Contribution ID: **858** Type: **Parallel session talk**

KOTO II at J-PARC to measure the branching ratio of $K_L \to \pi^0\nu\overline{\nu}$

Thursday 18 July 2024 09:15 (15 minutes)

The KOTO II is a next-generation experiment to measure the branching ratio of $K_L \to \pi^0\nu\overline{\nu}$ with 30-GeV proton beam at J-PARC. The KOTO II is a successor of the currently running KOTO experiment. We plan to expand the hadron experimental facility at J-PARC, and construct a new beamline of KOTO II there. The extraction angle of the K_L is 5 degrees, which is smaller than that in KOTO to have more K_L with higher momentum spectrum. The KOTO-II detector is being designed with a 12-m signal decay region and a 3-m diameter calorimeter to have more signal acceptance. The expected numbers of signal and background events are 35 and 40, respectively, where the Standard Model value of branching ratio and 3×10^7-s running time are assumed. The signal can be observed with 5.6σ significance. The design, current developments, and the expected sensitivity of KOTO II will be reported.

Alternate track

1. Detectors for Future Facilities, R&D, Novel Techniques

I read the instructions above

Yes

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Session Classification: Quark and Lepton Flavour Physics

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