Geodesic Yatra: The influence of Amal K. Raychaudhuri

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28 Oct 2024 (Monday) | 16:00 Hrs (Tea / Coffee 15:45 Hrs) | Venue: TIFRH Auditorium

In 1955, Amal Raychaudhuri analysed the properties of space-time and derived an equation for a geometric quantity known as "expansion". This tells us how the volume of a small unit of space expands or contracts along a geodesic curve. His equation was to have far-reaching consequences. It was adapted by Hawking to prove his famous singularity theorems and a variant of the equation was used by Penrose to prove the inevitability of black hole formation. Subsequently the equation has helped to understand entropy and the laws of thermodynamics, as generalised to include gravitating systems. It has also been used to illuminate the remarkable connection between gravity and quantum entanglement. These developments will be surveyed in a broad, non-technical framework.

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