

Experimental study of in-medium spectral change of vector mesons in nuclear medium at J-PARC

Spontaneous breaking of the chiral symmetry plays a major role in generation of the hadron mass. It is predicted that the broken symmetry is partially restored even at normal nuclear density, and results in a measurable difference in hadron mass.

J-PARC E16 has been proposed to measure such a change of vector mesons in nuclear medium at J-PARC Hadron Experimental Facility. It will measure dilepton decay of ρ , ω and ϕ in 30 GeV pA reactions.

We've executed three commissioning runs in 2020 and 2021, and we are preparing for one planned in 2023 with upgraded accelerator and detectors. The first physics run is anticipated in 2024.

In this talk we present the achievement and findings of the commissioning runs and prospects of the experiment.

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Track Classification: Hadrons at finite density and temperature