Arnab Mukherjee

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Scientist 'E'

ESSO - National Centre for Polar and Ocean Research (NCPOR),

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0.1 Academic Opportunity

• Students having a first-class M.Sc./M.Tech. ((60% or more) or equivalent grades) in Marine Sciences/ Oceanography/ Atmospheric Sciences/ Earth Sciences/ Meteorology/ Physics/ Mathematics or related fields and have cleared the National Eligibility Test (NET) conducted by CSIR/UGC/DBT/DST or GATE or should have been provisionally selected for INSPIRE Ph.D. fellowship can apply for Ph.D opportunity at NCPOR under my guidance using the link https://ncpor.res.in/pages/display/450-phd-and-postdoc

• For Internship and Dissertation work under my guidance, students can apply online using the link https://ncpor.res.in/pages/display/449-internship-and-dissertation

Scientific Information

Total Number of Published Paper in Peer-review journals: 21

Total citation of published papers including Ph.D. thesis: 657

H-index: 14 and i10index: 16 (google scholar)

Education

Ph.D. (2017), National Institute of Oceanography, CSIR, India and Goa University, Goa, India. Thesis title: *Intraseasonal variability of currents along east coast of India.*
M.Sc. (2008) Physics, Indian Institute of Technology (IIT), Delhi, India.
B.Sc. (2006) Physics Hons., Katwa College, Burdwan University, West Bengal (WB), India.
10+2 (2003), Katwa Bharati Bhavan, WB Board of Higher Secondary Education, WB, India.
10 (2001), Katwa Bharati Bhavan, WB Board of Secondary Education, WB, India.

Research Area

- Global ocean and sea-ice modeling
- Global ocean circulations
- Observed variability and dynamics of the polar ocean
- Deep sea variability and climate change
- Dynamics of North Indian Ocean
- Coastal Oceanography

Job Experiences

- Scientiist 'E' (01 January 2024 – till date) at Arctic Ocean - Atmospheric Interaction Group, National Centre for Polar and Ocean Research (NCPOR), Ministry of Earth Sciences (MoES), Government of India.

• Scientiist 'D' (12 December 2019 – 31 December 2023) at Arctic Ocean - Atmospheric Interaction Group, National Centre for Polar and Ocean Research (NCPOR), Ministry of Earth Sciences (MoES), Government of India.

• Project Scientist 'C' (23 January 2019 – 11 December, 2019) at Modeling and Data Assimilation Group (MDG), Indian National Centre for Ocean Information Services (INCOIS), Ministry of Earth Sciences, Government of India.

• Project Scientist 'B' (November, 2014–22 January, 2019) at Modeling and Data Assimilation Group (MDG), Indian National Centre for Ocean Information Services (INCOIS), Ministry of Earth Sciences, Government of India.

• Junior and Senior Research Fellow (November, 2009–October 2014) at Physical Oceanography Division (POD), National Institute of Oceanography (NIO), CSIR, Goa, India.

• Project assistant (August 2008–October 2009) at Computational Neuroscience Division, National Brain Research Center (NBRC), DBT, Gurgaon, India.

List of Publications

0.1.1 Accepted/published

[21] • **A. Mukherjee** and S. Ghosh. The changes in La Niña induced summertime interannual variability of sea level anomaly along the western boundary of the Bay of Bengal. ***Ocean Dynamics*,1–14, 2023.**
https://doi.org/10.1007/s10236-023-01557-9.

[20] • **A. Mukherjee** and M. Ravichandran. Role of atmospheric heat fluxes and ocean advection on decadal (2000–2019) change of sea-ice in the Arctic. ***Climate Dynamics*,60,11–12, 3503–3522, 2023.**
https://doi.org/10.1007/s00382-022-06531-7.

[19] • V. Jain, D. Shankar, P. N. Vinayachandran, **A. Mukherjee**, P. Amol. Role of ocean dynamics in the evolution of mixed-layer temperature in the Bay of Bengal during the summer monsoon.***Ocean Modelling*,168, 101895, 2021.** https://doi.org/10.1016/j.ocemod.2021.101895.

[18] • P. N. Vinayachandran, Y. Masumoto, M. J. Roberts, J. A. Huggett, I. Halo, A. Chatterjee, P. Amol, G. V. M. Gupta, A. Singh, **A. Mukherjee**, S. Prakash, L. E. Beckley, E. J. Raes, R. Hood. Reviews and syntheses: Physical and biogeochemical processes associated with upwelling in the Indian Ocean.***Biogeosciences*,18, 5967–6029, 2021.** https://doi.org/10.5194/bg-18-5967-2021.

