Amal Kumar Raychaudhuri (14 Sep 1923 – 18 Jnune 2005) was an Indian physicist, known for his pioneering work in general relativity and cosmology. His most significant contribution is the eponymous Raychaudhuri equation, which demostrates that singularities arise inevitably in general relativity. This is a key ingredient in the proofs of the Penrose–Hawking singularity theorems. Raychaudhuri was also revered as a teacher during his tenure at Presidency College, Kolkata.

LECTURE SERIES (Online)

ADVANCED GENERAL RELATIVITY
A Centennial Tribute to Amal Kumar Raychaudhuri

ICTS is pleased to announce a special lecture series by Prof. Sunil Mukhi as a centennial tribute to Prof. Amal Kumar Raychaudhuri.

The goal of this lecture series is to provide a brief, but precise, overview of topics relevant to current research in General Relativity. The course will focus exclusively on classical aspects of gravity and, towards the end, on the quantum behaviour of particles/fields in gravitational backgrounds.

List of topics

- Brief review of basic General Relativity and relevant mathematics.
- Review of Schwarzschild black holes, asymptotically deSitter and anti-deSitter spacetimes.
- Geometry and topology of spacetimes: causality, globally hyperbolic spacetimes, Cauchy surfaces.
- Geodesics, focusing and Raychaudhuri equations, Penrose and Hawking singularity theorems.
- Black holes: causality properties, cosmic censorship.
- Thermal properties of Rindler space and black holes, Hawking radiation, black hole entropy and thermodynamics.

Sunil Mukhi
Adjunct Professor
ICTS-TIFR

20 March - 28 April 2023

Mondays   2:00 – 3:30 PM IST
Fridays   4:00 – 5:30 PM IST