Abstract Submitted
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Searching for Dark Matter with the CoGeNT and C-4 Detectors

MARK KOS, PNNL — Recently published CoGeNT data shows an excess of events at energies below 1.2 keV. The excess at low energies is compatible with light-WIMP nucleon scattering. While it is hard to imagine a background model to explain the spectral and temporal characteristics of the CoGeNT data, a thorough simulation of the external backgrounds is needed to quantify their contribution. In this analysis we simulate both external cavern neutrons and muon induced spallation events inside the CoGeNT shielding. We also model radioactive backgrounds from the shielding materials. The resulting background distributions are compared with the CoGeNT data and we discuss how closely the backgrounds resemble the CoGeNT data. We also discuss plans for the next larger generation of CoGeNT, C4. We will discuss the expected WIMP sensitivity of C4 and contrast to current dark matter experiments. We will also show how we plan to improve upon the CoGeNT design to lower the backgrounds for C4.

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