

Curriculum Vitae

Dr. Vinu K. Valsala,
Scientist-F and Project Director,
Development of Skilled Manpower in Earth System Sciences (DESK),
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Educational background

PhD (2006), in Ocean and Atmospheric Sciences, Hokkaido University, Sapporo, Japan.

Thesis: Pathways and effects of Indonesian Throughflow water in the Indian Ocean: A model study using lagrangian trajectories and passive tracers.

Advisor: Prof. Ikeda Motoyoshi, EES, Hokkaido University, Japan.

M.Sc. (2002), in Physical Oceanography, Cochin University of Science and Technology, India.

Thesis: Application of Weibull model for significant wave height forecast and wave height statistics.

Advisor: Dr. Muraleedharan G.

B.Sc. (1999), in Physics, University of Kerala, Kerala, India.

Positions held

- Scientist-F, 2020-Present, Project Director, Development of Skilled Manpower in Earth System Sciences (DESK), Indian Institute of Tropical Meteorology, Pune, India.
- Scientist-E, 2015-2020, Project Director, Development of Skilled Manpower in Earth System Sciences (DESK), Indian Institute of Tropical Meteorology, Pune, India.
- Scientist-D, 2011-2015, Center for Advanced Training in Earth System Science and Climate (CAT-ESSC), Indian Institute of Tropical Meteorology, Pune, India.
- NIES Postdoctoral fellow, 2009-2011, CGER, National Institute for Environmental Studies (NIES), Tsukuba, Japan.
- JSPS Postdoctoral fellow, 2007-2009, CGER, National Institute for Environmental Studies (NIES), Tsukuba, Japan.
- NIES Postdoctoral fellow, 2006-2007, CGER, National Institute for Environmental Studies (NIES), Tsukuba, Japan.
- Research Assistant (also PhD candidate), 2003-2006, Graduate School of Earth System Sciences, Hokkaido University, Sapporo, Japan.
- Project Assistant, 2002-2003, Center for Atmospheric and Oceanic Sciences, Indian Institute of Science, Bangalore, India.

Awards and Honors

- Certificate of Merit Award, 2018, Ministry of Earth Sciences, India, for the outstanding contributions in the field of Atmospheric Sciences and Technology.
- Fellow of Indian National Young Academy of Sciences (IN-YAS), Indian National Science Academy (INSA), India. (2015-2020)
- JSPS Postdoctoral Fellow, 2007-2009, Japan: Prestigious award from the Japanese Society for the Promotion of Science for 2-year research in postdoctoral level.
- Center of Excellence (COE) Research Assistant Fellowship, 2003-2006, Earth System Sciences, Hokkaido University, Sapporo, Japan.
- Mitsubishi UFJ Trust Scholarship Foundation, Scholarships for selected PhD candidates, 2004-2006, Tokyo, Japan.
- Summer Fellowship Trainee award, 2001-Summer, National Academy of Science, Bangalore, India.
- Merit Scholarship Award for best Master course student, 1999-2002, CUSAT, Cochin, India.

Research Interests

Oceanic Tracers, Ocean Carbon Cycle, Ocean Tracer Transport Modeling (**OTTM**), application of tracer techniques to detect interannual to interdecadal climate variability of ocean circulations, Numerical Ocean modeling, air-sea CO₂ flux and ocean pCO₂, Biogeochemical modeling and data assimilation, Ocean-atmosphere interaction, Ocean Dynamic-Thermodynamic Model (**ODTM**), Pathways of water masses, Tropical Ocean dynamics, Ocean Modeling, Reduced gravity models, Tropical Indian Ocean climate variability and Indonesian Throughflow.

Refereed Publications

2023

64. Madkaiker, K., Valsala, V., Sreeush, M. G., Mallissery, A., Chakraborty, K., & Deshpande, A. Understanding the seasonality, trends and controlling factors of Indian Ocean acidification over distinctive bio-provinces 2023 J. Geophysical Research, 128, . <https://doi.org/10.1029/2022JG006926>

2022

63. Valsala, V. (2022), The fingerprint of Indian Ocean rain and river water in salinity and circulation, Deep Sea Research-I, Vol. 190, <https://doi.org/10.1016/j.dsr.2022.103912>

62. Valsala V., M. G. Prajeesh, S. Singh (2022), Numerical Investigation of Tropical Indian Ocean Barrier Layer variability, J. Geophysical Research, <https://doi.org/10.1029/2022JC018637>

