

Dr. Anitha Gera

Scientist-F

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<https://scholar.google.com/citations?user=CuWG2fQAAAAJ&hl=en&oi=ao>

<https://www.researchgate.net/profile/Anitha-Gera>

<https://sites.google.com/view/anithagera/home>



Research Areas

- Early Flood Warning – Development, Forecasting, Nowcasting using DWR, AWS Ensemble methods
- Extended Range Weather Prediction: Ensemble prediction- Coupled Ocean Atmosphere Modelling
- Coupled numerical ocean atmosphere modelling and assimilation Configuration, Implementation & Design of experiments
- Coupled physio-bio-geo chemical modelling- Configuration, Implementation & Design of experiments
- Tropical Monsoon Variability, Intraseasonal Variability
- Upper ocean processes & tropical cyclones
- Operational Marine Weather Forecasts: NCAOR & Navy Expeditions
- Estuarine Ecosystem: Pulicat Estuary- Modelling, field survey & ecosystem health
- Coastal ocean cruises: model validation & specific experiments
- Marine Spatial Planning- Modelling of Physico-Bio-Geo-Chemistry for Site feasibility study for Seaweed Cultivation in the Lakshadweep
- Marine Litter: Modelling and Lagrangian tracking

Educational Qualifications

- PhD: (Air Sea Interaction-Physics Faculty) 2009- Osmania University
- M.Sc: Physics- 1997- Nagarjuna University

Professional Training

- NIIT 1993, Diploma in systems Management
- Summer School on the Dynamics of the Indian Ocean, June-July 2010, NIO

Work Experience (24 years, R&d, MoES, 3 years teaching)

- Scientist-F, National Centre for Coastal Research (NCCR), Ministry of Earth Sciences, 2023- till Date
- Scientist-E, National Centre for Coastal Research (NCCR), Ministry of Earth Sciences, May 2019-2023
- Scientist-E, National Centre for Medium Range Weather Forecasting (NCMRWF), Ministry of Earth Sciences, 2016- 2019
- Scientist-D, National Centre for Medium Range Weather Forecasting (NCMRWF), Ministry of Earth Sciences, 2011- 2016
- Proj Scientist-C, Indian National Centre for Ocean Information Services (INCOIS) , Ministry of Earth Sciences, 2008- 2011
- Proj Scientist-B, Indian National Centre for Ocean Information Services (INCOIS) , Ministry of Earth Sciences, 2005- 2008
- Research Fellow, Indian National Centre for Ocean Information Services (INCOIS) , Ministry of Earth Sciences, 2000- 2005
- Lecturer, TJPS PG college, Guntur, 1998-2000
- Lecturer, MRR Degree College, Kodad, 1997-1998

Major Programmes and Achievements

Ocean Research & Modelling

- Development of iFLOWS- Kolkata- Early flood Warning system (EFWS)
- Development and Implementation of DWR, AWS rainfall based nowcasting for- iFLOWS-Chennai EFWS
- Configured NEMO-PISCES for Ecosystem Applications
- Configured CUPOM for PFZ applications,
- Responsible for Argo trajectory data quality control, PFZ generation, Ocean state forecast
- Scientific Studies on Intraseasonal variability heat and fresh water in BoB, Quantification of Surface Buoyancy flux in Indian Ocean using Argo, ISV of MCP

Monsoon Mission

- Developed tools for Extended Range Forecast Products and their operational production, Tools for monitoring hurricane heat potential, real-time monitoring of Ocean observations & data base build for data assimilation
- Real-time Experimental Extended Range- Implementation prediction & verification, Operationalization
- Hindcast assessment of Monsoon Extended Range Forecast issued Coupled models
- Configured & implemented Ocean Atmosphere, physio-biogeo-chemical numerical models UM-NEMO-PISCES for different applications
- Monsoon and Upper Ocean studies, Modelling Sensitivity studies like Impact of biology on physics, Impact of River runoff on ocean thermodynamics, Impact of fresh water on ecology

Numerical Modelling of Weather & Climate

- Operational Marine Weather Forecasting for Southern Indian Ocean Expeditions of NCAOR/NCPOR and Indian Navy- INSV Tarini
- Assessment of Model Performance and verification of Marine Weather Forecasts for Southern Indian Ocean Expeditions

Publications

(27 Peer Reviewed International Journal Publications and 50+ Conference Proceedings)

