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Neutrinos in Gas at T2K

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Cross-section measurements are extremely important for reducing systematic uncertainties in neutrino oscillation experiments, but are limited by our understanding of effects inside the target nucleus. Measuring neutrino interactions in gaseous detector allows the models used to simulate these effects to be empirically tested, thanks to the high spatial resolution of the detector and the relatively long range of even low-energy particles originating from the vertex (e.g. protons with a kinetic energy of 0.5 MeV).

This talk will give a brief overview of the project of measuring these interactions in the ND280 time projection chambers, before focusing on my work in developing a veto to reject entering backgrounds. It will then cover the future prospects for this work, which aims to make a world first measurement of neutrino interactions on gaseous argon.

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