

Abstract Submitted
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First Measurement of Monoenergetic Muon Neutrino Charged Current Interactions RORY FITZPATRICK, University of Michigan - Ann Arbor, MINIBOONE COLLABORATION — The NuMI beam absorber provides an intense source of 236 MeV muon neutrino events originating from kaon decay at rest ($K^+ \rightarrow \mu^+ \nu_\mu$) that can be observed by the MiniBooNE detector, 86 meters away. The kaon decay at rest (KDAR) neutrino acts as a standard candle for studying neutrino-nucleus interactions, cross sections, and energy reconstruction in the 100s of MeV region and can be used for a number of precision measurements. The KDAR signal at MiniBooNE, observed with 3.9σ significance, is distinguished from ν_μ and $\bar{\nu}_\mu$ backgrounds using arrival time and reconstructed muon energy. I present the first measurement of neutrino-nucleus energy transfer ($\omega = E_\nu - E_\mu$) using neutrinos and prospects for future measurements.

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