61. Anjumol Raju, Sijikumar, S., Valsala, V. Yogesh K. Tiwari, Santanu Halder, I. A. Girach, Chaithanya D. Jain & M.. Venkatatnam (2022), Regional estimation of methane emissions over the peninsular India

using atmospheric inverse modelling, *Environ Monit Assess* 194, 647 <https://doi.org/10.1007/s10661-022-10323-1>

60. Faseela Hamza, **Valsala V.**, H. Varikoden (2022), The puzzle of the anchovy–sardine inverse fishery at the south-eastern coast of the Arabian Sea and climate variability, *Fish and Fisheries*, <https://doi.org/10.1111/faf.12667>

59. Jayashree Ghosh, Kunal Chakraborty, Trishneeta Bhattacharya, **Vinu Valsala**, Balaji Baduru, Impact of coastal upwelling dynamics on the pCO₂ variability in the southeastern Arabian Sea, *Progress in Oceanography*, 203, 2022, 102785, <https://doi.org/10.1016/j.pocean.2022.102785>.

58. **Valsala V.**, Is Amundsen-Bellinghousen Seas-Low affecting trace gas air-sea fluxes in the Antarctic Ocean?, *Deep Sea Research Part I*, 183: 103725, May 2022, DOI:10.1016/j.dsr.2022.103725, 1-8

2021

57. Anju, M., **V.Valsala**, B.R.Smitha, G.Bharathi and C.V.Naidu (2021), Observed denitrification in the northeast Arabian Sea during the winter-spring transition of 2009, *Journal of Marine Systems*, Volume 227, doi.org/10.1016/j.jmarsys.2021.103680

56. Halder, S., Y. K. Tiwari, **V. Valsala**, S. Sijikumar, R. Janardanan, S. Maksyutov, (2021), Benefits of satellite XCO₂ and newly proposed atmospheric CO₂ observation network over India in constraining regional CO₂ fluxes *Science of The Total Environment*, 51508, doi.org/10.1016/j.scitotenv.2021.151508.

55. Chakraborty K., **V. Valsala**, T. Bhattacharya, J. Ghosh, (2021), Seasonal cycle of surface ocean pCO₂ and pH in the northern Indian Ocean and their controlling factors, *Progress in Oceanography*, Vol.198, doi.org/10.1016/j.pocean.2021.102683

54. Halder Santanu., Tiwari Y.K., **Valsala V.**, Sreeush M.G., Sijikumar S., Janardanan R., Maksyutov S., Quantification of enhancement in atmospheric CO₂ background due to Indian biospheric fluxes and fossil fuel emissions, *Journal of Geophysical Research: Atmospheres*, 126: e2021JD034545, July 2021, DOI:10.1029/2021JD034545, 1-20

53. Hamza F., Anju M., **Valsala V.**, Smitha B.R., A bioenergetics model for seasonal growth of Indian oil sardine (*Sardinella longiceps*) in the Indian west coast, *Ecological Modelling*, 456: 109661, September 2021, DOI:10.1016/j.ecolmodel.2021.109661

52. Maksyutov, S., Oda, T., Saito, M., Janardanan, R., Belikov, D., Kaiser, J. W., Zhuravlev, R., Ganshin, A., **Valsala, V. K.**, Andrews, A., Chmura, L., Dlugokencky, E., Haszpra, L., Langenfelds, R. L., Machida, T., Nakazawa, T., Ramonet, M., Sweeney, C., and Worthy, D.: Technical note: A high-resolution inverse modelling technique for estimating surface CO₂ fluxes based on the NIES-TM–FLEXPART coupled transport model and its adjoint, *Atmos. Chem. Phys.*, 21, 1245–1266, <https://doi.org/10.5194/acp-21-1245-2021>, 2021.

51. **Valsala V.**, Sreeush M.G., Anju M., Sreenivas P., Tiwari Y.K., Chakraborty K., Sijikumar S., An observing system simulation experiment for Indian Ocean surface pCO₂ measurements, *Progress in Oceanography*, 194: 102570, June 2021, DOI: 10.1016/j.pocean.2021.102570, 1-14

50. Hamza F., **Valsala V.**, Mallisery A., George G., Climate impacts on the landings of Indian oil sardine over the south-eastern Arabian Sea, *Fish and Fisheries*, 22, January 2021, DOI: 10.1111/faf.12513, 175-193

