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Incorporating Multi-Nucleon Effects in T2K's Neutrino Interaction Simulation Software. JACLYN SCHWEHR, Colorado State University — The interaction of neutrinos with heavy nuclei is a field of study that has grown rapidly as more experiments are built with heavier targets. Neutrinos interacting with these targets are thought to interact with not just single nucleons, but also with correlated groups of nucleons. A number of different theories exist that describe these multi-nucleon interactions, but to be able to compare these theories with one another or to data requires a way to work them into the neutrino interaction simulation software. The T2K experiment uses NEUT (the neutrino interaction simulation program at Super-K) in the study of neutrino cross sections. In the interest of simulating neutrino interactions more accurately, new interaction models need to be incorporated into this simulation package. This talk will discuss the discrepancies between measurements done with neutrinos interacting on light verses heavy nuclei, a few of the models describing these discrepancies, and finally how these models are being incorporated into NEUT.?

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