

Third international workshop on the extension project for the J-PARC hadron experimental facility (3rd J-PARC HEF-ex WS)

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The Third International Workshop on the Extension Project for the J-PARC Hadron Experimental Facility (3rd J-PARC HEF-ex WS) was held on March 14–16, 2023. The workshop was organized by Hadron Hall Users' Association (HUA) and supported by J-PARC Center, KEK Theory Center, RCNP, and RIKEN.

We have extensively discussed the facility extension project with the nuclear and high-energy physics communities worldwide, through several HEF-ex workshops, to refine and facilitate the project; their outputs were summarized as a third white paper.¹⁾ The project was finally selected as a top-priority project to be budgeted in the KEK mid-term plan (FY2022-26) in KEK-PIP2022 (Project Implementation Plan) and is about to be realized. Detailed information on the extension project can be found on HUA's home page.²⁾

In the third workshop, discussions were continuously devoted to the physics case that connected both the “present” and the “future” Hadron Experimental Facility at J-PARC. To this end, this workshop covered a wide range of topics in flavor, hadron, and nuclear physics related to both experimental and theoretical activities being conducted at the facility as follows:

- $S = -1$ and -2 hypernuclei
- baryon-baryon and meson-baryon interactions
- meson in nuclei
- baryon spectroscopy
- kaon rare decays
- μ -e conversion
- future facilities and instrumentation

The workshop was held at J-PARC with hybrid format. The workshop included 188 participants from 16 countries, 81 institutes (59 participants from abroad), approximately 60 of whom were on-site participants (approximately 10 participants from abroad). The scientific program comprised plenary sessions by invited speakers and parallel sessions by invited and contributed speakers. There were 14 plenary and 69 parallel talks. Sessions were conducted from 10:30 to 19:00 Japan time

on all three days, with lunch breaks as reported in Table 1. The entire program and presentation files are available online at the workshop website.³⁾ On-site and online group photographs are shown in Fig. 1.

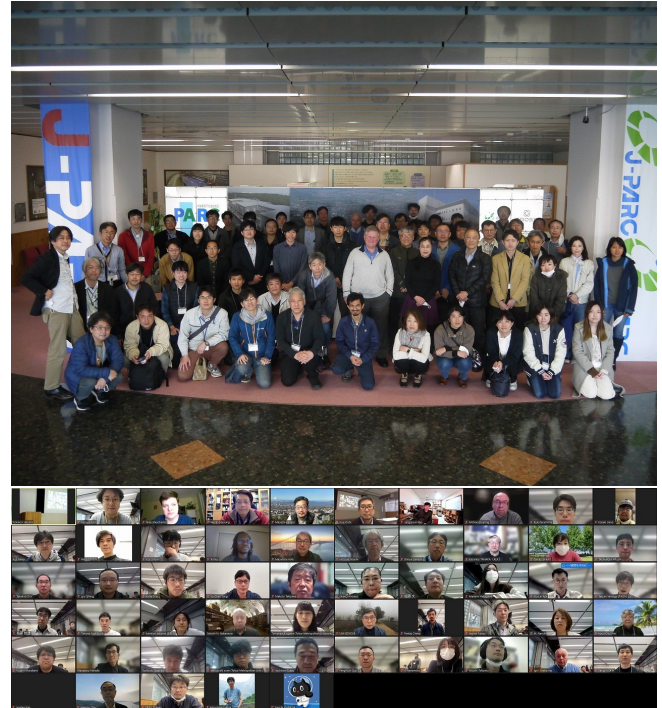


Fig. 1. On-site and online group photographs.

Following the success of the workshops, we conducted the fourth workshop on February 19–21, 2024 to continuously discuss physics at the J-PARC Hadron Experimental Facility and its extension.

References

- 1) Taskforce on the extension of the Hadron Experimental Facility, arXiv:2110.04462.
- 2) <http://www.rcnp.osaka-u.ac.jp/~jparchua/en/index.html>.
- 3) <https://kds.kek.jp/event/44086/> (Access key is necessary.).

Table 1. Timetable of the workshop.

	Mar.14 (Tue)	Mar.15 (Wed)	Mar.16 (Thu)
Morning Session [10:30 – 12:00 (JST)]	Plenary 1 [welcome, facility]	Plenary 3 [flavor]	Parallel 3
Afternoon Session [13:30 – 17:00 (JST)]	Parallel 1	Parallel 2	Parallel 4
Evening Session [17:30 – 19:00 (JST)]	Plenary 2 [strangeness]	Plenary 4 [hadron, strangeness]	Plenary 5 [hadron, future, closing]

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