

High Energy & Gravitational Physics

Gravity is the most familiar and yet least understood force that we know of. Our group is really interested in putting the ideas of quantum theory and gravity together in a consistent manner. A century ago, Einstein revealed that gravitation is intimately connected with the curvature of the fabric of space and time. More recently, research into black holes has led to an even more startling conclusion: our gravitational reality might be the hologram of a lower-dimensional quantum field theory. On the other side, the detection of gravitational waves confirms the prediction of Einstein's theory and also opens up a fundamentally new observational window into the universe and a unique laboratory to test our understanding of many different aspects of modern physics and astrophysics."

Faculty:

Prof. Subhash Karbelkar
Prof. Rahul Nigam
Dr. Prasant Samantray
Dr. Swastik Bhattacharya
Dr. Sashideep Gutti

We are interested in:

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

PhD students:

Haridev S R
Yash Pareek
Anamika Avinash Pathak
Akhil U Nair
Suraj Kumar Maurya
Ravi Teja
Rahul Thakur
Varalakshmi(alumni)