

# V. Vijith

## Curriculum Vitae

Assistant Professor  
Department of Physical Oceanography,  
School of Marine Sciences,  
Cochin University of Science and Technology,  
Kochi, Kerala, India 682 016 ☎ mobile +91 9421747872  
✉ vijithpod@gmail.com; vijith@cusat.ac.in



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### Focus areas of research

- Climate of the north Indian Ocean
- Physics of estuaries and coastal seas

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### Classroom teaching

#### M.Sc.

- Wave Dynamics, Elective, 3 hours/week, December – April; Even Semester.
- Ocean & Climate, Core, 3 hours/Week, July – November; Odd Semester.
- Data Analysis in Oceanography (Practical), Core, 4 hours/week, July – November; Odd Semester.
- General Oceanography, Elective, 3 hours/week, December – April; Even Semester.
- Coastal & Estuarine Oceanography, Core, 1 hour (Theory) +1 hour (Practical)/week, December – April; Even Semester.
- Physical Oceanographic Computations (Practical), Core, 2 hours/Week, July – November; Odd Semester.
- Geophysical Fluid Dynamics\*, Core, 4 hours/week, July – November; Odd Semester. (\*Not offered now)

#### M.Tech.

- Marine Hydrodynamics, Core, 3 hours/Week, July – November; Odd Semester.
- Computer Programming in Oceanography (Practical)\*, Core, 2 hours/Week, July – November; Odd Semester. (\*Not offered now)

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### Education

2011–2014 **Ph.D. in Marine Science**, *Goa University*, Goa, India.

Thesis: Physical oceanography of the Mandovi and Zuari, two monsoonal estuaries in Goa, central west coast of India; under the supervision of Dr. Satish R. Shetye (Former Vice-Chancellor of Goa University).

2006–2008 **M.Sc. in Oceanography**, *Cochin University of Science and Technology*, Kerala, India.

Dissertation: Hydrography and Circulation in the eastern Arabian Sea during March 1994. First class with distinction.

2003–2006 **B.Sc. in Physics**, *Mahatma Gandhi University*, Kerala, India.

Subsidiary subjects: Mathematics and Chemistry. First class with distinction.

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## Professional experience

- Oct 2016 – **Assistant Professor**, *Department of Physical Oceanography, School of Marine Sciences, Cochin University of Science and Technology, Kochi, India.*  
till date
- Apr 2015 – **Project Scientist**, *Centre for Atmospheric and Oceanic Sciences, Indian Institute of Science, Bangalore, India.*  
Oct 2016
- Aug 2013 – **Project Assistant III**, *CSIR-National Institute of Oceanography, Goa, India.*  
Mar 2015
- Jul 2008 – **Junior/Senior Research Fellow**, *CSIR-National Institute of Oceanography, Goa, India.*  
Jul 2013

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## Publications

### Submitted

- Meenakshi Chatterjee, D Shankar, **V. Vijith**, G.K. Sen, D. Sundar, G.S. Michael, P. Amol, Abhisek Chatterjee, P. Sanyal, Siddhartha Chatterjee, Anwesa Basu, Saranya Chakraborti, Surja Kanta Misra, K. Suprit, Debabrata Mukherjee, A. Mukherjee, Soumya Mukhopadhyay, Gopal Mandal, Aravind Kalla, Madhumita Das, Variation of surface salinity in the Sundarbans Estuarine System during the Equinoctial Spring tidal phase of March 2011. Submitted to *Journal of Earth System Sciences*.
- N. Anup<sup>†</sup>, **V. Vijith**, A. K. Jithin, B. Rohith, P. Amol, P. A. Francis, Quasi-biweekly oscillation in sea level along the western Bay of Bengal. Submitted to *Continental Shelf Research*. (<sup>†</sup>Student publication)

