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ICTS Astrophysics & Relativity Seminar

- Title : GRMHD Simulations of Accretion onto Reissner-Nordström Spacetimes
- Speaker : Ruchi Mishra (Nicolaus Copernicus University, Toruń, Poland.)
- Date : Thursday, 17 December 2026
- Time : 03:30 PM (IST)
- Abstract : Accretion onto horizonless compact objects can differ substantially from the familiar black-hole case, particularly when the inner spacetime contains a repulsive gravitational region rather than an event horizon. The Reissner Nordström spacetime provides a simple example: when the charge exceeds the mass, the spacetime contains a naked singularity with a characteristic zero-gravity radius and a circular-orbit structure distinct from that of a black hole. Previous equilibrium studies have shown that rotating fluids can form toroidal configurations around the naked singularity. Building on these results, I will present ongoing three-dimensional GRMHD simulations of magnetized accretion flows in RN black-hole and naked singularity spacetimes, focusing on how the charge influences matter accumulation, angular-momentum transport, and magnetic-field structure.
- Venue : Feynman Lecture Hall
Zoom Meeting: <https://icts-res-in.zoom.us/j/92289998701?pwd=bTV33Xqoh4DgnhjD1bVPWcSzPz4lGc.1>
Meeting ID: 922 8999 8701
Passcode: 494630