

Abstract Submitted
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Photon Events at MiniBooNE Experiment XILIN ZHANG, BRIAN D. SEROT, Indiana University-Bloomington — The neutral-current production of photon at MiniBooNE experiment is analyzed, which is motivated by the low-energy excess-event puzzle in the experiment [A. A. Aquilar-Arevalo et al. (MiniBooNE Collaboration), Phys. Rev. Lett. 100, 032301 (2008); Phys. Rev. Lett. 105, 181801 (2010)]. The calculation is done in a manifestly Lorentz-covariant framework, and includes contributions from Delta resonance's radiative decay and from non-resonance diagrams. The medium-effects are considered, including the modifications of Delta's behavior and nucleon's spectrum and Pauli blocking. Different kinds of event distributions are calculated based on the experimental setup. The possibility of the photon event to be the excess event will be discussed. The model-dependence of the results will also be presented. Possible connections of this analysis to other neutrino-oscillation experiment will be mentioned.

Xilin Zhang
Indiana University-Bloomington

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