

Nucleosynthesis and Evolution of Neutron Stars (XRB2025)
2025-01-27–2025-01-30 (YITP, Kyoto University)
Program

Date				Name	Affiliation	Title	Chair
1/27	13:20	13:30	10m	Nobuya Nishimura	The University of Tokyo	Opening	Masakiyo Kitazawa
	13:30	14:10	40m	Lucy McNeill	RIKEN	Pre-supernova stellar structure and hydrodynamics leading to the formation of neutron star	
	14:10	14:35	25m	Ko Nakamura	Fukuoka University	3D simulations of supernovae: a systematic investigation of neutron star properties	
	14:35	15:15	40m	Xu-Guang Huang	Fudan University	Instabilities in chiral plasma	
	15:15	15:40	25m	Takumi Muto	Chiba Institute of Technology	Equation of state and neutrino emissivities with kaon condensates in hyperon-mixed matter	
	15:40	16:10	30m	Break			
	16:10	16:50	40m	Aya Bamba	The University of Tokyo	Recent progress on supernova remnants with XRISM X-ray satellite	Toru Tamagawa
	16:50	17:15	25m	Tsuneo Noda	Kurume Institute of Technology	Compact Star cooling with quark-hadron continuity	
	17:15	17:40	25m	Koichi Hamaguchi	The University of Tokyo	Exploring Physics Beyond the Standard Model via Temperature Observations of Neutron Stars	
	18:00	20:00	2h	Banquet			
1/28	9:30	10:10	40m	Yasutaka Taniguchi	Fukuyama University	Impact of cluster resonances on low-energy nuclear fusion reactions	Nobuya Nishimura
	10:10	10:50	40m	Hendrik Schatz	Michigan State University	Nuclear reactions in accreting neutron stars at FRIB	
	10:50	11:20	30m	Break			
	11:20	12:00	40m	Koutarou Kyutoku	Chiba University	Multimessenger astronomy with compact binary mergers in light of O4	
	12:00	12:25	25m	Bryn Knight	University of Guelph	Degeneracy corrections for stellar neutron capture rates and their implications for the R-process	
	12:25	14:00	1h 35m	Lunch			
	14:00	14:40	40m	Ang Li	Xiamen University	Hypernuclei Studies: A Key to Resolving the Hyperon Puzzle in Neutron Stars	Tomoya Naito
	14:40	15:20	40m	Nils Paar	University of Zagreb	Nuclear structure and dynamics at finite temperature in the relativistic nuclear energy density functional approach	
	15:20	15:45	25m	Federico Maria Guercilena	Università di Trento	BARONET: A Lightweight Nuclear Network Geared Towards Coupling with Hydrodynamic Simulations	
	15:45	16:10	25m	Chengpeng Yu	University of Tsukuba	Fermion Operator Expansion: Approach to Study Neutron Star Inner Crust	
	16:10	16:40	30m	Break			
	16:40	18:00	1h 20m	Poster			
1/29	9:30	10:10	40m	Yuki Fujimoto	UC Berkeley/RIKEN	New Perspectives on Dense QCD Matter	Nils Paar
	10:10	10:50	40m	Oliver Just	GSI Darmstadt	Equation-of-state constraints from helium in kilonovae	
	10:50	11:20	30m	Break			
	11:20	12:00	40m	Daisuke Suzuki	The University of Tokyo	Recent progress of nuclear astrophysics at RI Beam Factory	
	12:00	12:25	25m	Kenichi Yoshida	Osaka University	β -decay half-life as an indicator of shape-phase transition in neutron-rich Zr isotopes	
	12:25	14:00	1h 35m	Lunch			
	14:00	14:40	40m	Takayuki Miyagi	University of Tsukuba	Nuclear ab initio calculation for astrophysics	Hidetoshi Yamaguchi
	14:40	15:20	40m	Kimiko Sekiguchi	Institute of Science Tokyo	Experimental approach to three-nucleon forces – recent topics -	
	15:20	15:50	30m	Break			
	15:50	16:15	25m	Shinya Wanajo	Tohoku University	Production of heaviest nuclei in compact binary mergers	
	16:15	16:40	25m	Hiroki Kawashimo	The University of Tokyo	Discovering the most important temperatures of helium burning reactions in pair-instability supernova nucleosynthesis	
	16:40	17:05	25m	Tatsuhiko Hattori	Institute of Science Tokyo	GPE Calculations for Superfluid Neutron Quantum Vortices and Superconducting Proton Fluxtubes in Neutron Stars	
	1/30	9:30	10:10	40m	Toshihiro Fujii	Osaka Metropolitan University	Hunting origins of ultrahigh-energy cosmic rays
10:10		10:35	25m	Ryo Higuchi	RIKEN	Constraints on super-heavy UHECR source model with a large-scale structure simulation	
10:35		11:05	30m	Break			
11:05		11:45	40m	Duncan Galloway	Monash University	New Views on Thermonuclear Bursts	
11:45		12:25	40m	Motoko Serino	Aoyama Gakuin University	Observations of long X-ray bursts	
12:25		14:00	1h 35m	Lunch			
14:00		14:40	40m	Tatsuya Furuno	Osaka University	Investigation of ^{60}Zn resonance states for X-ray burst light curve	Akira Dohi
14:40		15:20	40m	Yi Hua Lam	Institute of Modern Physics, Chinese Academy of Sciences	TBA	
15:20		15:45	25m	Yoshihiro Aritomo	Kindai University	Systematic study of fission process in heavy and superheavy mass regions related to r-process nucleosynthesis	
15:45		16:10	25m	Tomoyuki Maruyama	Nihon University	Photon Vortex Generation and Photonic Reactions by Photon Vortex in Astronomical System	
16:10	16:20	10m	Tomoya Naito	RIKEN	Closing		

