

Tabasum Rahnuma

Contact Information

Department of Physics
Indian Institute of Science Education and Research
Bhopal, Madhya Pradesh, India, 462066
Mobile: +91 – 9853917115 (India)
Email: tabasum19@iiserb.ac.in
Website: <https://tabasum-ph.github.io/>

Education

- **Indian Institute of Science Education and Research, Bhopal, Madhya Pradesh, India**
Senior Research Fellow, July 2019-Present
Area of Research: Quantum Gravity and Celestial Holography.
Topic of Interest: Quantum Field theory, Gravitational Waves and Memory Effect, Black holes and Holography.
- **Utkal University** **Bhubaneswar, Odisha, India**
Master of Science in Physics, July 2016-April 2018
Specialization: Advanced Particle Physics and Field Theory
Programming Languages: Basic Fortran 77, C & C++.
- **Gopabandhu Science College, Odisha** **Cuttack, Odisha**
Bachelor of Science, July 2012-April 2015
Honors: Physics
- **CYBERNET, Odisha** **Cuttack, Odisha**
Post Graduate Diploma in Computer Education, June 2012-July 2013
- **Gopabandhu Science College** **Cuttack, Odisha**
Higher Secondary Education (CHSE), May 2010-March 2012
- **Govt. Girls' High School, Odisha** **Cuttack, Odisha**
Secondary Education, April 2008-March 2010

Schools/Workshops

- **Fundamental physics UK, Ministry of Education India** **Southampton University,**
2022 Chennai- Southampton Workshop *March 28th - 30th, 2022*
Holography, gauge theories and black holes.

- Princeton Center for Theoretical Science**
Virtual Workshop on Celestial Holography '22
 Asymptotic symmetries, amplitudes, and CFT bootstrap methods.

New Jersey, United States
Feb 1st - 4th, 2022
- Kavli Asian Winter School (KAWS)**
on Strings, Particles and Cosmology
 Blackhole information paradox, Gravitational S-Matrix, Holography, CFT, etc.

ICTS-TIFR, Bengaluru
Jan 10th - 23rd, 2022
- Abdus Salam International Centre for Theoretical Physics (ICTP)**
School on Superstring Theory and Related Topics
 Holography with Averaging, Aspects of the Swampland Symmetries, Anomalies and Topology.

Trieste, Italy
October 18th - 22nd, 2021
- Department of Physics, Utkal University, Odisha**
Skill Development Workshop
 Instrumentation and Repairing of Basic Instruments.

Bhubaneswar, Odisha
March-2017- April-2017

Internships/Projects

- School of Physical Science, NISER**
Summer Project Programme
 Measurement of the strange B meson lifetime using decay channel $B_s^0 \rightarrow J/\Psi + \Phi$ at the CMS detector

 - Obtained the data analysis report of the Monte Carlo simulation.
 - Analyzed and generated reports of both real and simulated data.**Analysis Framework:** Root (RooFit)

Bhubaneswar, Odisha
May 2017- July 2017
- Department of Physics, Utkal University, Odisha**
Summer Research Project (DST-INSPIRE)
 Optical Property study of Arsenic Selenide Thin Film.

 - Characterisation of the thin film.
 - Generated XRD and UV spectroscopy report.

Bhubaneswar, Odisha
April 2014- June 2014

Teaching Experience

- Department of Physics, IISER, Bhopal**
Teaching Assistantship
 For BS-MS degree courses on,

 - Mathematical Methods, 3rd year by Dr. Auditya Sharma.
 - Quantum Field Theory-I and II, 4th year by Dr. Arnab Rudra.
 - General Theory of Relativity, 4th year by Dr. Nabamita Banerjee.
 - Newtonian and Classical Mechanics, 3rd year by Dr. Nabamita Banerjee.

Bhopal, MP
Jan 2020- present

Achievements

- **Joint CSIR-UGC Junior Research Fellowship (July 2019- Present)**
◦ , *Indian Institute of Science Education and Research, Bhopal, MP.*
- **Eligibility of Lectureship(NET) Exam (Dec 2018)**
◦ , *Joint CSIR-UGC NET Examination*
- **IMA Scholarship (2016-2018)**
◦ , *Institute of Mathematics and Applications (IMA), Bhubaneswar.*
- **Award of INSPIRE Scholarship for the year 2012 (1788/2012) (2013 –2015)**
◦ , *Innovation in Science Pursuit for Inspired Research (INSPIRE),
Department of Science & Technology (DST), New Delhi-110016.*
- **Certificate of Merit (01/2009)**
◦ , *Uranium Talent Search Examination (UTSE).*

Publications

“Asymptotic Symmetry of Four Dimensional Einstein-Yang-Mills and Einstein-Maxwell Theory” Co-authored with Nabamita Banerjee, IISER, Bhopal, India and Ranveer Kumar Singh, NHETC and Department of Physics and Astronomy, Rutgers University, 126 Frelinghuysen Rd., Piscataway NJ 08855, USA.

N. Banerjee, T. Rahnema and R. K. Singh, “*Asymptotic Symmetry of Four Dimensional Einstein-Yang-Mills and Einstein-Maxwell Theory,*” [https://doi.org/10.1007/JHEP01\(2022\)033](https://doi.org/10.1007/JHEP01(2022)033).