



# Nucleosynthesis and Evolution of Neutron Stars

## Monday, January 27, 2025

### Oral Presentation: Session 1 - Maskawa Hall (1:20 PM - 3:40 PM)

-Conveners: Masakiyo Kitazawa

time	[id] title	presenter
1:20 PM	[52] Opening	Dr NISHIMURA, Nobuya
1:30 PM	[38] Pre-supernova stellar structure and hydrodynamics leading to the formation of neutron star	Dr MCNEILL, Lucy
2:10 PM	[36] 3D simulations of supernovae: a systematic investigation of neutron star properties	NAKAMURA, Ko
2:35 PM	[47] Instabilities in chiral plasma	HUANG, Xu-Guang
3:15 PM	[34] Equation of state and neutrino emissivities with kaon condensates in hyperon-mixed matter	MUTO, Takumi

### Oral Presentation: Session 2 - Maskawa Hall (4:10 PM - 5:40 PM)

-Conveners: Toru Tamagawa

time	[id] title	presenter
4:10 PM	[30] Recent progress on supernova remnants with XRISM X-ray satellite	BAMBA, Aya
4:50 PM	[28] Compact Star cooling with quark-hadron continuity	NODA, Tsuneo
5:15 PM	[18] Exploring Physics Beyond the Standard Model via Temperature Observations of Neutron Stars	HAMAGUCHI, Koichi

## Tuesday, January 28, 2025

### **Oral Presentation: Session 3 - Maskawa Hall (9:30 AM - 10:50 AM)**

-Conveners: Nobuya Nishimura

time	[id] title	presenter
9:30 AM	[22] Impact of cluster resonances on low-energy nuclear fusion reactions	TANIGUCHI, Yasutaka
10:10 AM	[53] Nuclear reactions in accreting neutron stars at FRIB	SCHATZ, Hendrik

### **Oral Presentation: Session 4 - Maskawa Hall (11:20 AM - 12:25 PM)**

-Conveners: Nobuya Nishimura

time	[id] title	presenter
11:20 AM	[17] Multimessenger astronomy with compact binary mergers in light of O4	Prof. KYUTOKU, Koutarou
12:00 PM	[10] Degeneracy corrections for stellar neutron capture rates and their implications for the R-process	KNIGHT, Bryn

### **Oral Presentation: Session 5 - Maskawa Hall (2:00 PM - 4:10 PM)**

-Conveners: Tomoya Naito

time	[id] title	presenter
2:00 PM	[32] Hypernuclei Studies: A Key to Resolving the Hyperon Puzzle in Neutron Stars	Prof. LI, ANG
2:40 PM	[24] Nuclear structure and dynamics at finite temperature in the relativistic nuclear energy density functional approach	PAAR, Nils
3:20 PM	[12] BARONET: A Lightweight Nuclear Network Geared Towards Coupling with Hydrodynamic Simulations	GUERCILENA, Federico Maria
3:45 PM	[16] Fermion Operator Expansion: Approach to Study Neutron Star Inner Crust	YU, Chengpeng

# Wednesday, January 29, 2025

## Oral Presentation: Session 6 - Maskawa Hall (9:30 AM - 10:50 AM)

-Conveners: Nils Paar

time	[id] title	presenter
9:30 AM	[39] New Perspectives on Dense QCD Matter	FUJIMOTO, Yuki
10:10 AM	[48] Equation-of-state constraints from helium in kilonovae	JUST, Oliver

## Oral Presentation: Session 7 - Maskawa Hall (11:20 AM - 12:25 PM)

-Conveners: Nils Paar

time	[id] title	presenter
11:20 AM	[54] Recent progress of nuclear astrophysics at RI Beam Factory	SUZUKI, Daisuke
12:00 PM	[37] $\beta$ -decay half-life as an indicator of shape-phase transition in neutron-rich Zr isotopes	YOSHIDA, Kenichi

## Oral Presentation: Session 8 - Maskawa Hall (2:00 PM - 3:20 PM)

-Conveners: Hidetoshi Yamaguchi

time	[id] title	presenter
2:00 PM	[35] Nuclear ab initio calculation for astrophysics	MIYAGI, Takayuki
2:40 PM	[51] Experimental approach to three-nucleon forces – recent topics -	SEKIGUCHI, Kimiko

## Oral Presentation: Session 9 - Maskawa Hall (3:50 PM - 5:05 PM)

-Conveners: Hidetoshi Yamaguchi

time	[id] title	presenter
3:50 PM	[2] Production of heaviest nuclei in compact binary mergers	WANAJO, Shinya
4:15 PM	[29] Discovering the most important temperatures of helium burning reactions in pair-instability supernova nucleosynthesis	KAWASHIMO, Hiroki
4:40 PM	[21] GPE Calculations for Superfluid Neutron Quantum Vortices and Superconducting Proton Fluxtubes in Neutron Stars	HATTORI, Tatsuhiro

# Thursday, January 30, 2025

## Oral Presentation: Session 10 - Maskawa Hall (9:30 AM - 10:35 AM)

-Conveners: Eiji Kido

time	[id] title	presenter
9:30 AM	[7] Hunting origins of ultrahigh-energy cosmic rays	FUJII, Toshihiro
10:10 AM	[44] Constraints on super-heavy UHECR source model with a large-scale structure simulation	HIGUCHI, Ryo

## Oral Presentation: Session 11 - Maskawa Hall (11:05 AM - 12:25 PM)

-Conveners: Eiji Kido

time	[id] title	presenter
11:05 AM	[4] New Views on Thermonuclear Bursts	GALLOWAY, Duncan
11:45 AM	[31] Observations of long X-ray bursts	SERINO, Motoko

## Oral Presentation: Session 12 - Maskawa Hall (2:00 PM - 3:20 PM)

-Conveners: Akira Dohi

time	[id] title	presenter
2:00 PM	[50] Investigation of $^{60}\text{Zn}$ resonance states for X-ray burst light curve	FURUNO, Tatsuya
2:40 PM	[56] Study of Photospheric Radius Expansion Bursts of SAX J1808.4-3658	LAM, Yi Hua

## Oral Presentation: Session 13 - Maskawa Hall (3:30 PM - 4:30 PM)

-Conveners: Akira Dohi

time	[id] title	presenter
3:30 PM	[42] Systematic study of fission process in heavy and superheavy mass regions related to r-process nucleosynthesis	ARITOMO, Yoshihiro
3:55 PM	[20] Photon Vortex Generation and Photonuclear Reactions by Photon Vortex in Astronomical System	MARUYAMA, Tomoyuki
4:20 PM	[57] Closing Remark	NAITO, Tomoya