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ICTS Astrophysics and Relativity Seminar

- Title** : Close but no cigar: A brief review of pulsar glitches and some new perspectives
- Speaker** : Anantharaman S V (Ashoka University)
- Date** : Friday, 28 November 2025
- Time** : 11:30 AM (IST)
- Abstract** : Pulsars are rotating neutron stars that steadily slow down due to the emission of light. Occasionally, they increase in speed and relax back. This is referred to as a glitch. Its cause is widely attributed to the transfer of angular momentum to the crust of the star from the array of superfluid vortices enclosed within. The magnitude of such a sudden increase in rotation rate defines the size of the glitch. The distribution of glitch sizes in individual pulsars, with the power-law being the most argued for, is shrouded in uncertainty due to the low sample size. We revisit the data for PSR J0537-6910, the pulsar with the most glitches, and find a bimodality in the distribution. To understand this, we set up a superfluid vortex simulator and study several paradigms that mimic phenomena expected in neutron stars. In this talk, we shall briefly review the physics of pulsar glitches, discuss the results of this study, and dabble in some related oddities.
- Venue** : Feynman Lecture Hall
<https://icts-res-in.zoom.us/j/99417372965?pwd=butdVn1pQ7LTSmFscfQkXveXWomHgo.1>
Meeting ID: 994 1737 2965
Passcode: 282829