2020

49. **Valsala, V.**, Sreeush, M. G., & Chakraborty, K. (2020). The IOD impacts on the Indian Ocean carbon

cycle. *Journal of Geophysical Research: Oceans*, 125, e2020JC016485.
<https://doi.org/10.1029/2020JC016485>

48. M. Anju, M. G. Sreeush, **V. Valsala**, B. R. Smitha, Faseela Hamza, G. Bharathi, C. V. Naidu, (2020), Understanding the role of nutrient limitation on plankton biomass over the Arabian Sea via 1-D coupled biogeochemical model and Bio-Argo observations, *Journal of Geophysical Res.*,
<https://doi.org/10.1029/2019JC015502>

47. Janardanan R., Maksyutov S., Tsuruta A., Wang F., Tiwari Y.K., **Valsala V.**, Ito A., Yoshida Y., Kaiser J.W., Janssens-Maenhout G., Arshinov M., Sasakawa M., Tohjima Y., Worthy D.E.J., Dlugokencky E.J., Ramonet M., Arduini J., Lavric J.V., Piacentino S., Krummel P.B., Langenfelds R.L., Mammarella I., Matsunaga T., Country-scale analysis of methane emissions with a high-resolution inverse model using GOSAT and surface observations, *Remote Sensing*, 12:375, February 2020, DOI:10.3390/rs12030375, 1-24

46. Praveen V., **V. Valsala**, R. S. Ajayamohan and S. Balasubramanian, (2019), Oceanic mixing over northern Arabian Sea in a warming scenario: Tug of 2 war between wind and buoyancy forces, *Journal of Physical Oceanography*, 50, 945–964, <https://doi.org/10.1175/JPO-D-19-0173.1>

45. Tiwari, Y. K., T. Guha, **V. Valsala**, A. S. Lopez, C. Cuevas, R. P. Fernandez, A. S. Mahajan, (2019), Understanding atmospheric methane sub-seasonal variability over India, *Atmospheric Environment*, (in press)

44. Sreeush, M. G. **V. Valsala**, H. Santanu, S. Pentakota, K.V.S.R. Prasad, C.V. Naidu, R. Murtugudde, (2020) Biological production in the Indian Ocean upwelling zones - Part 2: Data based estimates of variable compensation depth for ocean carbon models via cyclo-stationary Bayesian Inversion., *Deep Sea Research Part II*, doi.org/10.1016/j.dsr2.2019.07.007, Volume 179.

2019

43. Singh, S., **V. Valsala**, A. G. Prajeesh, S. Balasubramanian, (2019). On the variability of Arabian Sea mixing and its energetics. *Journal of Geophysical Research: Oceans*,124.
<https://doi.org/10.1029/2019JC015334>

42. Nalini K., Sijikumar S., **Valsala V.**, Tiwari Y.K., Ramachandran R.(2019), Designing surface CO2 monitoring network to constrain the Indian land fluxes, *Atmospheric Environment*,
DOI:10.1016/j.atmosenv.2019.117003, Vol. 218.

41. Sreeush M. G., R. Saran, **V. Valsala**, S. Pentakota, K.V. S.R. Prasad, R. Murtugudde (2019): Variability, trend and controlling factors of Ocean acidification over Western Arabian Sea upwelling region, *Marine Chemistry*, Vol. 209, 14-24.

2018

40. Singh S. and **V. Valsala**, (2018): Role of Subsurface ocean bias in coupled models in simulated interannual variability: A case study for Indian Ocean, *Dynamics of Atmosphere and Ocean*,
doi.org/10.1016/j.dynatmoce.2018.10.001

39. Chakraborty, K., **V. Valsala**, G. V. M. Gupta and V. V. S. S. Sarma, (2018): Dominant biological control over upwelling on pCO2 in sea east of Sri Lanka, *J. Geophysical Res.*, doi.org/10.1029/2018JG004446

38. **Valsala, V.**, Singh S., & Balasubramanian, S. (2018), A modeling study of interannual variability of Bay of Bengal Mixing and Barrier Layer Formation. *Journal of Geophysical Research*, 123, doi.org/10.1029/2017JC013637

37. Guha T., Tiwari Y.K., **Valsala V.**, Lin X., Ramonet M., Mahajan A., Datye A., Ravi Kumar K. (2018), What controls the atmospheric methane seasonal variability over India? *Atmospheric Environment*, 175, DOI:10.1016/j.atmosenv.2017.11.042, 83-91

