

An approach to constrain neutron-star structure from Clocked bursters

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Type-I X-ray bursts are rapidly brightening phenomena triggered by the nuclear burning of light elements near the surface of accreting neutron stars. Most X-ray bursters behave very irregularly, but some of them show quite regular activity, i.e., constant recurrence time and the similar shape of light curves in the burst sequence. They are called Clocked bursters, which help constrain many model parameters, such as accretion rate, the composition of accreted matter, reaction rates relevant to proton-rich nuclei, neutron-star structure, and temperature. In this talk, we discuss the impact of uncertainties of the neutron-star equation of state on burst light curves. We also present an approach to probe the neutron-star structure from the observed recurrence time and light-curve shape of two Clocked bursters, GS 1826–24 and 1RXS J180408.9–342058.

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