### Peer-reviewed articles

- R. Prasanth<sup>†</sup>, **V. Vijith**, V. Thushara, J. V. George, P. N. Vinayachandran, Processes governing the seasonality of vertical chlorophyll-a distribution in the central Arabian Sea: Bio-Argo observations and ecosystem model simulation. Accepted to *Deep Sea Research Part II*. (<sup>†</sup>Student publication)
- P. Amol, P. N. Vinayachandran, D. Shankar, V. Thushara, **V. Vijith**, A. Chatterjee, and A. Kankonkar, Effect of freshwater advection and winds on the vertical structure of chlorophyll in the northern Bay of Bengal. *Deep Sea Research Part II*, 104622, 2020, <https://doi.org/10.1016/j.dsr2.2019.07.010>
- P. Amol, S. Bernal, D. Shankar, V. Jain, V. Thushara, **V. Vijith**, P. N. Vinayachandran, Modulation of chlorophyll concentration by downwelling Rossby waves during the winter monsoon in the southeastern Arabian Sea, *Progress in Oceanography*, 20, 10365, 2020, <https://doi.org/10.1016/j.pocean.2020.102365>
- **V. Vijith**, P. N. Vinayachandran, Benjamin G. M. Webber, Adrian J. Matthews, Jenson V. George, K. Vijay Kumar, Aneesh A. Lotliker, and P. Amol, Closing the sea surface mixed layer temperature budget from in-situ observations alone: Operation Advection during BoBBLE, *Scientific Reports*, 10, 7062, 2020, <https://doi.org/10.1038/s41598-020-63320-0>
- J. V. George, P. N. Vinayachandran, **V. Vijith**, V. Thushara, A.A. Nayak, S.M. Pargaonkar, P. Amol, K. Vijaykumar, and A.J. Matthews, Mechanisms of barrier layer formation and erosion from in-situ observations in the Bay of Bengal. *Journal of Physical Oceanography*, Volume 49, 1183–1200, 2019, <https://doi.org/10.1175/JPO-D-18-0204.1>

- D. Shankar, R. Remya, A.C. Anil, **V. Vijith**, Role of physical processes in determining the nature of fisheries in the eastern Arabian Sea. *Progress in Oceanography*, Volume 172, 124-158, 2019, <https://doi.org/10.1016/j.pocean.2018.11.006>
- Benjamin G. M. Webber, Adrian J. Matthews, P. N. Vinayachandran, C. P. Neema, Alejandra Sanchez-Franks, **V. Vijith**, Prakash Amol and Dariusz B. Baranowski. The dynamics of the Southwest Monsoon Current in 2016 from high-resolution in situ observations and models. *Journal of Physical Oceanography*, 48, 2259–2282, 2018, <https://doi.org/10.1175/JPO-D-17-0215.1>
- P. Amol, **V. Vijith**, V. Fernandes, P. Pednekar, J. Singh. Impact of local and remote winds on the shelf circulation off the central west coast of India. *Ocean Dynamics*, 2018, 68, 12, 1607–1623, <https://doi.org/10.1007/s10236-018-1211-3>
- P.N. Vinayachandran, A.J. Matthews, K. Vijay Kumar, A. Sanchez-Franks, V. Thushara, J. George, **V. Vijith**, B.G. Webber, B.Y. Queste, R. Roy, A. Sarkar, D.B. Baranowski, G.S. Bhat, N.P. Klingaman, S.C. Peatman, C. Parida, K.J. Heywood, R. Hall, B. King, E.C. Kent, A.A. Nayak, C.P. Neema, P. Amol, A. Lotliker, A. Kankonkar, D.G. Gracias, S. Vernekar, A.C. D.Souza, G. Valluvan, S.M. Pargaonkar, K. Dinesh, J. Giddings, and M. Joshi, BoBBLE (Bay of Bengal Boundary Layer Experiment): Ocean–atmosphere interaction and its impact on the South Asian monsoon. *Bulletin of American Meteorological Society*, 2018, 99, 1569–1587, <https://doi.org/10.1175/BAMS-D-16-0230.1>
- **V. Vijith**, P. N. Vinayachandran, V. Thushara, P. Amol, D. Shankar, A. C. Anil. Consequences of inhibition of mixed-layer deepening by the West India Coastal Current for winter phytoplankton bloom in the northeastern Arabian Sea. *Journal of Geophysical Research-Oceans*, 2016, 121. <http://dx.doi.org/10.1002/2016JC012004>
- **V. Vijith**, S.R. Shetye, K. Baetens, P. Luyten and G.S. Michael. Residual estuarine circulation in the Mandovi, a monsoonal estuary: A three-dimensional model study. *Estuarine, Coastal and Shelf Science*, 2016, 173, 79-92. <http://dx.doi.org/10.1016/j.ecss.2016.01.041>
- S.R. Shetye and **V. Vijith**. Sub-tidal water-level oscillations in the Mandovi estuary, west coast of India. *Estuarine, Coastal and Shelf Science*, 2013, 134, 1-10. <http://dx.doi.org/10.1016/j.ecss.2013.09.016>
- M. Chatterjee, D. Shankar, G.K. Sen, P. Sanyal, D. Sundar, G.S. Michael, A. Chatterjee, P. Amol, D. Mukherjee, K. Suprit, A. Mukherjee, **V. Vijith**, S. Chatterjee, A. Basu, M. Das, S. Chakraborti, A. Kalla, S.K Misra, S. Mukhopadhyay, G. Mandal and K. Sarkar. Tidal variations in the Sundarbans estuarine system, India. *Journal of Earth System Science*, 2013, 122(4), 899-933.
- **V. Vijith** and S.R. Shetye. A stratification prediction diagram from characteristics of geometry, tides and runoff for estuaries with a prominent channel. *Estuarine, Coastal and Shelf Science*, 2012, 98, 101-107. <http://dx.doi.org/10.1016/j.ecss.2011.12.006>
- **V. Vijith**, D. Sundar and S.R. Shetye. Time-dependence of salinity in monsoonal estuaries. *Estuarine, Coastal and Shelf Science*, 2009, 84, 601-608. <http://dx.doi.org/10.1016/j.ecss.2009.10.003>