36. Sreesh, M. G., **Valsala, V.**, Pentakota, S., Prasad, K. V. S. R., and Murtugudde, R (2018), Biological production in the Indian Ocean upwelling zones – Part 1: refined estimation via the use of a variable compensation depth in ocean carbon models, *Biogeosciences*, 15, 1895-1918, <https://doi.org/10.5194/bg-15-1895-2018>

2017

35. Shirai, T.; Ishizawa, M.; Zhuravlev, R.; Ganshin, A.; Belikov, D.; Saito, M.; Oda, T.; **Valsala, V.**; Gomez-Pelaez, A.; Langenfelds, R.; et al. (2017): A decadal inversion of CO₂ using the Global Eulerian-Lagrangian Coupled Atmospheric model (GELCA): Sensitivity to the ground-based observation network. *Tellus Ser. B Chem. Phys. Meteorol.* 2017, 69, 1291158, DOI:10.1080/16000889.2017.1291158

2016

34. **Valsala, V.** and R. R. Rao (2016), Coastal Kelvin waves and dynamics of Gulf of Aden eddies, *Deep Sea Research Part I*: **116**, 174-186.

33. Ravi Kumar, K., **V. Valsala**, Y. K. Tiwari, J.V. Revadekar, P. Pillai, S. Chakraborty, R. Murtugudde, (2016), Intra-seasonal variability of atmospheric CO₂ concentrations over India during summer monsoons, *Atmospheric Environment*, Vol. 142, 229–237.

32. Praveen, V., R. S. Ajayamohan, **V. Valsala**, and S. Sandeep, (2016), Intensification of upwelling along Oman coast in a warming scenario, *Geophys. Res. Lett.*, 43, doi:10.1002/2016GL069638.

31. Roxy, M. K., A. Modi, R. Murtugudde, **V. Valsala**, S. Panickal, S. Prasanna Kumar, M Ravichandran, M. Vichi and M. Lévy, (2016), A reduction in marine primary productivity driven by rapid warming over the tropical Indian Ocean, *Geophysical Res. Letters*, 43 (2), 826-833.

30. Revadekar, J. V. K. Ravi Kumar, Yogesh K. Tiwari, **V. Valsala**, (2016), Variability in AIRS CO₂ during active and break phases of Indian summer monsoon, *Science of The Total Environment*, Volume 541, 15, 1200–1207

2015

29. **Valsala, V.**, and R. Murtugudde, (2015), Mesoscale and Intraseasonal Air-Sea CO₂ Exchanges in the Western Arabian Sea during Boreal Summer, *Deep Sea Research-I*, doi:10.1016/j.dsr.2015.06.001

28. Rödenbeck, C., Bakker, D. C. E., Gruber, N., Iida, Y., Jacobson, A. R., Jones, S., Landschützer, P., Metzler, N., Nakaoka, S., Olsen, A., Park, G.-H., Peylin, P., Rodgers, K. B., Sasse, T. P., Schuster, U., Shutler, J. D., **Valsala, V.**, Wanninkhof, R., and Zeng, J.: Data-based estimates of the ocean carbon sink variability – first results of the Surface Ocean pCO₂ Mapping intercomparison (SOCOM), (2015), *Biogeosciences*, 12, 7251-7278, doi:10.5194/bg-12-7251-2015.

27. Sabu, P., J. V. George, N. Anilkumar, R. Chacko, **V. Valsala**, C.T. Achuthankutty, (2015), Observations of watermass modification by mesoscale eddies in the subtropical frontal region of the Indian ocean sector of southern ocean, Deep Sea Research-II, doi:10.1016/j.dsr2.2015.04.010

2014

26. **Valsala, V.**, M. Roxy, K. Ashok and R. Murtugudde, Spatio-temporal characteristics of seasonal to multidecadal variability of pCO₂ and air-sea CO₂ fluxes in the equatorial Pacific Ocean, (2014), Journal of Geophysical Research, 119, DOI:10.1002/2014JC010212, 8987-9012.

25. Takagi, H., Houweling, S., Andres, R. J., Belikov, D., Bril, A., Boesch, H., Butz, A., Guerlet, S., Hasekamp, O., Maksyutov, S., Morino, I., Oda, T., O'Dell, C. W., Oshchepkov, S., Parker, R., Saito, M., Uchino, O., Yokota, T., Yoshida, Y., and **Valsala, V.** (2014), Influence of differences in current GOSAT XCO₂ retrievals on surface flux estimation, Geophys. Res. Lett., 41, 2598-2605, doi:10.1002/2013GL059174.

