



Nucleosynthesis and Evolution of Neutron Stars

27—30 Jan. 2025 @YITP, Kyoto U., JAPAN

Second Circular

We cordially inform you that an international conference, “Nucleosynthesis and Evolution of Neutron Stars”, will be held from 27 to 30 January 2025 at Kyoto University, Japan. Everyone is welcome to attend it.

Scope of This Workshop

The primary focus of this workshop is on the various “evolutions” of neutron stars, exploring the intersection of astrophysics theory and observation, as well as the connections to fundamental microphysics, including nuclear physics.

The specific themes of the workshop will include the long-term thermal evolution of neutron stars, their evolution in binary star systems (e.g., X-ray bursts, neutron star mergers), the evolution of matter in the universe (e.g., nucleosynthesis), and various other aspects of cosmic/galactic evolution. Additionally, we will explore future research possibilities in astronomy, nuclear physics, and fundamental physics through the lens of neutron star studies.

Topics (Scientific Sessions)

- Stellar evolution, supernovae, and formation of compact objects
- X-ray and other astronomical observation
- High-energy astrophysics and cosmic rays
- Hydrostatic and explosive nucleosynthesis
- Nuclear physics in neutron stars: Equation of states (EoS), fusion reactions, and radioactive decay
- Neutron stars and fundamental physics
- Other related topics in nuclear astrophysics

Invited Speakers

- **Aya Bamba** (U. Tokyo, Japan) [Supernovae, Compact objects, High-energy astronomy](#)
- **Toshihiro Fujii** (Osaka Metropolitan U., Japan) [High-energy cosmic rays](#)
- **Yuki Fujimoto** (RIKEN, Japan) [Neutron stars, QCD](#)
- **Tatsuya Furuno** (Osaka U., Japan) [Experimental nuclear physics related to astrophysics](#)
- **Duncan Galloway** (Monash U., Australia) [X-ray binaries](#)
- **Xu-Guang Huang** (Fudan U., China/YITP, Kyoto U., Japan) [QCD](#)
- **Oliver Just** (GSI, Germany) [Compact-object binaries, Nuclear EoS, Neutrino](#)
- **Koutarou Kyutoku** (Chiba U., Japan) [Compact-object binaries, Nuclear EoS, Gravitational waves](#)
- **Yi Hua Lam** (IMP, CAS, China) [X-ray bursts, Nuclear-structure calculation \(shell model\)](#)
- **Ang Li** (Xiamen U., China) [Nuclear-structure calculation \(hyper nuclei\), Neutron stars](#)
- **Lucy McNeill** (RIKEN, Japan) [Stellar evolution, Supernovae](#)
- **Takayuki Miyagi** (U. Tsukuba, Japan) [Nuclear-structure calculation \(*ab initio*\)](#)
- **Nils Paar** (U. Zagreb, Croatia) [Nuclear-structure calculation \(density functional theory\)](#)
- **Hendrik Schatz** (MSU, USA) [Nuclear astrophysics experiments in FRIB](#)
- **Kimiko Sekiguchi** (Science Tokyo, Japan) [Experimental nuclear physics \(three-body interaction\)](#)
- **Motoko Serino** (Aoyama Gakuin U., Japan) [X-ray bursts](#)
- **Daisuke Suzuki** (U. Tokyo, Japan) [Experimental nuclear physics in RIBF](#)
- **Yasutaka Taniguchi** (Fukuyama U., Japan) [Nuclear-theory calculation \(cluster structure\)](#)

Venue

[Maskawa Hall](#) (First floor of Maskawa Building for Education and Research), Kyoto University

Access

Kyoto locates on the Kansai area of Japan. One can easily access to Kyoto from Tokyo (Haneda or Narita Airports) via a high-speed train “Shinkansen” or from Kansai Airport via an express train “Haruka”. One can access to Kyoto University from Kyoto station via a city bus. The detailed information will be found on the website or the Google Map.

Program

Scientific program can be found in <https://indico.yukawa.kyoto-u.ac.jp/event/46/timetable/>.

Registration Desk

The registration desk is in front of the Maskawa Hall. It will open from 13:00–13:20 on the first day. Apart from the above, the participants are supposed to find the chair persons (Kitazawa, Naito, and Nishimura) to pay the fee.

Oral Presentation

Duration of the oral presentation is

Invited talks 35 min. presentation and 5 min. discussion (total 40 min.),

Contributed talks 20 min. presentation and 5 min. discussion (total 25 min.).

The presenters are supposed to use their own laptop computers for the presentation. The HDMI connection is available. Just in case of trouble, the presenters are recommended to prepare the presentation file in PDF format. We also appreciate if you can put your presentation file in PDF format in the following URL:

<https://www.dropbox.com/request/u0oyuwYToIp9iIwbS43v>

Poster Presentation

The poster session will be held on the afternoon of 28 January at “Kobayashi-Maskawa Memorial Room” (next to Maskawa Hall). The posters can be put up from the first to the last day. They should be prepared in portrait A0 size.

Coffee Break

The coffee break will be held at “Kobayashi-Maskawa Memorial Room” (next to Maskawa Hall).

Banquet

The poster session will be held on the afternoon of 27 January at “Former Head Office of Forest Research Station” (in front of Maskawa Building for Education and Research).

Accommodation

Participants are supposed to book their accommodation by themselves. There are many hotels in the city center of Kyoto since it is one of the most popular sightseeing places in Japan. We recommend the area around Kyoto Station and Shijo Area.

Fee

- JPY 1,000 (students) or 2,000 (others) for coffee break etc. (for all the on-site participants)
- JPY 2,000 (students) or 4,000 (others) for banquet (for those who join)

Both fees should be paid by cash at the reception desk.

Organizers

- Akira Dohi (CPR & iTHEMS, RIKEN)
- Eiji Kido (ICRR, U. Tokyo)
- Masakiyo Kitazawa (YITP, Kyoto U.)
- Tomoya Naito (iTHEMS, RIKEN/Dept. Phys., U. Tokyo; Co-Chair)
- Nobuya Nishimura (CNS, U. Tokyo/RIKEN/NAOJ; Co-Chair)
- Toru Tamagawa (CPR & Nishina Center, RIKEN)
- Hidetoshi Yamaguchi (CNS, U. Tokyo)

This workshop is hosted by

- Yukawa Institute for Theoretical Physics (YITP), Kyoto University

and sponsored by

- Center for Nuclear Study (CNS), The University of Tokyo,
- Foundation for Promotion of Astronomy,
- IReNA (International Research Network for Nuclear Astrophysics), and
- UKAKUREN.

Detailed Information and Contact

Please do not hesitate to contact us for any questions or requests.

- <https://indico.yukawa.kyoto-u.ac.jp/event/46/>
- xrb2025@ml.riken.jp

