madhusoodanan, V. S. N. Murty, C. V. K. Prasada Rao, V. Ramesh Babu, L. V. G. Rao, R. R. Rao, **M. Ravichandran**, K. G. Reddy, P. Sanjeeva Rao, D. Sengupta, D. R. Sikka, J. Swain and P. N. Vinayachandran, (2001), BOBMEX - The Bay of Bengal Monsoon Experiment, *Bull. Am. Met. Soc.*, 82, 10, 2217-2243.
7. **M. Ravichandran**, P. N. Vinaya chandran, Sudheer Joseph and K. Radhakrishnan, (2004), Results from the First Argo float deployed by India, *Current Science*, Vol. 86, No. 5, 651-659.
8. **M. Ravichandran** and A. K. Kamra,, (2004), A new technique to determine the lightning charge location from the electric field vector measurements, *Journal of Atmospheric and Solar Terrestrial Physics (JATP)*, 66, 349-362.
9. A Parekh, A Sarkar and M. Ravichandran, (2005), Surface winds in the Arabian Sea from MSMR – an empirical approach, *Journal of the Indian Society of Remote Sensing*, 33(1), 121-126.
10. R. R. Rao, M. S. Girish Kumar, **M. Ravichandran**, B. K. Samala, and Nandkumar Sreedevi, (2006), Observed mini-cold pool off the southern tip of India and its intrusion into the south central Bay of Bengal during summer monsoon season, *Geophys. Res. Letters*, Vol 33,(6) L06607, doi:[10.1029/2005GL025382](https://doi.org/10.1029/2005GL025382).
11. R. R. Rao, M. S. Girish Kumar, **M. Ravichandran**, B. K. Samala, and G. Anita, (2006), Observed intraseasonal variability of mini-cold pool off the southern tip of India and its intrusion into the south central Bay of Bengal during summer monsoon season., *Geophys. Res. Letters*, Vol. 33(15), L06607.
12. T. V. S Uday Bhaskar, D. Swain, **M. Ravichandran**, (2006), Inferring mixed-layer depth variability from Argo observations in the western Indian Ocean, *Journal of Marine Research*, 64, 393–406.
13. Murty, V.S.N., M.S.S. Sarma, A. Suryanarayana, D. Sengupta , A. S. Unnikrishnan, Vijayan Fernando, Anselm Almeida, S. Khalap, Areef Sardar, K. Somasundar and **M. Ravichandran**, (2006), Indian Moorings: Deep-sea current meter moorings in the Eastern Equatorial Indian Ocean, *CLIVAR EXCHANGES*, Vol 33, 2006
14. Udaya Bhaskar, D. Swain and **M. Ravichandran**, (2007), Mixed layer variability in Northern Arabian Sea as detected by an Argo float, *Ocean Science Journal*, Vol. 42, No.4, 241-246.
15. G. Anitha, **M. Ravichandran**, and R. Sayanna, (2008), Surface buoyancy flux in Bay of Bengal and Arabian Sea, *Ann. Geophys.*, 26, 395-400.

