Chakradhar Rangi

Education

PhD in Physics

Graduate Research Assistant

August 2021 – Present Studying low-dimensional strongly correlated condensed matter systems using Functional Renormalization group and quantum-embedding theories like DMFT and its extensions with Dr. Ka-Ming Tam and Prof. Juana Moreno.

BS-MS

Indian Institute of Science Education and Research Bhopal May 2015 – July 2020

Scrangi.github.io

🛎 India

Thesis: Development of a Python Code for modelling Trajectory Surface Hopping on Ab Initio Potential Energy *Surfaces*

Internships and Projects

Major in Physics

Boston University

Research Visitor Acquired comprehensive understanding of the concepts behind the finite frequency Functional Renormalization Group formalism

Jawaharlal Nehru Center for Advanced Scientific Research

Research Visitor

Worked on computing analytical results for the time evolution of Kitaev-Chain under piece-wise noise using Transfer Matrix Method

Publications

1. C. Rangi, Moreno. J, Tam KM, Out of Time Order Correlation of the Hubbard Model with Random Local Disorder (under peer-review)

2. R. Pant, P. K. Verma, C. Rangi, E. Mondal, M. Bhati, V. Srinivasan, S. Wüster, A measure for adiabatic contributions to quantum transitions

3. C. Rangi, Tam KM, Moreno. J, Engineering a non-Hermitian second-order topological insulator state in quasicrystals

Conferences Attended

March 2024 **APS March Meeting 2024** Oral Presentation Minneapolis, Minnesota Abstract: Functional Renormalization Group Study of the One Dimensional Hubbard-Holstein Model

APS March Meeting 2023

Oral Presentation Las Vegas, Nevada Abstract: Numerical study of Integer quantum Hall transition in Harper-Hofstadter model with local random disorder

Localisation 2022

Oral Presentation Abstract: Local density of states of the Harper-Hofstadter model with random disorder

APS March Meeting 2022

Oral Presentation Abstract: Local density of states of the Harper-Hofstadter model with random disorder

Louisiana State University

Sapporo, Japan

August 2022

March 2022 Chicago, IL

March 2023

Boston, USA

Bengaluru, India

August 2020 - December 2020

June 2022

Programming Languages Libraries	Python, Julia, C, Git, LaTeX, HTML Numpy, Matplotlib, MPI4PY, Keras, VPython
Awards	
INSPIRE Coates Conference Travel Aw	Awarded by Govt. Of India for academic excellence in Grade XIIard Awarded by Dept of Physics & Astronomy at LSU to present the results of my doctoral research in APS March meeting 2023