#### Technical reports & popular science articles

- K. Suprit, Aravind Kalla and **V. Vijith**. A GRASS-GIS-based methodology for flash flood risk assessment in Goa, National Institute of Oceanography, Goa, 2010. [http://www.nio.org/nio/uploadnews/277\\_2\\_second\\_floods.pdf](http://www.nio.org/nio/uploadnews/277_2_second_floods.pdf)

- **V. Vijith.** Estuaries (in Malayalam), Sashtrakeralam (A science magazine for Higher Secondary School students by Kerala Sastra Sahithya Parishad), Vol. 50, Issue 10, 27–30p, March 2019.
- **V. Vijith.** Ocean and Climate (in Malayalam), Sashtrakeralam (A science magazine for Higher Secondary School students by Kerala Sastra Sahithya Parishad), Vol. 52, Issue 5, 21–23p, October 2020.

Conference presentations (first author only)

- **V. Vijith**, P. N. Vinayachandran, Ben Webber, Adrian Matthews, Jenson George, K. Vijaykumar, V. Thushara, P. Amol, Aneesh Lotliker. Estimation of terms of temperature equation using in situ observations alone during BoBBLE (Bay of Bengal Boundary Layer Experiment). Good Hope for Earth Sciences IAPSO-IAMAS-IAGA Joint Assembly, Cape Town, South Africa, 27 August – 01 September 2017.
- **V. Vijith**, P.N. Vinayachandran, V. Thushara, D. Shankar, A.C. Anil. A coupled physical-biological model of the north Indian Ocean. *Dynamics of the Indian Ocean: Perspective and Retrospective, International Symposium on the Indian Ocean, IO 50*, NIO, Goa, 30 November - 4 December 2015.
- **V. Vijith** and S.R. Shetye. Numerical modeling of estuarine plume from the Mandovi and Zuari, two monsoonal estuaries in Goa. *The Pan Ocean Remote Sensing Conference (PORSEC)*, Kochi, Kerala, November 2012. <http://www.porsec2012.incois.gov.in/PORSEC/abstractView.jsp?userid=PORSEC2012-27-00024>
- **V. Vijith**, S.R. Shetye and P. Luyten. Annual cycle of salinity in a monsoonal estuary in observations and in a three-dimensional numerical model. *50th ECSA Conference. Today's science for tomorrow's management*, Venice, Italy, June 2012. [http://www.estuarinecoastalconference.com/resources/downloads/ECSA2012\\_PosterProgram\\_11may2012.pdf](http://www.estuarinecoastalconference.com/resources/downloads/ECSA2012_PosterProgram_11may2012.pdf)
- **V. Vijith** and S.R. Shetye. Annual cycle of salinity in Mandovi in observations and in a three-dimensional numerical model. *Workshop on Monsoon Variability*, Centre for Atmospheric and Oceanic Study (CAOS), Indian Institute of Science, Bangalore, August 2011.
- **V. Vijith** and S.R. Shetye. Time-dependence of salinity and preliminary estimates of residence time in a monsoonal estuary. *AOGS 2010*, Annual meeting of Asia Oceania Geosciences Society, Hyderabad, July 2010.

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## Research projects

- 2018 – 2021 O-MASCOT program of ESSO-INCOIS, Ministry of Earth Science - A coupled physical - ecosystem model based on MOM5 - COBALT for the Indian Ocean. INR 22.5 Lakhs
- 2018 – 2020 Seed Money for New Research Initiatives (SMNRI), State Plan Grant-2018, CUSAT - A moored buoy real-time observation system for the Cochin backwaters. INR 2.25 Lakhs
- 2018 – 2021 DST-SERB Teacher Associateship for Research Excellence - Impact of physical processes on the fisheries of the north Indian Ocean. INR 18 Lakhs

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## Supervision and mentoring