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Poster List

Name	Affiliation	Title
Akira Dohi	RIKEN	Modeling a new "Clocked" X-ray Burster SRGA J144459.2--604207
Amira Aoyama	Tokyo University of Science	Prompt follow-up observation of the X-ray transient MAXI J1752–457 with the CubeSat X-ray observatory NinjaSat
Ellis Owen	RIKEN	Ultra high energy cosmic rays in large-scale astrophysical structures: neutron production and implications for cosmic ray confinement and escape
Fumio Terazaki	Tokyo University of Science	Complex-valued problem on FRG analysis of relativistic BEC
Hao Huang	Institute of Modern Physics, Chinese Academy of Sciences	Urca Pair Fe-Mn and its Impact on the Thermal Evolution of Neutron Star Crust
Hyukjin Kwon	Institute of Science Tokyo	Constraining of Nuclear Matter Equation of States with Rotating Neutron Stars
Irin Sultana	Central Michigan University	Sensitivity Study of Type-I X-ray Burst To Nuclear Reaction Rates
Kenta Hagihara	University of Tsukuba	Nuclear properties at neutron-rich region
Kohta Nakagawa	Kindai Unviersity	Mechanisms in production of evaporation residue for multinucleon transfer reactions with heavy nuclei
Kosei Nakagawa	Kyoto University	Dineutron-dineutron correlation in ^8He
Kosuke Kawai	Kindai Unviersity	Production probability of new superheavy element using dynamical model
Masahiko Katsuma	Osaka City University/Universite Libre de Bruxelles	The triple-alpha reaction at low temperatures by an exact three-body model
Masamitsu Mori	National Astronomical Observatory of Japan	Long-term supernova simulation with axion-like particles
Nobuya Nishimura	The University of Tokyo	The impacts of nuclear reaction uncertainties on explosive nucleosynthesis of core-collapse supernovae
Pranjal Tambe	Inter-University Centre for Astronomy and Astrophysics	Effect of Magnetic Field on Urca Processes in Neutron Star mergers
Rahul Jain	Lawrence Livermore National Laboratory	Crust Composition and the Shallow Heat Source in KS 1731-260
Shin-ichiro Fujimoto	Kumamoto Kosen	Impact of internal-conversion X-rays and nuclear isomers on X-ray and gamma ray emission from neutron-rich ejecta in a binary compact-star merge
Taishi Katsuragawa	Central China Normal University	Compact Objects in Modified Gravity
Tatsuya Matsuki	Tokyo University of Science	Impacts of multineutrons on nuclear compositions and neutrino reaction rates in core-collapse supernova
Toshihiro Takagi	Ehime University	Application of the Accretion Torque Model to the X-ray Binary Pulsar A 0535+262