

SPIN2021 international spin symposium

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The 24th International Symposium on Spin Physics (SPIN2021) was held at the Kunibiki Messe Convention Center in Matsue, Shimane Prefecture, Japan in October 18–22, 2021. We aimed to cover a wide range of topics related to particle and nuclear spin physics from low energy to high energy, including experimental, theoretical, computational and technological aspects and applications.

This symposium was originally scheduled to be held in 2020 as SPIN 2020; however, it was postponed because of the COVID-19 pandemic. This symposium series has been held jointly since 2000, combining the High Energy Spin Symposia and Nuclear Polarization Conferences. The most recent symposia took place in Dubna, Russia (2012); Beijing, China (2014); Urbana Champaign, USA (2016); and Ferrara, Italy (2018).

The symposium was held in a hybrid style, *i.e.*, in-person and online participation were possible. As a result, in-person on-site participation was limited to the symposium organizers, which was 20 people, while online participation included about 160 presenters and 150 audience participants. The total number of participants was about 330, which is a larger number for this symposium series.

The hybrid style was useful to invigorate our scientific discussions under the present situation of the pandemic. We had successfully tested the hybrid style with a domestic workshop on spin physics.¹⁾ In the hybrid style of the SPIN2021 symposium, the structure of the plenary and parallel sessions was set up to be convenient for online participants residing outside Asia. In the first two days, the symposium started at 3 p.m. to facilitate online participation from Europe, and in the last two days, it started at 7 a.m. to facilitate online participation from the United States.

The scientific program of SPIN 2021 included topics related to spin phenomena in particle and nuclear physics and related fields. The following symposium topics were covered:

- Nucleon helicity structure
- 3D structure of the nucleon: transverse-momentum dependent distribution
- 3D structure of the nucleon: general parton distribution
- Fundamental symmetries and spin physics beyond the Standard Model
- Spin physics in nuclear reactions and nuclei
- Low energy spin physics with lepton, proton and hadron probes
- Future facilities and experiments
- Acceleration, storage and polarimetry of polarized



Fig. 1. Online participants of the SPIN2021 symposium.

beams

- Polarized ion and lepton sources and targets
- Applications of nuclear polarization techniques to other fields

The symposium format comprised discussions in plenary and parallel sessions. The plenary session began with a discussion on the recent major topic of muon $g-2$ measurements, and two more special discussions on spintronics and polarization measurements of the cosmic microwave background took place. In total, 29 plenary talks were given. Parallel sessions were held for the aforementioned listed topics, with up to five sessions running in parallel. Few sessions were conducted as joint sessions for multiple topics.

The symposium is hosted by RIKEN Nishina Center and co-hosted by KEK, J-PARC, RCNP Osaka University, CNS University of Tokyo, and Yamagata University. Moreover, it is supported by RIKEN as a part of the RIKEN Symposium Series, and subsidy system for international conferences in Matsue and Shimane Prefecture.

A screenshot of online participants (not all the participants) is shown in Fig. 1. The full program and presentation slides presented in the symposium are available at the symposium website (<https://indico2.riken.jp/event/3082/>), and the proceedings of the SPIN2021 symposium will be published in the JPS Conference Proceedings.

Reference

- 1) Y. Goto, RIKEN Accel. Prog. Rep. **54**, 197 (2021).

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