

# Krishna Jalan

 : [krishnajalan@imsc.res.in](mailto:krishnajalan@imsc.res.in)

 : [live:krishnajalan.nitr](https://live.krishnajalan.nitr)

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## Research Interests

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Quantum information aspects of quantum field theory and quantum gravity, Black hole information paradox, Gauge/gravity duality.

## Education

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SEP 2020 – ....

### Ph.D. in Theoretical Physics

The Institute of Mathematical Sciences, Chennai

Thesis : Black Hole Dynamics & Holography

Supervisor : [Roji Pius](#)

AUG 2014 – MAY 2019

### (Integrated) M.Sc. in Physics

National Institute of Technology, Rourkela

Thesis : Anisotropic Thermalization in Strongly Coupled Field Theory via Gauge/Gravity Duality

Supervisor : [Subhash Chandra Mahapatra](#)

## Work Experience

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SEP 2019 – DEC 2019

### Research Student

Gauhati University, Guwahati

Project on early universe dynamics related to inflation theory and origin of density perturbations, and dynamical dark energy under the guidance of *Dr. Sanjeev Kalita*.

AUG 2018 – MAY 2019

### Master's Student

National Institute of Technology, Rourkela

Master's thesis project on the application of gauge/gravity duality to study anisotropic signature of magnetic field on the thermalization time of quark-gluon plasma.

MAY 2018 – JUL 2018

### Summer Research Fellow

Harish-Chandra Research Institute, Prayagraj (Allahabad)

Project on dark matter particles titled *A Study of Dark Matter* under the guidance of *Prof. Biswarup Mukhopadhyaya*.

MAY 2017 – JUL 2017

### Summer Research Fellow

Jawaharlal Nehru University, Delhi

Project on neutrino oscillations titled *Phenomenology of Neutrino Oscillation* under the guidance of *Dr. Poonam Mehta*.

## Conferences/Workshops

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### Attended

1. Indian Strings Meeting 2021, Indian Institute of Technology, Roorkee, India, December 2021.
2. All Lambdas Holography @ Prague, Online Conference, Czechia, October 2021.
3. Black Holes Inside and Out, Online Conference, Japan, September 2021.
4. Workshop on Astronomy & Astrophysics, National Institute of Technology, Rourkela, India, sponsored by Inter-University Center for Astronomy & Astrophysics, Pune, India, March 2018.

5. Workshop on General Relativity & Cosmology, Department of Physics & Astronomy, National Institute of Technology, Rourkela, India, February 2018.
6. Mathematics Training and Talent Search program (Level O), India, June 2016.

## Awards & Achievements

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- ◇ Institute Gold Medal for the Best Postgraduate with Integrated M.Sc. Degree among the natural sciences, National Institute of Technology, Rourkela, awarded in January, 2020.
- ◇ Institute Silver Medal for the Best Postgraduate with Integrated M.Sc. Degree in Department of Physics & Astronomy, National Institute of Technology, Rourkela awarded in January, 2020.
- ◇ Selected for the prestigious *Summer Research Fellowship*, awarded jointly by the academies of sciences in India (IASc-INSa-NASi), for 2 consecutive years, May - July, 2017 and 2018.
- ◇ Recipient of Academic Excellency Award, Department of Physics and Astronomy, NIT Rourkela, for 4 consecutive academic years, 2014-15, 2015-16, 2016-17 and 2017-18.
- ◇ INSPIRE Scholarship awarded by Department of Science and Technology, Government of India, to the top 1 percentile students of the country based on Higher Secondary merit, February, 2015 - May, 2019.
- ◇ Qualified **Regional Mathematics Olympiad** from the North Eastern Region of India, 2013.

## Teaching Experience

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Tutor for a class of about 20 students, freshmen Physics Remedial Class, Student Counselling Program, NIT Rourkela, 2017-18.

## Skills

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TECHNICAL	<ul style="list-style-type: none"> <li>• OS — Linux, Windows.</li> <li>• CODING — C (basic), C++ (basic), FORTRAN (intermediate), Python (intermediate), Mathematica (intermediate), Maxima (basic).</li> <li>• DOCUMENTATION — <math>\text{\LaTeX}</math> (advanced), Office (advanced).</li> </ul>
LANGUAGES	Marwadi (mother tongue), Hindi (fluent), English (fluent), Assamese (basic), Bengali (basic), Japanese (basic), Spanish (learner).

## Non-academic Duties

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AUG 2017 – APR 2018	Mentor at Student Counselling Program, NIT Rourkela : academic and non-academic guide to a group of 4 freshmen.
APR 2011 – FEB 2012	School Head-boy during high school.

## Referees

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Dr. Roji Pius  
Department of Theoretical Physics  
The Institute of Mathematical Sciences, Chennai

Dr. Subhash Chandra Mahapatra  
Department of Physics & Astronomy  
National Institute of Technology, Rourkela

Email address available upon request.