1. **Anitha Gera**, Gayathri R, Ezhilarasan P, Ranga Rao V and Ramana Murthy M V, *Coupled physical-biogeochemical simulations of upwelling, ecological response to fresh water*, *Ecological Modelling*, 476, p.110246, Jan 2023, IF:3.512
2. **Anitha Gera**, Gupta, A., Mitra, A.K., Rao D, N., Momin, I.M., Rajeevan, M.N., Milton, S.F., Martin, G.M., Martin, M.J., Waters, J. and Lea, D., 2022. *Skill of the extended range prediction (NERP) for Indian summer monsoon rainfall with NCMRWF global coupled modelling system. Quarterly Journal of the Royal Meteorological Society*, 148(742), pp.480-498, <https://doi.org/10.1002/qj.4216>, IF: 7.237
3. **Anitha Gera**, A., Kumaraswami, M., Rao, V.R., Vijay, A., Pandiyarajan, R.S., Ezhilarasan, P. and Murthy, M.R., 2021. *The Pulicat, a distinctive shallow lagoon: Hypersalinity, thermodynamics and meromixis. Estuarine, Coastal and Shelf Science*, p.107292. IF:3.229
4. **Anitha Gera**, Mitra, A.K., McCreary, J.P., Hood, R. and Momin, I.M., 2020. *Impact of chlorophyll concentration on thermodynamics and dynamics in the tropical Indian ocean. Deep Sea Research Part II: Topical Studies in Oceanography*, p.104871. IF:2.887
5. **Anitha Gera**, D.K. Mahapatra, Kuldeep Sharma, Satya Prakash, A.K. Mitra, G.R. Iyengar, E.N. Rajagopal, N. Anilkumar, 2017 *Assessment of marine weather forecasts over the Indian sector of Southern Ocean*, *Polar Science*, 13, 2017, 1-12, <https://doi.org/10.1016/j.polar.2017.04.003>. IF:2.355
6. Ramana Murthy MV, Usha T, Dash SK, Raju SK, Ramu K, **Anitha Gera**, et al, 2024, *Marine spatial planning for a resilient and inclusive blue economy: Lakshadweep, India, a pilot study*, *Current Science*, 126(2), Jan 2024, doi: 10.18520/cs/v126/i2/229-236.
7. P Mishra*, M Begum, **Anitha Gera**, et al *Factors responsible for the sudden outburst of Noctiluca scintillans in the Chennai coastal waters, southeast coast of India- A case study*, *Oceanologia*, IF: 2.526
8. Pandiyarajan R S, Kumaraswami M, **Anitha Gera**, Ramu Karri, Ranga Rao V and Ramana Murthy M V, *Benthic Quality Assessment of a Hypersaline Lake along the Southeast Coast of India*, *Regional Studies in Marine Science*, -21-00553 IF 2.166