16. R. R. Rao, M. S. Girish Kumar, **M. Ravichandran**, V.V.Gopalakrishna and P.Thadathi, (2008), A cold pool south of Indo-Sri Lanka Channel and its intrusion into the southeastern Arabian Sea during winter, *Deep Sea Research I*, 55, 1009-1020.
17. Rao, A.D., Joshi, M., **Ravichandran, M.**, (2008), Oceanic upwelling and downwelling processes in waters off the west coast of India, *Ocean Dynamics*, **58** (3-4), 213-226.
18. Udaya Bhaskar, D. Swain and **M. Ravichandran**, (2008), Seasonal variability of Sonic layer Depth in the Central Arabian Sea, *Ocean Science Journal*, **Vol. 43, No.3, 147-152**.
19. Gopalakrishna, V. V., R. R. Rao, K. Nisha, M. S. Girishkumar, T. Pankajakshan, **M. Ravichandran**, Z. Johnson, K. Girish, N. Aneeshkumar, M. Srinath, S. Rajesh, and C. K. Rajan, (2009), Observed anomalous upwelling in the Lakshadweep Sea during the summer monsoon season of 2005, *J. Geophys. Res. (Oceans)*, 113, C05001, doi:10.1029/2007JC004240.
20. M. J. McPhaden, G. R. Foltz, T. Lee, V. S. N. Murty, **M. Ravichandran**, G.A. Vecchi, J. Vialard, J. D Wiggert, and L.Yu, (2009), Ocean- Atmosphere Interactions During Cyclone Nargis, *EOS*, Vol. 90, No. 7.
21. Rao, A. D., M. Joshi, and **M. Ravichandran**, (2009), Observed low-salinity plume off Gulf of Khambhat, India, during post-monsoon period,. *Geophys. Res. Lett.*, 36, L03605, 2009 doi:10.1029/2008GL036091.
22. Saheb Paul, Arun Chakraborty, P. C. Pandey, Sujit Basu, S. K. Satsangi, and **M. Ravichandran**, (2009), Numerical simulation of Bay of Bengal circulation features from Ocean General Circulation model, *Marine Geodesy*, Vol.32, Issue.1, Pages 1-18.
23. B. Prasad Kumar, Rahul Barman, S. K. Dube, P. C. Pandey, **M. Ravichandran** and Shailesh Nayak, (2010), Development of a New Comprehensive Ocean Atlas for Indian Ocean utilizing ARGO Data, *Int. J. Climatology*., 30(2), 185-196.
24. Nisha, K., S. A. Rao, V. V. Gopalakrishna, R. R. Rao, M. S. Girishkumar, T. Pankajakshan, **M. Ravichandran**, S. Rajesh, K. Girish, Z. Johnson, M. Anuradha, S. S. M. Gavaskar, V. Suneel, and S. M. Krishna, (2009), Reduced Near-Surface Thermal Inversions in 2005-06 in the Southeastern Arabian Sea (Lakshadweep Sea). *Journal of Physical Oceanography*, **39**, 1184-1199.
25. M. J. McPhaden, G. Meyers, K. Ando, Y. Masumoto, V. S. N. Murty, **M. Ravichandran**, F. Syamsudin, J. Vialard, L. Yu, and W. Yu, (2009), RAMA: The Research Moored Array for African-Asian-Australian Monsoon Analysis and Prediction, *Bulletin of the American Meteorological Society*, vol. 90, No.4, 479-459.
26. D. Swain S. H. Rahman and **M. Ravichandran**, (2009), Comparison of NCEP turbulent heat fluxes with in situ observations over the south-eastern Arabian Sea, *Meteorol Atmos Phys*, DOI 10.1007/s00703-009-0023-x.
27. Udaya Bhaskar, T. V. S., Rahman, S. H., Pavan, I. D., **Ravichandran, M.** and Nayak, S, (2009), Comparison of AMSR-E and TMI sea surface temperature with Argo near-surface temperature over the Indian Ocean, *International Journal of Remote Sensing*, 30:10, 2669 — 2684.
28. Rahman, S. H., D. Sengupta, and **M. Ravichandran**, (2009), Variability of Indian summer monsoon rainfall in daily data from gauge and satellite, *J. Geophys. Res.*, 114, D17113, doi:10.1029/2008JD011694.