PhD

- 2018 – N. Anup, CUSAT
- 2018 – I. P. Safin, CUSAT



- 2018 – R. Prasanth, CUSAT  
M.Sc.
- 2018 N. Anup, Quasi-weekly oscillations in winds and sea level along the coast of India, CUSAT.
- 2018 I. P. Safin, Annual Cycle of Vertical Structure of Chlorophyll in the Northeastern Arabian Sea, CUSAT
- 2020 Fazeela Youzaf, Vertical structure of physical and biological variables in the northern Bay of Bengal using bio-Argo observations and a model, CUSAT
- 2020 Arya S. Nair, Distribution of Biophysical variables in two different regions of the Bay of Bengal by observation and numerical model, CUSAT
- 2020 – Rindhuja Treesa Johnson, Pondicherry University

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### Professional Training/Courses

- Refresher Course Refresher Course in Value Education, organised by UGC-Human Resource Development Centre of Gujarat University, Ahmedabad, 28 September – 11 October 2020.
- FIP Faculty Induction Program, Online Guru-Dakshata, organised by UGC-Human Resource Development Centre of Gujarat University, Ahmedabad, 27 July – 25 August 2020.
- FDP Faculty Development Programme on Outcome Based Teaching Learning and Assessment Strategies, Internal Quality Assurance Cell, Cochin University of Science and Technology, 27 November–1 December 2019.
- BOTS BoBBLE Ocean Turbulence Science Workshop, Center for Atmospheric and Oceanic Sciences (CAOS), Indian Institute of Science, Bengaluru, India, 15 – 19 July 2019.
- Winter School International training course on Indian Ocean Dynamics. Lectures by Prof. Julian P. McCreary, (University of Hawaii) at the Indian National Centre for Ocean Information Services (ESSO-INCOIS), Hyderabad during November 2015.
- Summer School Summer School on the Dynamics of North Indian Ocean. Lectures by Prof. Julian P. McCreary, (University of Hawaii) at the CSIR-National Institute of Oceanography, Goa, India during June–July 2010.
- Training on COHERENS Training on COHERENS during September 2010 and June-July 2012 at the Management Unit of the North Sea Mathematical models (MUMM), Brussels, Belgium under the guidance of Dr. Patrick Luyten. COHERENS is a general purpose hydrodynamical and ecological numerical model dedicated to estuaries, coastal and shelf seas developed by Dr. Luyten and his team at MUMM.

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### Major cruises/field trips

- BoBBLE ORV Sindhu Sadhana: Bay of Bengal Boundary Layer Experiment 24 June–23 July 2016 (Hydrography)
- IIOE-2 ORV Sagar Nidhi: First Expedition of the International Indian Ocean Expedition - 2, Goa to Mauritius, 04–22 December 2015 (Hydrography)
- SEP Sundarbans Estuarine Program, 4–9 September 2013 and 24–31 August 2014 (Tide pole and salinity)
- ZuMonEx Zuari Monsoon Experiment, July 2008 – December 2009 (Salinity section)
- ManMonEx Mandovi Monsoon Experiment, December 2007–April 2008 (Salinity section)
- Arabian Sea BTV Sagar Manjusha: Arabian sea, 31 January–10 February 2008 (Hydrography)

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## Awards/Achievements/Membership

- Member of the Board of Studies of Physical Oceanography, Cochin University of Science and Technology
- Teacher Associateship for Research Excellence fellowship, 2018 by the Department of Science and Technology, Science Engineering and Research Board.
- Awarded Junior Research Fellowship (JRF) for doctoral studies by Council of Scientific and Industrial Research (CSIR), India, in Earth, Atmospheric, Ocean and Planetary Sciences (placed among top 25 in the national test) in 2007.
- Stood first in MSc. Oceanography, 2008 batch at the Cochin University of Science and Technology, Kerala, India.

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## Served as Reviewer

- Estuarine, Coastal and Shelf Science (Elsevier)
- Deep Sea Research II (Elsevier)
- Journal of Earth System Science (SpringerLink)
- Current Science (Indian Academy of Science)
- Reviewed project proposals for the Ministry of Earth Science, India

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## Skills

Instruments	CTD, uCTD, Vertical Microstructure Profiler
Numerical Models	COHERENS, MOM, TOPAZ
Languages	FORTRAN, awk, shell scripting
Platforms	UN*X/Linux
HPC	Familiar with High Performance Computing (HPC) using parallel codes on SGI-altix and IBM Machines
Tools	GMT, Ferret, MATLAB, L <sup>A</sup> T <sub>E</sub> X

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## Personal Information

Permanent address	Valliyankal House, Thottumukkam Post, Malappuram Dt., Kerala, India 673639.
Date of birth	10 April 1985
Sex	Male
Nationality	Indian