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Magnet induced background to a neutrino events sample in the T2K near detector OLEG PEREVOZCHIKOV, Louisiana State University, T2K COLLABORATION — The T2K experiment is an off-axis long baseline neutrino oscillation experiment primarily constructed to search for conversion of muon neutrinos to electron neutrinos thereby measuring the last unknown mixing angle θ_{13} . For this purpose high intensity beam of muon neutrinos is produced at the JPARC and sent 295 kilometers across Japan towards the Super-Kamiokande detector. The neutrino energy spectrum, flavor content and interaction rates of the unoscillated neutrino beam are measured by T2K off-axis near detector (ND280) components that are contained inside the dipole magnet. Such measurements are required to minimize systematic uncertainties in neutrino oscillation analysis. In this presentation I will overview the T2K experiment and emphasize on the analysis of the background coming from the magnet for muon neutrino charged current (CC) interactions. Based on simulated neutrino interactions inside ND280 detector the contribution of magnet induced events was estimated. To verify the agreement between data and Monte Carlo and to confirm the reliability of predicted magnet induced background the analysis of CC neutrino interactions in the Side Muon Range Detector was performed and will be discussed during the presentation.

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