




Surajit Biswas

✉ surajit18@iiserb.ac.in









🌐 Personal Website

🔗 Inspire HEP







Education

- July 2018-Present  **Ph.D., Indian Institute of Science Education and Research Bhopal (IIS-ERB), Madhya Pradesh, India**
Senior Research Scholar in High energy physics (IISERB String Theory Group)
Thesis title: *"Asymptotically Flat Gravity and Quantum Entropy of Its Black Holes"*
- August 2015-June 2017  **M.Sc. in Physics, Presidency University, West Bengal, India**
Specialization: Advanced condensed matter physics, Quantum field theory
Thesis title: *"The Quantum Higgs Phenomenon in Massless Scalar Electrodynamics"*.
- August 2012-July 2015  **B.Sc. (Physics Honours), Chakdaha College, Kalyani University, West Bengal, India**



Conferences, Workshops and Schools

- July 24th-29th, 2023  **Strings 2023**
Venue: Perimeter Institute for Theoretical Physics, Waterloo, Canada
-  **Student Talks on Trending Topics in Theory (ST4) 2023 Workshop**
Venue: Indian Institute Of Technology Mandi, Mandi, India
Topics: *de Sitter Holography, Black Hole Information Paradox, Scattering Amplitudes, Black Hole Microstate Counting, Fluid Gravity Correspondence.*
- July 2th-8th, 2023  **Quantum Black Holes, Quantum Information and Quantum Strings** Venue: Asia Pacific Center for Theoretical Physics, Pohang, South Korea
Gong show given and poster presented on *"Dual Theory of 3D Spin-3 Gravity"*
- June 14th-17th, 2023  **Holography@25 Workshop**
Venue: ICTP-SAIFR/IFT-UNESP, São Paulo, Brazil
- June 5th-13th, 2023  **Holography@25 School**
Venue: ICTP-SAIFR/IFT-UNESP, São Paulo, Brazil
- March 24th - 25th, 2023  **In-House Physics Symposium 2023**
Venue: Indian Institute of Science Education and Research Bhopal, Madhya Pradesh, India
Talk given and poster presented on *"Implication of $W(0, -2)$ algebra on 3D flat gravity theory"*
- January 9th - 18th, 2023  **The 17th Kavli Asian Winter School (KAWS) on Strings, Particles, and Cosmology**
Venue: Institute Of Basic Science, Daejeon, South Korea
Gong show and poster presented on *"Dual theory for maximally \mathcal{N} extended flat Supergravity"*
- November 24th - 25th, 2022  **Regional String Meet Bhopal Chapter**
Venue: Indian Institute of Science Education and Research Bhopal, Madhya Pradesh, India

Conferences, Workshops and Schools (continued)

- August 25th - 26th, 2022  **National Assembly of Researchers In Physics (NARI Φ)**
Venue: Indian Institute of Science Education and Research Bhopal, Madhya Pradesh, India
Poster presented on "Dual theory for maximally \mathcal{N} extended flat Supergravity"
- July 4th - 15th, 2022  **Student Talks on Trending Topics in Theory (ST4) 2022 Workshop**
Venue: Indian Institute Of Technology Indore, Indore, India
Topics: *Asymptotic symmetries and Celestial Holography, Modular theory and Algebraic QFT, Landscape in String Theory and related topics, Bulk reconstruction and Tensor Networks, Machine Learning primary for Physicists* .
- March 28th - 30th, 2022  **Fundamental physics UK and Ministry of Education India 2022 Chennai- Southampton Workshop**
Venue: Southampton University, United Kingdom
Topics: *Holography, gauge theories and black holes* .
- Feb 1st - 4th, 2022  **Princeton Center for Theoretical Science Virtual Workshop on Celestial Holography '22**
Venue: New Jersey, United States
Topics: *Asymptotic symmetries, amplitudes, and CFT bootstrap methods* .
- Jan 10th - 23rd, 2022  **Kavli Asian Winter School (KAWS) on Strings, Particles and Cosmology**
Venue: ICTS-TIFR, Bengaluru, India
Topics: *Black hole information paradox, gravitational S-Matrix, holography, conformal field theory* .
- October 18th - 22nd, 2021  **School on Superstring Theory and Related Topics**
Venue: Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy
Topics: *Holography with averaging, aspects of the swampland symmetries, anomalies and topology*
- Feb 2nd - 5th, 2021  **Princeton Center for Theoretical Science Virtual Workshop on Celestial Holography '21**
Venue: New Jersey, United States
Topics: *Asymptotic symmetries, amplitudes, and CFT bootstrap methods* .
- July 17th - 25th, 2019  **Student Talks on Trending Topics in Theory (ST4) 2019 Workshop**
Venue: Indian Institute of Science Education and Research Bhopal, Madhya Pradesh, India
Topics: *D-brane in String Theory, fluid-gravity correspondence, Matrix models, QFT in curved spacetime, stability of spacetimes in general relativity* .

Visiting Experiences

- September 26th - October 8th, 2023  **Group visit**
Venue: The Institute of Mathematical Sciences, Chennai, India
Seminar presented on " $W(0, b)$ algebra and the dual theory of 3D asymptotically flat higher spin gravity".
- October 6th, 2023  **Personal visit**
Venue: Chennai Mathematical Institute, Chennai, India

Teaching Experiences

January 2020 - August 2022

Teaching Assistantship

Venue: Department of Physics, Indian Institute of Science Education and Research Bhopal, Madhya Pradesh, India

Courses:

Mathematical Methods by Dr. Auditya Sharma, *Quantum Field Theory-I* by Dr. Arnab Rudra, *Classical Mechanics* by Dr. Nabamita Banerjee, *Nuclear Physics* by Dr. Rahul Srivastava, *Nuclear Physics* by Prof. Rajiv Gava.

Event Organizations

July 4th - 15th, 2023

Student Talks on Trending Topics in Theory (ST4) 2023 Workshop Main Organizer (National Workshop)

Venue: Indian Institute Of Technology Mandi, Mandi, India

January 2022 - August 2023

IISERB Strings Journal Club Coordinator

Venue: Indian Institute of Science Education and Research Bhopal, Madhya Pradesh, India

Achivements

June 2018

CSIR-UGC National Eligibility Test (NET) Junior Research Fellowship (JRF)
Rank - 142

April 2018

Joint Entrance Screening Test (JEST) 2018
Rank - 81

March 2018

Graduate Aptitude Test in Engineering (GATE) 2018
Rank - 868

June 2016

CSIR-UGC National Eligibility Test (NET) Lectureship (LS)
Rank - 79

April 2015

Joint Entrance Screening Test (JEST) 2015
Rank - 119

Research Publications

Journal and arXiv Articles

- 1 N. Banerjee, A. Bhattacharjee, **S. Biswas**, A. Mitra, and D. Mukherjee, " $W(0, b)$ algebra and the dual theory of 3D asymptotically flat higher spin gravity," Aug. 2023. arXiv: 2308.11583 [hep-th].
- 2 N. Banerjee, A. Bhattacharjee, **S. Biswas**, and T. Neogi, "Dual theory for maximally \mathcal{N} extended flat supergravity," *JHEP*, vol. 05, p. 179, 2022. DOI: 10.1007/JHEP05(2022)179. arXiv: 2110.05919 [hep-th].

Skills

Languages	Advance reading, writing, and speaking competencies in English, Bengali and Hindi.
Coding	Python, \LaTeX , Mathematica
Packages	xAct, xTensor and xPert
Web Dev	HTML, CSS, GitHub
Misc.	Academic research, teaching, \LaTeX typesetting and publishing.