[17] • M. Chatterjee, D. Shankar, V. Vijith, G. K. Sen, D. Sundar, G. S. Michael, P. Amol, A. Chatterjee, P. Sanyal, S. Chatterjee, A. Basu, S. Chakraborty, S. K. Mishra, K. Suprit, D. Mukherjee, **A. Mukherjee**, et. al. Variation of salinity in the Sundarbans Estuarine System during the Equinoctial Spring tidal phase of March 2011.***Journal of Earth System Science*,130–150, 2021.** https://doi.org/10.1007/s12040-021-01636-9.

[16] •P. A. Francis, A. K. Jithin, J. B. Effy, A. Chatterjee, K. Chakorborty, A. Paul, B. Balaji, S. S. C. Shenoi, P. Biswamoy, **A. Mukherjee**, et al. High-resolution Operational Ocean Forecast and Reanalysis System for the Indian Ocean.***Bulletin of American Meteorological Society*, 101 (08),1340–1356, doi:https://doi.org/10.1175/BAMS-D-19-0083.1, 2020.,**

[15] • S. Mukhopadhyay, D. Shankar, S. G. Aparna, **A. Mukherjee**, V. Fernando, A. Kankonkar, S. Khalap, N. P. Satelkar, M. G. Gaonkar, A. P. Tari, R. R. Khedekar and S. Ghatkar. Observed variability of the East India Coastal Current on the continental slope during 2009–2018. ***Journal of Earth System Science*, 129 (77), doi:https://doi.org/10.1007/s12040-020-1346-8, 2020.**

[14] • P. A. Francis, A. K. Jithin, A. Chatterjee, **A. Mukherjee**, D. Shankar, P. N. Vinayachandran and S. S. V. S. Ramakrishna. Structure and Dynamics of the

Undercurrents along the South-East Coast of India. ***Ocean Dynamics*, 70:387–404, 2020, doi:https://doi.org/10.1007/s10236-019-01340-9.**

[13]• E. B. John, P. A. Francis, S. Ramakrishna and **A. Mukherjee**. Anomalous warming of the Western Equatorial Indian Ocean in 2007: Role of Ocean Dynamics. ***Ocean Modelling*** **,147:10142:1-11, doi:https://doi.org/10.1016/j.ocemod.2019.101542, 2020.**

[12] • **A. Mukherjee**, Abhisek Chatterjee and P. A. Francis. Role of Andaman and Nicobar Islands in eddy formation along western boundary of the Bay of Bengal. ***Nature Scientific Reports*** **,9, No: 10152, Doi:10.1038/s41598-019-46542-9.**

https://www.nature.com/articles/s41598-019-46542-9

[11] • **A. Mukherjee** and B. K. Kalita. Signature of Laña in interannual variations of the East India Coastal Current during spring. ***Climate Dynamics*** **, Doi:10.1007/s00382-018-4601-9, 2019.**

https://link.springer.com/article/10.1007/s00382-018-4601-9

[10] • P. Singh, A. Chatterjee, **A. Mukherjee**, M. Ravichandran and S. S. C. Shenoi. Wyrtki Jets: Role of Intraseasonal forcing. ***Journal of Earth System Science*** **, 128:21, 1–18, Doi:10.1007/s12040-018-1042-0,128:21, 2018.**

https://link.springer.com/article/10.1007/s12040-018-1042-0

[09] • S. Mukhopadhyay, D. Shankar, S. G. Aparna and **A. Mukherjee**. Observations of the sub-inertial, near-surface East India Coastal Current. ***Continental Shelf Research*** , 148, 159–177, Doi:http://dx.doi.org/10.1016/j.csr.2017.08.020, 2017.

http://www.sciencedirect.com/science/article/pii/S0278434316305817

[08] • **A. Mukherjee**, D. Shankar, A. Chatterjee and P. N. Vinayachandran.Numerical simulation of the observed near–surface East India Coastal Current on the continental slope. ***Climate Dynamics*** , 50 (11–12), 3949–3980, Doi:10.1007/s00382-017-3856-x, 2017.

