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First analysis result of the KDAR neutrino search with JSNS2 experiment

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Kaon Decay-At-Rest (KDAR) provides a neutrino signal with well-known neutrino energy, which is an important probe for measuring the neutrino cross-section in an energy range that is otherwise difficult to access experimentally. The J-PARC Sterile Neutrino Search at the J-PARC Spallation Neutron Source (JSNS2) experiment is in a unique place for measuring monoenergetic neutrinos at 236 MeV from charged Kaon decay-at-rest (KDAR). JSNS2 is located at the J-PARC's Material and Life Science Facility (MLF) where the world's most intense source of KDAR created by a 3 GeV proton beam incident on a liquid mercury target. In this presentation, We will present the first result of the search for the KDAR neutrinos conducted with the JSNS2 experiment with the data during the JSNS2's first long-term physics run during 2021, consisting of more than 115 days of data and 1.45x10ˆ22 POT.

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