

Arnabesh Samadder

Curriculum Vitae

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Nationality: Indian

Languages: English, Bengali and Hindi.

Present Affiliation: IISER Kolkata, India at the position of a Research Scholar(PhD. Student)

Education

- 2023—Present **Indian Institute of Science Education and Research Kolkata, Mohanpur, West Bengal, India**
Presently a Ph.D. student with research interests in Theoretical Condensed Matter Physics.
Principal Investigator: Dr. Siddhartha Lal, Associate Professor, DPS, IISER Kolkata.
- 2020—2022 **Presidency University, Kolkata, West Bengal, India**
M.Sc. in Physics. With special papers in Condensed Matter Physics and Non-Linear Physics. I secured a CGPA of 8.35.
- 2017—2020 **Presidency University, Kolkata, West Bengal, India**
B.Sc. with a major in Physics. I secured a CGPA of 7.23.

Research Experience

- 2021—2022 **Masters Project: Characterisation of Spin Chains with two Ising symmetries**
Supervisor: Dr. Atanu Rajak, Dept. of Physics, IIT Hyderabad.
 - Realized the distinct topological phases of parallelly stacked Kitaev chains.
 - Numerically observed majorana edge modes for the special case of a simple Kitaev chain.
 - Demonstrated that for a spin-system being a Jordan-Wigner dual of the Kitaev chains, in the presence of interactions, we get eight phases that are topologically distinct to each other.
- 2020 **Undergraduate Project: Prelims of Quantum Hall Effect**
Supervisor: Prof. Arunava Chakrabarti, Dept. of Physics, Presidency University.
 - Explained the phenomena of the Integer Quantum Hall Effect using the concept of Landau Levels and band theory.
 - Realized the requirement of Low temperature and High magnetic field for observing Integer Quantum Hall Effect.
 - Developed an intuition for the said phenomena.

Awards and Accolades

- **National Fellowship for Scheduled Castes Students (NFSC) awarded in 2023** by National Scheduled Caste Finance and Development Corporation (NSFDC), Ministry of Social Justice and Empowerment, Government of India.

Computational Skills

- Primarily, I use **Python** and associated packages viz. **NumPy, SciPy, QuSpin, CuPy** and **Matplotlib**. Also, I am comfortable with **FORTRAN 77**, **MATLAB™**, **C++** and **Java**.
- I am comfortable with **LINUX** systems.
- I know markup languages like **LaTeX**, **HTML** and **CSS**.

National Level Test(India)

- Joint CSIR–UGC National Eligibility Test(NET), Paper appeared – Physical Science
- AIR: 204 (Lectureship Qualified)

Conferences Attended

- Participated as audience in **International Conference on Condensed Matter and Statistical Physics 2022(Online)** at Presidency University, Kolkata.