https://link.springer.com/article/10.1007/s00382-017-3856-x

[07] • A. Chatterjee, D. Shankar, J. P. McCreary, P. N. Chandrasekhar and **A. Mukherjee**. Dynamics of Andaman Sea circulation and its role in connecting the equatorial Indian Ocean to the Bay of Bengal. ***Journal of Geophysical Research*** , 122, 3200–3218, doi:10.1002/2016JC012300, 2017.

http://onlinelibrary.wiley.com/doi/10.1002/2016JC012300/full

[06] • V. Jain, D. Shankar, P. N. Vinayachandran, A. Kankonkar, A. Chatterjee, P. Amol, A. M. Almeida, G. S. Michael, **A. Mukherjee**, M. Chatterjee, R. Fernandes, R. Luis, A. Kamble, A. K. Hegde, S. Chatterjee, U. Das and C. P. Neema. Evidence for the existence of Persian Gulf Water and Red Sea Water in the Bay of Bengal. ***Climate Dynamics***, 48 (9), 3207-3206, 2017.

http://link.springer.com/article/10.1007/s00382-016-3259-4

[05] • **A. Mukherjee**, D. Shankar, V Fernando, P. Amol , S. G. Aparna, R. Fernandes, G. S. Michael, S. T. Khalap, N. P. Satelkar, Y. Agarvadekar, M. G. Gaonkar, A. P. Tari, A. Kankonkar and S. P. Vernekar. Observed seasonal and intraseasonal variability of the East India Coastal Current on the continental slope. ***Journal of Earth System Science***, 123 (6), 1197-1232, 2014.

http://www.ias.ac.in/jess/forthcoming/JESS-D-13-00351.pdf

[04] • P. Amol, D. Shankar, V Fernando, **A. Mukherjee**, S. G. Aparna, R. Fernandes, G. S. Michael, S. T. Khalap, N. P. Satelkar, Y. Agarvadekar, M. G. Gaonkar, A. P. Tari, A. Kankonkar and S. P. Vernekar. Observed intraseasonal and seasonal variability of the West India Coastal Current on the continental slope. ***Journal of Earth System Science***, 123 (5), 1045-1074, 2014.

http://www.ias.ac.in/jess/jul2014/1045.pdf

[03] • 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. Mishra, S. Mukhopadhyay, G. Mandal,

and K. Sarkar. Tidal Variations in the Sundarbans Estuarine System, India. ***Journal of Earth System Science***, 122 (4), 899-933, 2013.

http://www.ias.ac.in/jess/aug2013/899.pdf

[02] • **A. Mukherjee**, D. Shankar, S. G. Aparna, P. Amol, V. Fernando, R. Fernandes, S. Khalap, S. Narayan, Y. Agarvadekar, M. Gaonkar, P. Tari, A. Kankonkar and S. Vernekar. Near-inertial currents off the east coast of India. ***Continental Shelf Research***, 55, 29-39, 2013, doi:http://dx.doi.org/10.1016/j.csr.2013.01.007.

http://www.sciencedirect.com/science/article/pii/S0278434313000174.

[01] • P. Amol, D. Shankar, S. G. Aparna, S. S. C. Shenoi, V. Fernando, S. R. Shetye, **A. Mukherjee**, Y. Agarvadekar, S. Khalap, and N. P. Satelkar. Observational evidence from direct current measurements for propagation of remotely forced waves on the shelf off the west coast of India. ***Journal of Geophysical Research***, 117, C05017, 2012, doi:10.1029/2011JC007606

http://onlinelibrary.wiley.com/doi/10.1029/2011JC007606/full

0.1.2 Report

[1] • **A. Mukherjee**, A. Chatterjee, V. V. S. S. Sarma and S. S. C. Shenoi. Physical Sciences of the Ocean: A report to IAPSO. ***Indian National Science Academy*** , Indian National Report for IUGG, 2015.

[2] • J. P. McCreary , D. Shankar, A. Chatterjee and **A. Mukherjee**. Basic ocean processes, as illustrated in solutions to the LCS model. ***CSIR–National Institute of Oceanography (NIO)***, 2010.

0.1.3 Conference Abstract

• **A. Mukherjee**, Abhisek Chatterjee and P. A. Francis. Numerical simulation of the observed East India Coastal Current on the continental slope. *In, abstract volume, Ocean Sciences Meeting*, Portland, USA, 2018.

