

Research Result Report ICRR Inter-University Research Program 2023

Research Subject:

Kashiwa Dark Matter Symposium 2023

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Summary of Research Result :

The 5th Kashiwa Dark Matter Symposium took place from December 5th to 8th, 2023. The symposium was conducted as a hybrid format with the onsite part taking place at the Kashiwa Library Media Hall at University of Tokyo, Kashiwa Campus. The symposium lasted over two full days (Wednesday and Thursday) and two half days (Tuesday and Friday). No symposium fee was charged for online participants, and small fee over 2,000 Japanese Yen for onsite participants.



*Figure 1:
Group picture*

Central access point of the symposium was the webpage <https://2023.kashiwa-darkmatter-symposia.org/> with program and registration. The talks and oral discussions were held both onsite and Zoom, and the coffee breaks and poster sessions

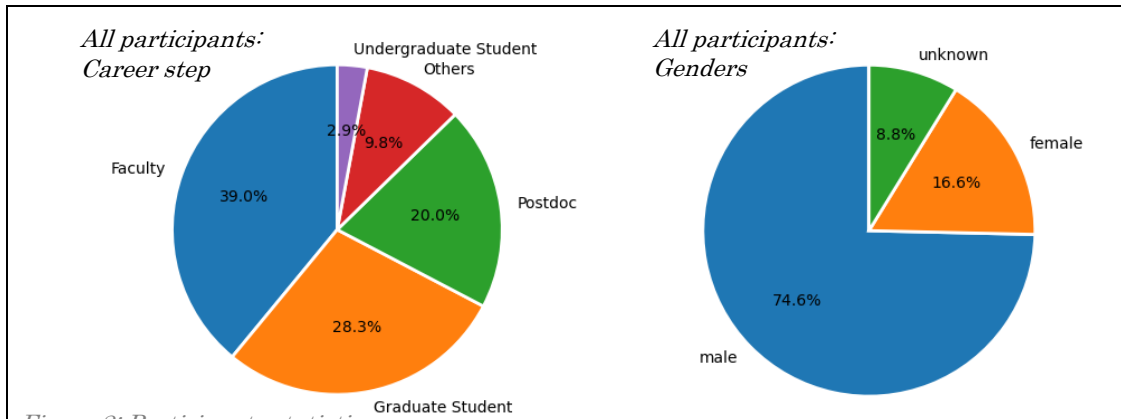


Figure 2: Participants statistic

using the “Gather” tool (<https://www.gather.town/>). In order all participants to watch the talks after the symposium, we recorded most of the oral talks and uploaded them on YouTube (but unpublic). As in 2022, the symposium was received highly positive. 209 people registered from 20 countries worldwide. 2.9% of all registrations were undergraduate students, 28% graduate students, 20% Postdocs, and 39% faculty staff (rest “others”, see Fig.2). 16.6% of all registrants were female. About 60 people participated on-site, while about 150 online participants had formally registered. In more details, there were 30-40 in-person and 40 online participants in each day. As in 2022, we invited 15 distinguished highlight speakers. We allocated 24 contributed talks of 10 minutes length each. In addition, we had 16 poster presentations (in total we received 40 contributed talk or poster submissions).

The program included recent updates from the dark matter searches in the different fields. Special focus was drawn to search for “Quantum sensors and astrophysical probes of dark matter”, including theoretical aspects and recent developments of detector technologies. In the Indirect Detection session, the current and future studies by CTA were reviewed. In the Direct Detection session, the latest results from the international collaborations were discussed. In the Collider session, updated measurements with the LHC were presented. In the Astrophysics and Cosmology session, we discussed the upcoming Subaru-PFS cosmology survey, recent results from pulsar timing array and gravitational lensing for constraining ultra-light dark matter models. In the theory session, we focused on ultra-light dark matter and primordial black holes and their constraints.