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## Reducing neutrino cross-section uncertainties with the NuPRISM experiment

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NuPRISM is a proposed 1 kton water Cherenkov detector in the J-PARC neutrino beam, placed at a distance of around 1 km from the neutrino production point. The detector configuration allows for vertical movement over around 50 meters resulting in a wide span of angles with respect to the beam direction. Data taken at different off-axis angles is sampled from neutrino fluxes peaking at different energies, linear combinations of which can be used to predict the lepton kinematics for an oscillated neutrino flux at Super-Kamiokande with a significantly reduced dependence on neutrino cross-section models. Such measurements will allow for precision measurements of neutrino oscillation parameters with the T2K experiment and future long-baseline neutrino experiments.

Among the R&D activities for the project, a multi-PMT configuration has the detector populated with modules comprising several 3" PMTs, equipped with reflectors, and integrated electronics.

An initial phase of the experiment consists of a surface detector at the J-PARC site, in an extreme off-axis configuration. This phase will demonstrate the stringent requirements on the control detector systematic uncertainties, and will produce a precise measurement of the electron neutrino cross-section on water.

An overview of the project will be presented, as well as an update on detector optimization studies currently underway.

**Primary author:** Dr VILELA, Cristovao (Stony Brook University)

**Presenter:** Dr VILELA, Cristovao (Stony Brook University)

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