• **A. Mukherjee**, P. A. Francis, A. Chatterjee. K. Chakorborty and A. Paul. Impact of the Vertical Resolution in an Ocean General Circulation Model on the Simulation of the East India Coastal Current. *In, abstract volume, International Symposium on dynamics of the Indian Ocean:Perspective and Retrospective (IO50)*, Goa, 2015.

• **A. Mukherjee**, P. Amol, D. Shankar, S. G. Aparna, V. Fernando, M. gaonkar, A. Kankonkar, S. Vernekar, P. Tari and S. Khalap. Near inertial currents off the east coast of India. *In, abstract volume, The Pan Ocean Remote Sensing Conference (PORSEC)*, Kochi, India, 2012.

• A. Chatterjee, D. Shankar, J. P. McCreary, P. N. Vinayachandran and **A. Mukherjee**. Dynamics of low-frequency Yanai waves in the Equatorial Indian Ocean. *Workshop on monsoon variability*, IISc, Bangalore, 2011.

• **A. Mukherjee**, A. Prakash, S. G. Aparna, D. Shankar, V. Fernando, M. Gaonkar, A. Kankonkar, S. Vernekar, P. Tari, S. Khalap, S. Narayaan and R. Fernandes. Inertial currents off the east coast of India. *Workshop on monsoon variability*, IISC, Bangalore, 2011.

Honors and Awards

• Marine Working Group member of International Arctic Science Committee (IASC).

• Lifetime member of ocean society of India.

• Awarded for **exemplary services** to CSIR -National Institute of Oceanography (NIO) for the year 2010.

• Qualified National Eligibility Test **(NET)** for lectureship in Physics during December, 2007.

• Qualified Joint Admission Test for **M.Sc (JAM) at IIT in Physics** (2006) with all India Rank 153.

Workshop/school Attained

• Participated in an international workshop on **"Ocean Mesoscale Eddy Interactions with the Atmosphere"**, 17-18 February, 2018 at Portland, USA.

• Participated in an international summer school on **"New Frontiers in Operational Oceanography"**, 2-13 October, 2017 at Mallorca, Spain. This summer school was organized by GODAE Ocean View (GOV).

• Participated in an international summer school on **"Fundamentals of Ocean Climate Modelling at Global and Regional Scales"** during 5-14 August, 2013 at INCOIS, Hyderabad. This summer school was organized by ICTP (International centre for theoretical physics) and INCOIS (Indian National Centre for ocean information services)

• Summer school on **"Dynamics of the North Indian Ocean"**. NIO, Goa, June-July 2010.

Oral/poster presentation

• Oral presentation at **ASSW 2023** at Vienna, Austria, 19-22 February, 2023.

• Oral presentation at **IIOSC conference** online, 14-18 March, 2022.

• Oral presentation at **WCSSP annual meeting** via online, 07-11 March, 2022.

• Poster presentation at **WCSSP annual meeting** via online, 01-04 February, 2021.

• Poster presentation at **Mesoscale eddy workshop** at Portland, USA, 17–18 February, 2018.

• Poster presentation at International conference on "**Ocean Sciences Meeting**" at Portland, USA, 11-16 February, 2018.

• Poster presentation at International Symposium on "**Dynamics of the Indian Ocean: Perspective and Retrospective**" at Goa, December 2015.

• Oral presentation at **"International PORSEC workshop"**, Kochi, November 2011.

• Oral presentation at **"International workshop on Monsoon Variability"**, IISC Bangalore during 17-19 August, 2011.

International travel grant

• Received partial travel grant ($USD 507) for attending **Mesoscale Eddy Workshop** during 17 - 18 February, 2018 at Portland, USA.

• Received partial travel grant ($USD 500) for attending **Ocean Science meeting** during 11 - 16 February, 2018 at Portland, USA.

• Received full funding for attending international school on "**New Frontiers in Operational Oceanography**] by GODAE Ocean View at Mallorca, Spain (2-13 October, 2017).

• Received partial funding ($AU 1,000) for attending ROMS **Asia-Pacific international workshop** at Hobart, Australia 2016.

• Received full funding for attending international summer school on "**Fundamentals of Ocean Climate Modelling at Global and Regional Scales**] during 5-14 August, 2013 at INCOIS, Hyderabad from ICTP, Italy.

Teaching Experience

• Worked as a teaching faculty for Physical Oceanography, Statistics and Remote Sensing at NCPOR, Goa for Ph.D. students.