29. R. R. Rao, M. S. GirishKumar, **M. Ravichandran**, A. R. Rao , V. V. Gopalakrishna, P.Thadathil, (2009), Interannual variability of Kelvin wave propagation in the waveguides of the equatorial Indian Ocean, the coastal Bay of Bengal and the southeastern Arabian Sea during 1993–2006. *Deep Sea Research-I*, doi:10.1016/j.dsr.2009.10.008.
30. Roemmich, M. Belbeoch, P.J.V. Belchi, H. Freeland, W.J. Gould, F. Grant, M. Ignaszewski, B. King, B. Klein, K.A. Mork, W.B. Owens, S. Pouliquen, M. **Ravichandran**, S. Riser, A. Sterl, T. Suga, M.-S. Suk, P. Sutton, V. Thierry, P.-Y. LeTraon, S. Wijffels, J. Xu, (2009), Argo: the challenge of continuing 10 years of progress. *Oceanography* vol. 22, 3, 46-55.
31. Freeland H. J., Dean Roemmich, Silvia L. Garzoli, Pierre-Yves Le Traon, **Muthalagu Ravichandran**, Stephen Riser, Virginie Thierry, Susan Wijffels, Mathieu Belbéoch, John Gould, Fiona Grant, Mark Ignazewski, Brian King , Birgit Klein, Kjell Arne Mork, Breck Owens, Sylvie Pouliquen, Andreas Sterl, Toshio Suga, Moon-Sik Suk, Philip Sutton, Ariel Troisi, Pedro Joaquin Vélez-Belchi, and Jianping Xu, (2010), Argo – A decade of progress. in *Proceedings of OceanObs'09: Sustained Ocean Observations and Information for Society (Vol. 2)*, Venice, Italy, 21-25 September 2009, Hall, J., Harrison, D.E. & Stammer, D., Eds., ESA Publication WPP-306, doi:10.5270/OceanObs09. cwp-32.
32. M. J. McPhaden, K. Ando, B. Bourles, H. P. Freitag, R. Lumpkin, Y. Masumoto, V. S. N. Murty, P. Nobre, **M. Ravichandran**, J. Vialard, D. Vousden, W. Yu, (2010), The Global Tropical Moored Buoy Array, in *Proceedings of OceanObs'09: Sustained Ocean Observations and Information for Society (Vol. 2)*, Venice, Italy, 21-25 September 2009, Hall, J., Harrison, D.E. & Stammer, D., Eds., ESA Publication WPP-306, doi:10.5270/OceanObs09. cwp-306.
33. Y. Masumoto, W. Yu, G. Meyers, N. D'Adamo, L. Beal, W. P. M. de Ruijter, M. Dyoulgerov, J. Hermes, T. Lee, J. R. E. Lutjeharms, J. P. McCreary, Jr. , M. J. McPhaden, V. S. N. Murty, D. Obura, C. B. Pattiaratchi, **M. Ravichandran**, C. Reason, F. Syamsudin, G. Vecchi, J. Vialard, L. Yu, (2010), Observing systems in the Indian Ocean, in *Proceedings of OceanObs'09: Sustained Ocean Observations and Information for Society (Vol. 2)*, Venice, Italy, 21-25 September 2009, Hall, J., Harrison, D.E. & Stammer, D., Eds., ESA Publication WPP-306, doi:10.5270/OceanObs09. cwp-60.
34. Cipollini, P., Benveniste, J., Bouffard, J., Emery, W., Gommenginger, C., Griffin, D., Høyer, J., Madsen, K., Mercier, F., Miller, L., Pascual, A., **Ravichandran, M.**, Shillington, F., Snaith, H., Strub, T., Vandemark, D., Vignudelli, S., Wilkin, J., Woodworth, P., Zavala-Garay, J. (2010), The Role of Altimetry in Coastal Observing Systems, in *Proceedings of OceanObs'09: Sustained Ocean Observations and Information for Society (Vol. 2)*, Venice, Italy, 21-25 September 2009, Hall, J., Harrison, D.E. & Stammer, D., Eds., ESA Publication WPP-306, doi:10.5270/OceanObs09. cwp-16.
35. V.V. Gopalakrishna, F.Durand, K.Nisha, M.Lengaigne, T.P.Boyer, J.Costa, R.R.Rao, **M. Ravichandran**, S.Amrithash, L.John, K.Girish, C.Ravichandran, V.Suneel, (2010), Observed intra-seasonal to inter annual variability of the upper ocean thermal structure in the south eastern Arabian Seaduring 2002–2008. DSR-Part 1, *Deep Sea Research, Part-I*, Vol 57 (6), pp 739 – 754.
36. Sindu Raj Parampil, Anitha Gera, **M. Ravichandran**, and Debasis Sengupta, (2010), Intraseasonal response of mixed layer temperature and salinity in the Bay of Bengal to heat and freshwater flux, *J. Geophys. Res. (Oceans)*, 115, C05002, doi:10.1029/2009JC005790.
37. Prasad Kumar Bhaskaran, Ravindran Rajesh Kumar, Rahul Barman, **Ravichandran Muthalagu**, (2010), A new approach for deriving temperature and salinity fields in the

Indian Ocean using artificial neural networks, *J Mar. Sci. Technol*, **15**: 160-175. DOI 10.1007/s00773-009-0081-2.

38. Udaya Bhaskar, D. Swain and **M. Ravichandran**, (2010), Sonic layer depth variability in the Arabian Sea, *International Journal of Oceans and Oceanography*, **4** (1). Pp. 17-28. ISSN 0973-2667.

39. Rao, A. D, Madhu Joshi, Indu Jain and **M. Ravichandran**, (2010), Response of subsurface waters in the eastern Arabian sea to tropical cyclones , *Estuarine, coastal and shelf science*, **89**, 267-276.

40. Mujumdar, Milind and Salunke, Kiran and Rao, Suryachandra A and **Ravichandran, M** and Goswami, BN, (2011), Diurnal Cycle Induced Amplification of Sea Surface Temperature Intraseasonal Oscillations Over the Bay of Bengal in Summer Monsoon Season, *IEEE Geoscience and Remote Sensing Letters* (99). pp. 206-210.

