

The 1st IReNA-Ukakuren Joint Workshop “Advancing Professional  
Development in Nuclear Astrophysics and Beyond”

Contribution ID: 63

Type: **Talk**

## Constraints on Neutron Star Structure from Clocked Burster 1RXS J180408.9-342058

*Wednesday, 30 August 2023 12:00 (30 minutes)*

Type-I X-ray bursts are rapidly brightening phenomena triggered by the nuclear burning of light elements near the surface of accreting neutron stars. Observed light curves are sensitive to many model parameters. We focus on the uncertainties of the nuclear equation of states, which determines the mass and radius of neutron stars. Regarding the observations, we focus on one of the regular bursters, 1RXS J180408.9-342058, where two series of X-ray bursts have been detected by NuStar. Based on our numerical models covering whole areas of neutron stars, we will discuss the possibility of constraining the equation of states and the mass from the observed recurrence time and persistent flux.

**Primary authors:** DOHI, Akira (RIKEN); IWAKIRI, Wataru (Chiba University); NISHIMURA, Nobuya (RIKEN); NODA, Tsuneo (Kurume I. T.); Dr NAGATAKI, Shigehiro (RIKEN, Japan); HASHIMOTO, Masa-aki (Kyushu University)

**Presenter:** DOHI, Akira (RIKEN)

**Session Classification:** Accreting Neutron Stars