• Worked as a faculty at IMD (Indian Meteorological Department) on the topic "Physical Oceanography and Ocean-Atmosphere interaction" for Meteorologist Gr. II (Direct requited Class-I officer) officers.

• Worked as a faculty at International Training Centre for Operational Oceanography (ITCOocean), INCOIS, Hyderabad.

• Experience in teaching "Basics of Linear, continuously stratified (LCS) model" and "Fundamentals of ocean general circulation model (OGCM) and hands on training" at International Training Centre for Operational Oceanography (ITCOocean), INCOIS, Hyderabad, India.

Sea and Field Experiences

• CTCZ programme (8 July–8 August, 2012) on **ORV Sagar Kanya** to the north-central Bay of Bengal.

• Monsoon experiment (17 December 2016–3 January, 2017) on **ORV Sagar Nidhi** to the north-central Bay of Bengal.

Reviewer

• Journal of Geophysical Research (Oceans), Americans Geophysical Union (AGU)..

• Progress in Oceanography, Elsvier publications..

• Continental Shelf Research (CSR), Elsevier publications.

• Earth system and environmental science, Elsevier publications.

• Ocean Modelling, Elsevier publications.

• Deep Sea Research, Elsevier publications.

• Journal of Earth System Sciences, Springer publications..

• Polar Sciences, Elsevier publications..

Academic students

0.1.4 Summer/winter internship

• Ms. Janki Kanzariya, M.Sc.in Physics, NIT Surat, India, 2024.

• Ms. Akshata Khandelwal, M.Sc.in Physics, BITS Pilani, India, 2023.

• Mr. Varad Bidwai, M.Sc.in Physics, BITS Pilani, India, 2023.

• Ms. Akshaya Muraleedharan V, M.Sc.in Physical Oceanography, CUSAT, India, 2023.

• Ms. Gowri Nair A S, M.Sc.in Physical Oceanography, CUSAT, India, 2023.

• Ms. Shyamasri Adhikari, B.Sc.in Physics, Katwa College, The university of Burdwan, West Bengal, India, 2023.

• Mr. Swarnendu Saha, M.Sc.in Physics, IISER Kolkata, India, 2023.

• Mr. Ishaan Kudchadkar, M.Sc.in Physics, BITS Goa, India, 2022.

• Mr. Arnab Gupta, M.Sc. in Physics, BITS Goa, India, 2022.

• Ms. Oishi Chakraborty, M.Sc. in Earth Sciences, University of Hyderabad, India, 2021.

• Mr. Ravi Teja, M.Sc. in Earth Sciences, University of Hyderabad, India, 2021.

• Mr. Nandakishore, M.Sc.in Earth Sciences, KUFOS, Kochi, India, 2019.

• Mr. Ranjan Sahu, M.Sc. in Earth Sciences, University of Hyderabad, India, 2019.

• Mr. Supriyo Ghosh, M.Sc. in Earth Sciences, University of Hyderabad, India, 2019.

• Ms. Arpita Panda, Int. M.Sc. in Earth Sciences, University of Hyderabad, India, 2018.

• Mr. Bijit Kalita, M.Sc. in Earth Sciences, University of Hyderabad, India, 2018 .

0.1.5 Master dissertation

• Mr. Ananthu Pradeep, M.Sc in Physical Oceanography, CUSAT, Kochi, India, (January–May 2023).

• Ms. Priyanka Ghosh, M.Sc in Marine Sciences, University of Calcutta, India, (January–May 2021).

• Ms. Anjali Kumari, M.Sc in Marine Sciences, University of Calcutta, India, (January–May 2021).

• Mr. Supriyo Ghosh, M.Sc in Earth Sciences, University of Hyderabad, India, (January–May 2020).

• Mr. Bijit Kalita, M.Sc in Earth Sciences, University of Hyderabad, India, (January–May 2018).

0.1.6 Past students

• Mr. Supriyo Ghosh, JRF (January, 2022 –December, 2022). Now working at Barcelona Super-computing Centre, Spain.

0.2 Recognized PHD Guide

• Department of Marine Sciences, Bharathidasan University, Tiruchipalli, Tamil Nadu.

• School of Earth, Ocean and Atmospheric Sciences, Goa University.

0.3 PHD students

• MS. Aswathi Das, NCPOR, MoES. (Co-Guide)

• Mr. Soumyadeep Dutta, NCPOR, MoES. (Co-Guide)

Updated on February 6, 2024