

High Energy & Gravitational Physics

Gravity, the force we encounter in our everyday lives, remains one of the least understood forces in nature. Our team is focused on integrating the principles of quantum theory and gravity in a coherent framework. A hundred years ago, Einstein demonstrated that gravity is intricately linked with the curvature of spacetime. More recently, research on black holes has led to a profound revelation: our perception of gravity may actually be a holographic projection of a lower-dimensional quantum field theory. Furthermore, the detection of gravitational waves not only validates Einstein's theory but also provides a groundbreaking new means to observe the universe and test various aspects of modern physics and astrophysics.

Faculty

Prof. Subhash Karbelkar
Prof. Rahul Nigam
Prof. Prasant Samantray
Prof. Swastik Bhattacharya
Prof. Sashideep Gutti
Prof. Rickmoy Samanta
Prof. Jahanur Hoque
Prof. Asrarul Haque

We are interested in:

- AdS/CFT Correspondence
- Quantum fields in curved spacetime
- Dynamical horizons
- Black hole thermodynamics
- Cosmology & Gravitational waves
- Mathematical Physics

PhD Students

Ronit Mahapatra
Yash Pareek
Anamika Avinash Pathak
Akhil U Nair
Suraj Kumar Maurya
Rakesh Kumar Jha
Akshay Kulkarni
Pritam Roy

Former PhD Students

Dr. Haridev S. R
Dr. Ravi Teja
Dr. Rahul Thakur
Dr. Varalakshmi