9. Vijay, A., Munnooru, K., Reghu, G., **Anitha Gera**, A., Vinjamuri, R.R. and Ramanamurthy, M.V., 2021. Nutrient dynamics and budgeting in a semi-enclosed coastal hypersaline lagoon. *Environmental Science and Pollution Research*, 28(48), pp.69029-69041. IF:3.519
10. Ezhilarasan, P., Basuri, C.K., **Anitha Gera**, , Kumaraswami, M., Rao, V.R. and Murthy, M.R., 2021. Mesozooplankton distribution in relation to the salinity gradient in a tropical hypersaline lake. *Journal of Sea Research*, p.102138. IF:2.287
11. Pandiyarajan R S, **Anitha Gera**, Ramu K, V Ranga Rao V, M V Ramana Murthy M V. Influence of salinity on the meiofaunal distribution in a hypersaline lake along the southeast coast of India. *Environ Monit Assess*. 2022 Feb 18;194(3):199. doi: 10.1007/s10661-022-09829-5.
12. Naidu, S.A., Mawii, L., Rao, V.R., **Anitha, Gera.**, Mishra, P., Narayanaswamy, B.E., Kumar, V.A., Murthy, M.R. and Gupta, G.V.M., 2021. Characterization of plastic debris from surface waters of the eastern Arabian Sea–Indian Ocean. *Marine Pollution Bulletin*, 169, p.112468. IF:4.0
13. **Anitha Gera**, Nagarjuna Rao D, Ankur Gupta, Momin I M, Mahapatra D K, Mitra A K and Rajagopal E N, Performance of the NCMRWF Coupled Modelling System for Extended Range Prediction during Summer Monsoon, AMW-2018 & Prof. Sikka Memorial National Symposium, Bulletin of the Indian Meteorological Society Pune chapter, AMW 2018
14. Srivastava A , **Anitha Gera**, Momin I M, Mitra A K and Gupta A, 2018, Impact of river runoff in the Northern Indian Ocean with emphasis on BoB using NEMO global ocean model, *Acta Oceanologica*, 2020, Vol. 39, No. 3, P. 45–55 IF:1.369
15. A.K.Mitra, I.M.Momin, A.Gupta, **A.Gera**, D.K.Mohapatra, P.P.Saheed, A. Jayakumar and E.N.Rajagopal, Efforts at NCMRWF (India) to Implement a S2S Seamless Modelling System S2S Newsletter, 8 Mar 30, 2018
16. **Anitha Gera**, Ashis. K. Mitra, Debasis K Mahapatra, Imran N Momin, Rajagopal E N and Swati Basu, Sea Surface Height Anomaly and Upper Ocean Temperature over the Indian Ocean during Contrasting Monsoons, *Dynamics of Atmospheres and Oceans*, 2016, DOI:10.1016/j.dynatmoce.2016.04.002
17. **Anitha Gera** et al. , **March 2016**, A report on the NGFS model performance and skill – forecasts for southern ocean expedition by NCAOR, ESSO, MoES, Dec 2014-Feb-2015. NCMRWF Research Report, March 2016
18. Imranali M. Momin, Ashis K. Mitra, Satya Prakash, D.K. Mahapatra, **Anitha Gera** and E.N. Rajagopal, Variability of sea surface salinity in the tropical Indian Ocean as inferred from Aquarius and in situ data sets, 2015, *International Journal of Remote Sensing*, 36(7), 1907-1920
19. Ashis K. Mitra, E. N. Rajagopal, G. R. Iyengar, D. K. Mahapatra, I. M. Momin, **A. Gera**, K. Sharma, J. P. George, R. Ashrit, M. Dasgupta, S. Mohandas, V. S. Prasad, Swati Basu, A. Arribas, S. F. Milton, G. M. Martin, D. Barker and M. Martin, 2013: Prediction of Monsoon using a Seamless Coupled Modeling System, *Current Science*, 104(10),1369- 1379.
20. **Anitha Gera.**, A. K. Mitra, D. K. Mahapatra, I. M. Momin, E.N. Rajagopal and Swati Basu, Sea Surface Height Anomaly and Upper Ocean Heat Content variability in Bay of Bengal during contrasting monsoons 2009 and 2010, *NCMRWF Research Report*, March 2013.
21. Momin. I. M., A. K. Mitra, D.K. Mahapatra, **A. Gera** and E. N. Rajagopal, 2013, Impact of Model Resolutions on Indian Ocean Simulations from Global NEMO Ocean Model, *Ind. J. Geo-Marine Science*, 43(9)
22. Parampil S R **Anitha Gera.**, Ravichandran M and Sengupta Debasis, Intraseasonal Response of mixed layer temperature and salinity in the Bay of Bengal to and fresh water flux, *J.Geophys. Res*, 2010, 115, C05002,
23. **Anitha Gera** and Ravichandran M, [Argo Float of the month-Jun2009](http://wo.jcommops.org/cgi-bin/WebObjects/Argo.woa/wa/floatMonth), Across the Indian Ocean, 2009, <http://wo.jcommops.org/cgi-bin/WebObjects/Argo.woa/wa/floatMonth>
24. Indian Argo Trajectories and Surface Currents, **Anitha Gera** and M Ravichandran, 2008, **Technical Report Report No.INCOIS-MOG-ARGO-TR-03-2008**
25. **Anitha.G.**, M. Ravichandran and R. Sayanna, Surface Buoyancy Flux in Bay of Bengal and Arabian Sea,, *Annales Geophysicae*, 2008, 26(3),395-400.
26. Rao,R.R., M.S.Girish Kumar, M.Ravichandran., B.K.Samala and **G.Anitha**, 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,2006, *Geophys.Res.Lett.*,33, L15606, 2006GL026086.
27. **Anita.G.**, M.Ravichandran and R.Sayanna, Signatures of ‘Active’ and ‘Break’ phases of Indian Summer monsoon in subsurface Argo data.,2005, *J.Environmental Geochemistry*, 8(1&2),237-243.