## The 8th Asia-Pacific Conference on Few-Body Problems in Physics (APFB2020)

E. Hiyama,<sup>\*1,\*2</sup> A. Tamii,<sup>\*3</sup> and S. Ishikawa<sup>4</sup>

The 72th Yamada Conference: The 8th Asia-Pacific Conference on Few-Body Problems in Physics (APFB2020) was held in Kanazawa, Japan on March 1–5, 2021. The purpose of the APFB conference is to encourage PhD students and young researchers in Asian countries to study few-body problems in various physics fields. The 1st APFB conference was held in Tokyo in 1999. Subsequently, we held the following APFB conferences: 2nd APFB, Shanghai, China in 2002; 3rd APFB, Nakhon Ratchasima, Thailand in 2005; 4th APFB, Depok, Indonesia in 2008; 5th APFB, Seoul, Korea in 2011; 6th APFB, Adelaide, Australia in 2014; and 7th APFB, Guilin, China in 2017. The 8th APFB was planned to be conducted in August 2020. However, because of the COVID-19 pandemic, we postponed it to March 1–5, 2021. As the pandemic situation continued well into 2021, we organized the conference in a hybrid format, that is, with participation both online and on-site. The venue for the on-site part of the conference was Bunka hall in Kanazawa, where one large room was prepared for the plenary session and two smaller rooms were prepared for parallel sessions. While maintaining social distancing, we prepared desks and chairs for 60 persons in the plenary-session room and for approximately 20 persons in the other rooms. Moreover, on-site participants were requested to wear masks during the conference, and the consumption of food and drinks was prohibited.

The following topics were covered in APFB2020: fewhadron systems and their interactions, hadron structure and quantum chromodynamics, structure of light nuclei and hypernuclei, relativistic aspects of few-body systems near stability and their interactions, symmetries and symmetry breaking, electroweak interactions



Fig. 1. Conference photograph from the on-site venue.



Fig. 2. Opening address at the on-site venue.

in few-hadron systems, atomic and molecular systems, exotic few-body systems and astrophysics, and methods in few-body systems

This hybrid conference had approximately 300 participants in total, of which 50 participants attended onsite and approximately 250 attended online. We had 160 domestic participants, about 80 participants from other Asian countries, 40 from Europe, and 15 from the U.S.A. All participants from abroad attended online. APFB2020 featured 36 plenary talks, 10 invited talks in parallel sessions, and 90 contributed talks. The most difficult tasks in the hybrid-style conference was to organize a scientific program and to solve network problems. We also needed to address the differences in time zone among Asian countries, Europe, and the U.S.A. Therefore, we split the plenary session into the morning (for the US time zone) and evening (for the European time zone). The parallel sessions were conducted late in the morning and in the early afternoon. In addition, we carefully prepared a reliable network connection, which was expensive. However, we were concerned about poor network connections from presenters. To avoid this difficulty, we asked them to provide recoded talks in advance. As expected, we had to use some of the recoded talks during the conference because of poor connections.

The next international Conference on few-body problems in physics will be held in Beijing, China in 2022. We hope that the conference will be conducted entirely on-site as it would be more efficient to conduct discussions on physics in that manner.

Finally, we would like to acknowledge RIKEN Nishina Center, RCNP, RIKEN iTHEMS, Kyushu University, and Tohoku University as co-host institutes and universities. Furthermore, the conference was hosted by the Yamada Science Foundation through a Grant-in-Aid for Scientific Research on Innovative Areas, titled "Clustering as windows on the hierarchical structure of quantum systems."

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

<sup>\*2</sup> Department of Physics, Tohoku University

<sup>\*&</sup>lt;sup>3</sup> RCNP, Osaka University

<sup>\*4</sup> Science Research Center, Hosei University