

MicroBooNE's Search for a Photon-Like Low Energy Excess

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MicroBooNE is a Liquid Argon Time Projection Chamber detector that has been taking data since 2015. One of its primary goals is to investigate the unexplained excess of electromagnetic events in the lowest energy ranges observed in the same neutrino beamline in the MiniBooNE experiment. While one leading interpretation of this anomaly is electron neutrino appearance due to sterile neutrino oscillations, a viable Standard Model explanation is neutrino-induced single photon events. The MicroBooNE single photon analysis looks to test this interpretation by measuring the rate of neutrino-induced resonant neutral current (NC) delta baryon production and subsequent delta radiative decay with a single photon in the final state, $NC \Delta \rightarrow N\gamma$. This search for a process that has never been observed before in neutrino scattering is projected to improve upon the current experimental limit from T2K by greater than a factor of thirty. This talk will present the status of the MicroBooNE single photon analysis and the outlook for subsequent measurements.

Working group

WG1

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