24. Ishii, M., Feely, R. A., Rodgers, K. B., Park, G.-H., Wanninkhof, R., Sasano, D., Sugimoto, H., Cosca, C. E., Nakaoka, S., Telszewski, M., Nojiri, Y., Mikaloff Fletcher, S. E., Niwa, Y., Patra, P. K., **Valsala, V.**, Nakano, H., Lima, I., Doney, S. C., Buitenhuis, E. T., Aumont, O., Dunne, J. P., Lenton, A., and Takahashi, T. (2014), Air-sea CO₂ flux in the Pacific Ocean for the period 1990–2009, Biogeosciences, 11, 709-734, doi:10.5194/bg-11-709-2014.

2013

23. **Valsala, V.**, Y. K. Tiwari, P. Pillai, M. Roxy, S. Maksyutov and R. Murtugudde, (2013), Intraseasonal variability of terrestrial biospheric CO₂ fluxes over India during summer monsoons, J. Geophys. Res., doi: 10.1002/jgrg.20037.

22. **Valsala, V.**, S. Maksyutov, (2013), Interannual variability of the air-sea CO₂ flux in the north Indian Ocean, Ocean Dynamics, DOI:10.1007/s10236-012-0588-7, 1-14

21. Sarma, V. V. S. S., Lenton, A., Law, R. M., Metzl, N., Patra, P. K., Doney, S., Lima, I. D., Dlugokencky, E., Ramonet, M., and **Valsala, V.**, (2013), Sea-air CO₂ fluxes in the Indian Ocean between 1990 and 2009, (2013): Biogeosciences, 10, 7035-7052, doi:10.5194/bg-10-7035-2013.

20. Maksyutov, S., Takagi, H., **Valsala, V.**, Saito, M., Oda, T., Saeki, T., Belikov, D. A., Saito, R., Ito, A., Yoshida, Y., Morino, I., Uchino, O., Andres, R. J., and Yokota, T., (2013), Regional CO₂ flux estimates for 2009–2010 based on GOSAT and ground-based CO₂ observations, Atmos. Chem. Phys., 13, 9351-9373, doi:10.5194/acp-13-9351-2013

19. Saeki, T., S. Maksyutov, M. Sasakawa, T. Machida, M. Arshinov, P. Tans, T. J. Conway, M. Saito, **V. Valsala**, T. Oda, R. J. Andres, D. Belikov: (2013), Carbon flux estimation for Siberia by inverse modeling constrained by aircraft and tower CO₂ measurements, J. Geophys. Res. Atmos., 118, doi:10.1002/jgrd.50127.

18. Saeki T., Maksyutov S., Saito M., **Valsala V.**, Oda T., Andres R. J., Belikov D., Tans P., Dlugokencky E., Yoshida Y., Morino I., Uchino O., Yokota T., (2013), Inverse modeling of CO₂ fluxes using GOSAT data and multi-year ground-based observations, SOLA, 9, DOI:10.2151/sola.2013-011, 45-50

17. Tiwari Y.K., **Valsala V.**, Vellore R.K., Kunchal R.K., (2013), Effectiveness of surface monitoring stations in representing regional CO₂ emissions over India, Climate Research, 56, DOI:10.3354/cr01149, 121-129

16. Ravi Kumar K., Y. K. Tiwari, **V. Valsala**, R. Murtugudde, (2013), On understanding of land-ocean CO₂

2012

15. Ganshin, A., Oda, T., Saito, M., Maksyutov, S., **Valsala, V.**, Andres, R. J., Fisher, R. E., Lowry, D., Lukyanov, A., Matsueda, H., Nisbet, E. G., Rigby, M., Sawa, Y., Toumi, R., Tsuboi, K., Varlagin, A., and Zhuravlev, R. (2012): A global coupled Eulerian-Lagrangian model and 1×1 km CO₂ surface flux dataset for high-resolution atmospheric CO₂ transport simulations, *Geosci. Model Dev.*, 5, 231-243, doi:10.5194/gmd-5-231-2012.

14. **Valsala, V.**, S. Maksyutov, and R. G. Murtugudde, (2012), A window for carbon uptake in the southern subtropical Indian Ocean, *Geophys. Res. Lett.*, doi:10.1029/2012GL052857

13. **Valsala, V.**, Maksyutov, S., Telszewski, M., Nakaoka, S.-I., Nojiri, Y., Ikeda, M., and Murtugudde, R. (2012), Climate impacts on the structures of the North Pacific air-sea CO₂ flux variability, *Biogeosciences*, 9, 477-492.