41. T. Boyer, V.V. Gopalakrishna, F Reseghetti, A Naik, V Suneel, **M. Ravichandran**, N P Mohammed Ali, MM Mohammed Rafeeq, and R. Anthony Chico, Investigation of XBT and XCTD biases in the Arabian Sea and the Bay of Bengal with implications for climate studies, *Journal of Atmospheric and Oceanic Technology*, **28**, 2, 266-286.

42. Girish Kumar, MS, **Ravichandran, M**, McPhaden, M J and Rao, RR, (2011), Intraseasonal variability in barrier layer thickness in the south central Bay of Bengal. *J. Geophys. Res. (Oceans)*, **116** (C03009). pp. 1-9. ISSN 0148-0227.

43. S Sil, A. Achakraborty, and M. Ravichandran, (2011) Numerical simulation of surface circulation features over the bay of Bengal using regional ocean modeling system, *Advances in Geosciences: vol.24:Ocean Science (OS)*, 117-130.

44. S. Jena, S Sil, A Chakraborty, and M. Ravichandran (2011), Development of a high resolution Climatology for the Bay of Bengal using Argo observations, *Advances in Geosciences: Vol. 24, Ocean Science (OS)*, 105-116.

45. R.R. Rao, M. S. Girishkumar, M. **Ravichandran**, V V Gopalakrishna, and P.Thandahil (2011), Do cold, low saline waters pass through the Indo-Sri Lanka Channel during winter? *International Journal of Remote Sensing*, doi: 10.1080/01431161.2010.523728. Vol. 32, No. 22, 7383–7398.

46. M. S. Girishkumar, **M. Ravichandran** and Vimlesh Pant, (2012), Observed chlorophyll-a bloom in the southern Bay of Bengal during winter 2006-07, *International Journal of Remote Sensing*, doi: 10.1080/01431161.2011. 563251. Vol. 33, No. 4, 20 February 2012, 1264–1275.

47. Girishkumar, M. S., and **M. Ravichandran**, (2012), The Influences of ENSO on tropical cyclone activity in the Bay of Bengal during October-December, *J. Geophys. Res. (Oceans)*, **117**, C02033, doi:10.1029/2011JC007417.

48. Neethu Chacko, **M. Ravichandran**, R. R. Rao , S. S. C. Shenoi, (2012), An anomalous cooling event observed in the Bay of Bengal during June 2009, *Ocean dynamics*, DOI 10.1007/s10236-012-0525-9.

49. Udaya Bhaskar, T.V.S, D. Swain and **M. Ravichandran**, (2012), Determination of sonic layer depth from XBT profiles and climatological salinities in the Arabian Sea, *International Journal of Earth Sciences and Engineering*, Volume 5, Issue 1, Pages 35-43.

50. Joseph, S., A. J. Wallcraft, T. Jensen, **M. Ravichandran**, S. S. C. Shenoi, and S. Nayak, (2012), Weakening of Spring Wyrki Jets in Indian Ocean during 2006-2011., *J. Geophys. Res. (Oceans)*, 117, C04012, doi:10.1029/2011JC007581.
51. Nisha, P.G., Muraleedharan, P.M. , Keerthi, M.G., Sathe, P.V., **Ravichandran, M.**, (2012), Does sea level pressure modulate the dynamic and thermodynamic forcing in the tropical Indian Ocean? *International Journal of Remote Sensing*, Volume 33, Issue 7, , Pages 1991-2002.
52. **M. Ravichandran**, M. S. Girishkumar and Stephen Riser, (2012), Observed variability of chlorophyll-a using Argo profiling floats in the south eastern Arabian Sea, *Deep-Sea Res. Part I: Oceanographic Research*, 65, pp 15-25, DOI.10.1016/j.dsr.2012.03.003.
53. P Prakash, S Prakash, H. Rahaman, **M. Ravichandran**, and S. Nayak, (2012), Is the trend in Chlorophyll-a in the Arabian Sea decreasing?, *Geophys. Res. Letters*, 39 (23) .
54. Chatterjee, D. Shankar, S. S. C. Shenoi, G. V. Reddy, G. S. Michael, **M. Ravichandran**, V. V. Gopalkrishna, E. P. Rama Rao, T. V. S. Udaya Bhaskar, and V. N. Sanjeevan, (2012), A New Atlas of Temperature and Salinity for the North Indian Ocean, *Journal of Earth System Science*, 121 (3), pp 559-595.
55. K. Maneesha V.S.N. Murty, **M. Ravichandran**, T. Lee, Weidong Yu M.J. McPhaden, (2013), Upper ocean variability in the Bay of Bengal during the tropical cyclones Nargis and Laila, *Prog. Oceanogr.*, 106, 49-61 <http://dx.doi.org/10.1016/j.pocean.2012.06.006>.
56. Kalpesh Patil, M. C. Deo, Subimal Ghosh, and **M. Ravichandran**, (2013), Predicting Sea Surface Temperatures in the North Indian Ocean with Nonlinear Autoregressive Neural Networks, *International Journal of Oceanography* Article ID 302479, 11 pages <http://dx.doi.org/10.1155/2013/302479>.
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58. S. Siva Reddy, **M. Ravichandran**, and M. S. Girishkumar , (2013), Evaluation of ASCAT based daily gridded 1 winds in the tropical Indian Ocean, in press, *J. Atmos. Oceanic Technol.* doi:10.1175/JTECH-D-12-00227.1,
59. M. S. Girishkumar, **M. Ravichandran**, and M. J. McPhaden, (2013), Temperature inversions and their influence on the mixed layer heat budget during the winters of 2006–2007 and 2007–2008 in the Bay of Bengal, *J. Geophys. Res. (Oceans)*, VOL. 118, 1–12, doi:10.1002/jgrc.20192.
60. **M. Ravichandran**, D. Behringer, S. Sivareddy, M.S. Girishkumar, Neethu Chacko, R. Harikumar, (2013), Evaluation of the Global Ocean Data Assimilation System at INCOIS: The Tropical Indian Ocean, *Ocean Modelling.*, 69, 123-135, <http://dx.doi.org/10.1016/j.ocemod.2013.05.003>.
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62. S. Ramesh, G.A. Ramadass, **M. Ravichandran** and M. A. Atmanand (2013), Dissolved oxygen as a tracer for intermediate water mixing characteristics in the Indian Ocean, *Current Science*, 1724-1729.

