

Sayak Chakraborty

INSPIRE-SRF
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📄 Google Scholar



Awards and Achievements

- 1 **Gold Medalist**, from Amity University Kolkata for Standing 1st in Academic Performances in M.Sc. Applied Physics (Batch: 2018-2020).
- 2 **Awarded INSPIRE fellowship**, from Department of Science and Technology (DST), Government of India, for pursuing PhD in India.
- 3 **Awarded 'Best Student in Elements of Astronomy and Astrophysics'**, based on the performance in the field during pursuing M.Sc. Applied Physics, from Amity University Kolkata.

Education

- 2021–present **PhD in Physics (Theoretical) - Indian Centre for Space Physics, Kolkata, University of Calcutta, Supervisor:** Dr. Tamal Basak, **Financial support:** DST-INSPIRE Fellowship (IF200266).
Broad subject area: Ionospheric Sciences
- 2018–2020 **M. Sc. Applied Physics, Amity University Kolkata, Kolkata.**
CGPA (10 point scale): 9.37
- 2014–2018 **B. Sc. Honours Physics, Dinabandhu Andrews College, Kolkata,** University of Calcutta.
- 2012–2014 **+2 Science- Majilpur J. M. Training School, Jaynagar, West Bengal,** WBCHSE.

Research Interests

Numerical simulation modelling of lower ionospheric D-region for different solar energetic events, Analysis of sub-ionospheric very low frequency (VLF) radio signal propagation effects to study the lower ionosphere

Journal Publications

- **S. Chakraborty**, S. Palit, S. Deb and T. Basak. Modeling of the long-term variability of D-region ionospheric electron density due to solar cycle 24. *Journal of Geophysical Research : Space Physics* (Under review)
- **S. Chakraborty**, R. Paul, and T. Basak. On the altitude profile of lower ionospheric d-region response time delay during solar flares. *Frontiers in Environmental Science* 10:1020137, page 2403, 2022. <https://doi.org/10.3389/fenvs.2022.1020137>
- **S. Chakraborty**, K. Aryan, T. Roy, S. K. Midya and T. Basak. Quantitative analysis of lower ionospheric response time delay associated to the solar flares. *Acta Geodaetica et Geophysica* (Springer) , 1–13, 2022. <https://doi.org/10.1007/s40328-022-00390-8>
- **S. Chakraborty** and T. Basak. Numerical analysis of electron density and response time delay during solar flares in mid-latitudinal lower ionosphere, *Astrophysics and Space Science* (Springer), volume 365, Article number: 184 (2020), <https://doi.org/10.1007/s10509-020-03903-5>

Book Chapter Publications

- **S. Chakraborty** and T. Basak . Brief Review on the Lower Ionosphere and the Effects of Solar Flare Thereon, *Advances in Modern and Applied Sciences: A collection of research reviews on contemporary research* (Volume 1), Chapter 2: Atmospheric and Space Sciences, pp. 137-145 (Scientific Research Publishing, Inc., ISBN 978-1-64997-437-2). 2022

Previous Research and Teaching Experiences

September, 2023– **Teaching Assistant at Department of Physics, Adamas University,,**
Subject: Mathematical Physics.

December, 2023 **Broad subject area:** Physics

January, 2020–June, 2020 **Major Project as a part of the final semester course curriculum of M.Sc. (Applied Physics),** *'Theoretical Analysis of Electron Density and Response Time Delay During Solar Flares in Mid-latitudinal Region of Lower Ionosphere'*, **Supervisor:** Dr. Tamal Basak, Department of Physics, Amity University Kolkata.

Broad subject area: Ionospheric Sciences

May, 2019–July, 2019 **Summer Internship Project as a part of the final semester course curriculum of M.Sc. (Applied Physics),** *'Phase Transition in Colloidal Monolayers with Honeycomb Symmetry: Exploring the Statistical Mechanics of Pure and Doped Low-Dimensional Exotic Systems'*, **Supervisor:** Dr. Kaustuv Das, Department of Physics, Jadavpur University and Dr. Ankush Sengupta, Department of Physics, Amity University Kolkata.

Broad subject area: Condensed Matter Physics

Conference, Workshop and Science Fair

- Oral Presentation at '**22nd National Space Science Symposium (NSSS) 2024**', organised by Goa University and Indian Space Research Organization (ISRO) held at Goa University, 26th February-1st March, 2024.
- Oral Presentation at '**Exploring the Universe: from Near to Far**', organised by Indian Centre for Space Physics (ICSP), Kolkata held at ICSP, Kolkata, 16th February-21st February, 2024.
- Participated in the workshop '**Space Situational Awareness and Space Traffic Management (SSA-STM) 2023**', organised by Indian Space Research Organization (ISRO) held at ISRO Headquarters, Bengaluru, 12th-14th October, 2023.
- Oral Presentation at '**URSI-Regional Conference in Radio Science (RCRS) 2022**', organised by Indian Radio Science Society (InRass) held at Indian Institute of Technology Indore, 1st-4th December, 2022.
- Participated in '**ARIES Training Training School in Observational Astronomy (AT-SOA) – 2021**' organised by 'Aryabhata Research Institute of Observational Sciences', Nainital, Uttarakhand from 17th to 24th May, 2021 in virtual mode.
- Poster presentation at '**International Conference on Condensed Matter Physics (IEMPHYS-19)**' organised by Institute of Engineering and Management (IEM) Kolkata from 14th to 16th November, 2019.
- Participated the workshop on robotics and artificial intelligence titled '**Robotelligence**', held at Amity University Kolkata in 2019.
- Participated the workshop on '**Physics Learning Methodology Theoretical and Experimental**' held at Dinabandhu Andrews College in 2017.
- District champion in 'Science Model Making' in '**South 24 Parganas District Student Youth Science Fair**' in 2013 and 2016.
- District runner-up in 'Science Model Making' in '**South 24 Parganas District Student Youth Science Fair**' in 2015.
- Participant in state level 'Science Model Making' of '**West Bengal State Students Youth Science Fair**' in 2013, 2015 & 2016.

Skills and Activities

Programming Language	MATLAB, C, FORTRAN
Environment	LaTex, Microsoft Office, Libre office
Operating System	Windows, Linux
Software	gnuplot, Photoshop

Languages

Bengali	Native Speaker
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English Bachelor, Master, and PhD in English, Master dissertations written in English, publications and presentations are in English
Hindi Speak and read
German Beginner, learned from Masters course curriculum at Amity University Kolkata

Personal Details

Father's Name Debasish Chakraborty
Mother's Name Subhasree Chakraborty
Residential Address Santoshpur, Jadavpur, Kolkata 700075, WB
Date of Birth Feb 20, 1997
Marital Status Unmarried