2011

12. **Valsala, V.**, S. Maksyutov and R. Murtugudde, (2011), Interannual to Interdecadal Variabilities of the Indonesian Throughflow Source Water Pathways in the Pacific Ocean. *Journal of Physical Oceanography.*, 41, 1921–1940.

11. Takagi H., T. Saeki, T. Oda, M. Saito, **V. Valsala**, D. Belikov, R. Saito, Y. Yoshida, (2011), On the Benefit of GOSAT Observations to the Estimation of Regional CO₂ Fluxes, *SOLA*, 2011, Vol. 7, 161–164, doi:10.2151/sola.2011-041.

2010

10. **Valsala V.** and S. Maksyutov, (2010), A Short Surface Pathway of the Subsurface Indonesian Throughflow Water from the Java Coast Associated with Upwelling, Ekman Transport, and Subduction, *International Journal of Oceanography*, Vol. 2010, doi:10.1155/2010/540783

09. **Valsala V.**, H. M. Alsibai, M. Ikeda and S. Maksyutov, (2010), Interannual variability of CFC-11 absorption by the ocean: an offline model study, *Climate Dynamics* , doi:10.1007/s00382-010-0784-4.

08. **Valsala V.**, S. Maksyutov and R. Murtugudde, (2010), Possible Interannual to Interdecadal variabilities of the Indonesian Throughflow (ITF) water pathways in the Indian Ocean, *J. Geophysical Research* , doi:10.1029/2009JC005735.

07. **Valsala V.** and S. Maksyutov, (2010), Simulation and assimilation of global ocean pCO₂ and air-sea CO₂ fluxes using ship observations of surface ocean pCO₂ in a simplified Biogeochemical offline model., *Tellus-B*, doi:10.1111/j.1600-0889.2010.00495.x.

06. Kurien, P., M. Ikeda, and **V. Valsala**, (2010), Mesoscale Variability along the East Coast of India in Spring as revealed from Satellite and OGCM simulations, *J. Oceanography*, Vol. 66, 273-289.

2009-2005

05. **Valsala V.**, (2009), Different spreading of Somali and Arabian coastal upwelled waters in the northern

04. **Valsala V.**, (2008), The first and second baroclinic mode responses of tropical Indian Ocean to interannual equatorial wind anomalies, J. Oceanography Vol. 64 (No. 4), 479-494.

03. **Valsala V.**, S. Maksyutov and M. Ikeda, (2008), Design and validation of an offline Oceanic Tracer Transport Model for Carbon Cycle Study, J. Climate , 21, 2752-2769.

02. **Valsala V.** and M. Ikeda, (2007), Pathways and effects of the Indonesian Throughflow water in the Indian Ocean using Particle trajectory and Tracers in an OGCM. J. Climate., 20, 2994-3017.

01. **Valsala V.** and M. Ikeda, (2005), An extreme drought event in the 2002 summer Monsoon Rainfall and its mechanisms proved with a moisture flux analysis, Scientific Online Letters on the Atmosphere, Vol.1, 173-176.

Students Guided

PhD

1	Mr. Sreeush M. G., SRF, IITM	Completed (2020)	Forward and Inverse modeling of Indian Ocean Carbon Cycle
2	Ms. Shikha Singh, Scientist-C, IITM	Ongoing	Possible role of oceanic biases in coupled climate models
3	Ms. Anju, M., SRF, IITM	Ongoing	Modeling of Ecosystems of Indian Ocean
4	Mr. Santanu Halder, JRF, IITM (co-guide)	Ongoing	Forward and Inverse modeling of CO ₂ fluxes
5	Mr. Rakesh	Ongoing	High resolution City based GHG inversion in Indian Megacities

M.Tec/M.Sc (completed)

1	Ms. Ann Ouseph, M.Sc	Role of Pacific winds during ENSO on ITF variability
2	Mr. Saran R., M.Sc	Western Indian Ocean acidification, controlling factors
3	Ms. Swathy A., M.Sc	Subduction of watermasses in the south Indian Ocean
4	Ms. Aswathy M., M.Sc	Role of internal waves in vertical mixing in a hybrid coordinate ocean model
5	Mr. Ramu P., MTech	Optimal estimates of mixing parameterization using Bayesian Inversion
6	Mr. Kunal, MTech	North Indian Ocean Acidification and trends