

Measurements of vector meson mass spectra in pA collisions at J-PARC

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Study of a chiral symmetry in QCD attract wide interests to study the QCD phase diagram. It is theoretically predicted that the chiral symmetry is partially restored at a finite density matter and it can be observed as modifications of vector meson mass spectra. An experiment is being performed at J-PARC to measure mass modifications of vector mesons in a nucleus, which can be considered as a finite baryon density matter. The experiment measures electron-positron decays of vector mesons.

The previous experiment which was performed at KEK-PS shows significant mass modifications in nuclei and the new experiment aims to collect 50 times larger statistics than that of the KEK-PS experiment.

The experiment started constructions of the spectrometer in 2019 and performed acquisitions of pilot-data in 2020 and 2021. In this contribution, the status of the experiment and the performance of the spectrometer will be reported.

Theory / experiment

Experiment

Group or collaboration name

J-PARC E16 collaboration

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