

# The 12th international conference on hard and electromagnetic probes of high-energy nuclear collisions

I. Nakagawa\*<sup>1</sup> for the Local Organizing Committee

The 12th International Conference on Hard and Electromagnetic Probes of High-Energy Nuclear Collisions (Hard Probes 2024, HP2024)<sup>a)</sup> took place in Nagasaki, DEJIMA MESSE NAGASAKI, in Japan from 22nd September until 27th September 2024. The conference was sponsored by various institutes and countries as follows: University of Tsukuba, RIKEN,<sup>b)</sup> University of Tokyo, Nagasaki Institute of Applied Science, Sophia University, Akita International University, Hiroshima University, Nara Women's University, Tomonaga Center for the History of the Universe, University of Tsukuba (Japan), Brookhaven National Laboratory, Lawrence Berkeley National Laboratory, Lawrence Livermore National Laboratory (USA), Central China Normal University (China), CERN (Switzerland), and KoALICE (Korea). Itaru Nakagawa and Yasuyuki Akiba of Nishina Center were one of the local organisers, and member of the international advisory committee of the conference, respectively.

The conference was focused on experimental and theoretical developments on perturbative probes of hot and dense QCD matter as studied in high-energy nucleus–nucleus, proton–nucleus and proton–proton collisions. Specifically, the topics for discussion included:

- Jet modification and medium response
- High-momentum hadrons and correlations
- Heavy quarks and quarkonia
- Electromagnetic and electroweak probes
- Nuclear PDFs, saturation, and early time dynamics
- Future experimental facilities and new techniques

Prior to the conference there were dedicated lectures presented by senior experts for students for each topics of the conference listed above. Each lecture covered basics to the frontiers of the fields to help students gain knowledge that they need to catch up to the discussions during the conference. The main conference ran for 5 full days and was composed of 10 plenary and 32 parallel sessions. These sessions were fulfilled by 31 plenary plus 4 summary talks, and a total of 146 parallel talks. RIKEN made sizable contributions to these talks. One of the plenary talks was given by Prof. Takashi Hachiya (visiting researcher), two parallel talks were presented by Dr. Ralf Seidl (senior scientist) and Dr. Genki Nukazuka (special postdoctoral researcher), and a poster was presented by Cheng-Wei



Fig. 1. A photograph of all participants of the HP2024 conference, taken in the main hall of the conference venue.



Fig. 2. A photograph of the poster award winners. Cheng-Wei Shih, on the right of the poster, is one of the award winners.

Shih (international program associate). There were a total of 346 people who attended the conference, as shown in Fig. 1.

On the 2nd-day evening of the main conference, the poster session was held for two hours in the main venue. A total of 96 posters were presented and inspired vigorous discussions between presenters and audiences. During the session, each poster presentation was reviewed by multiple referees. Consequently, five young scientists were awarded for their excellent poster presentations, as shown in Fig. 2. Cheng-Wei Shih, on the right of the poster, is one of the award winners.

\*<sup>1</sup> RIKEN Nishina Center

<sup>a)</sup> <https://indico.cern.ch/event/1339555/>

<sup>b)</sup> This conference is a part of the RIKEN Symposium Series.