

Abstract Submitted
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Measuring Neutron Spectrum at MIT Research Reactor Utilizing He-3 Bonner Cylinder Approach with an Unfolding Analysis ALEXANDER LEDER, Massachusetts Inst of Tech-MIT, RICOCHET COLLABORATION — The Ricochet experiment seeks to measure Coherent (neutral-current) Elastic Neutrino-Nucleus Scattering (CENNS) using dark matter style detectors placed near a neutrino source, possibly the MIT research reactor (MITR), which offers a high continuous neutrino flux at high energies. Currently, Ricochet is characterizing the backgrounds at MITR. The main background is the neutrons emitted simultaneously from the core. To characterize this background, we wrapped a Bonner cylinder around a ^3He thermal neutron detector, whose data was then unfolded to produce a neutron energy spectrum across several orders of magnitude. We discuss the resulting spectrum as well its implications for deploying Ricochet in the future.

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