63. S. Prakash, P Prakash, and **M. Ravichandran**, (2013), Can oxycline depth be estimated using sea level anomaly (SLA) in the north Indian Ocean?, *Remote Sensing Letters*, 4(11), 1097-1106.
64. A. J. Lucas, E. L. Shroyer, H. W. Wijesekera, H. J. S. Fernando, E. D'asaro, **M. Ravichandran**, S. U. P. Jinadasa, J. A. Mackinnon, J. D. Nash, R. Sharma, L. Centurioni, J. T. Farrar, R. Weller, R. Pinkel, A. Mahadevan, D. Sengupta, and A. Tandon, (2014), Mixing to Monsoons: Air-Sea Interactions in the Bay of Bengal, *EOS, TRANSACTIONS*, American Geophysical Union, Volume 95 Number 30, PAGES 269–276.
65. H. Rahaman, **M. Ravichandran**, D. Sengupta, M.J. Harrison, and S.M. Griffies, Development of a regional model for the North Indian Ocean, *Ocean Modelling*, 75, 1-19.
66. M. S. Girishkumar, K. Suprit, S. Vishnu, V. P. Thanga Prakash and **M. Ravichandran**, (2014), The role of ENSO and MJO on rapid intensification of tropical cyclones in the Bay of Bengal during October–December, *Theor Appl Climatol*, DOI 10.1007/s00704-014-1214-z.
67. MS Girishkumar, K Suprit, Jayaram Chiranjivi, TVS Udaya Bhaskar, **M Ravichandran**, R Venkat Shesu, E Pattabhi Rama Rao, (2014), Observed oceanic response to tropical cyclone JAL from a moored buoy in the south-western Bay of Bengal, *Ocean Dynamics*, Volume 64, Issue 3, pp 325-335.
68. Pottapinjara, V., M. S. Girishkumar, **M. Ravichandran**, and R. Murtugudde, (2014), Influence of the Atlantic zonal mode on monsoon depressions in the Bay of Bengal during boreal summer, *J. Geophys. Res. (Atmos)*, 119, doi:10.1002/2014JD021494.
69. Li, Y., W. Han, T. Shinoda, C. Wang, **M. Ravichandran**, and J. Wang, (2014): Revisiting the Wintertime Intraseasonal SST Variability in the Tropical South Indian Ocean: Impact of the Ocean Interannual Variation, *J. Phys. Oceanogr.* 44(7), 1886-1907.
70. R. R. Rao · V. Jitendra · M. S. GirishKumar · **M. Ravichandran**, S. S. V. S. Ramakrishna, (2014), Interannual variability of the Arabian Sea Warm Pool: observations and governing mechanisms, *Climate Dynamics*, DOI 10.1007/s00382-014-2243-0.
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