INTPART School 2023

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INTPART School 2023[1] was held from February 20 to March 3, 2023 at the Kafuu Resort Fuchaku CONDO HOTEL in Okinawa main island, Japan. The school was organized by the University of Oslo, the Research Center for Nuclear Physics (RCNP) of Osaka University, the Center for Nuclear Study (CNS) of University of Tokyo, and the RIKEN Nishina Center. The school was supported by the INTPART program of the Research Council of Norway. A total of 27 students and four postdoctroal researchers from Norway, South Africa and Japan attended the school.

The two-week school featured a series of lectures by four main lecturers on topics including giant resonances by M. N. Harakeh (University of Groningen), the basics of nuclear shell model by Y. Utsuno (JAEA/CNS), new aspects of nuclear structure by T. Otsuka (RIKEN/CNS), and physics of radioactive isotopes by D. Suzuki (RIKEN), along with several other topical lectures comprising introduction (A. Görgen), ultra-high energy cosmic rays (D. Allard), photo-nuclear reactions (L. Pellegri, P.-A. Söderström), evolution of magic numbers (E. Sahin), and the culture and history of Okinawa (K. Teruya).

After taking lectures in the morning sessions, the students conducted hands-on practices in the afternoon sessions. There were two subjects: one related to nuclear theory in the first week and the other to experiments with radioactive isotope (RI) beams in the second week. The former was to practice shell model calculations using the KSHELL code,[2] which is one of the most frequently used open-source codes of the nuclear structure today. The latter was to analyze experimental data of RI beams to learn about the method of particle identification with in-flight projectile fragment separators. Experimental data[3] obtained with the BigRIPS separator of the RI Beam Factory were used for this practice.

Oral presentations by students were also organized in the afternoon sessions. In the presentations, each student spoke about their research activities and received feedback. After each presentation, the students in the audience had a closed session to discuss the quality of the presentation, its good points and possible improvements. A summary of the closed session was orally communicated by a representative among the audiences to the speaker.

The participants also enjoyed other activities outside of the class room, such as an excursion in Okinawa, a tour to Okinawa Institute of Science and Technology (OIST), and social dinners.

Fig. 1. Photograph of the lecture hall of the school.

Fig. 2. Photograph during a hands-on practice session.

Overall, the school was successfully contributed to the education of students and early-carrier researchers in various aspects including basics and recent updates of nuclear physics, practices and presentations, or international communications.

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References

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