

Astrophysics Seminar

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Probing the Neutron Star Equation of State Through X-ray Timing

Deepto Chakrabarty

Massachusetts Institute of Technology

Kavli Institute for Astrophysics and Space Research

Abstract:

Accurately mapping the neutron star mass-radius relation will reveal the equation of state of ultradense matter, a key issue in the astrophysics of core-collapse supernovae and black hole formation as well as in the physics of the strong interaction.

Modeling the amplitudes and shapes of the X-ray pulsations observed from hot, moderately or rapidly rotating neutron stars provides a direct method for measuring neutron-star properties. This constitutes an important part of the science case for the forthcoming NICER and proposed LOFT X-ray missions. I will show how pulse profiles from moderately-spinning pulsars in two different energy bands can enable separate measurement of the neutron star mass and radius.

Next Week

- *There are no more seminars for the Fall Semester.*
- *Good luck on finals and see you next Spring!*

