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Physics Goals of the IsoDAR Electron Antineutrino Experiment

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The Isotope Decay-At-Rest (IsoDAR) experiment is a compact accelerator-based source for anti-electron neutrinos produced through Lithium-8 decay. Paired with a kiloton scale detector, IsoDAR will be able to precisely measure neutrino oscillations over an L/E of approximately 0.6-7.0 m/MeV. IsoDAR will be able to decisively test the current global allowed region for the sterile neutrino hypothesis as well as distinguish between a 3+1 and 3+2 model. IsoDAR will also collect the world's largest sample of low energy electron-antineutrino on electron scattering events that can be used to make precision electroweak measurements and new physics searches. This talk will discuss the physics goals of the experiment as well as other beyond Standard Model precision measurements that can be performed. There will also be a brief review of the technical developments for the beam and neutrino source that are going on to enable this measurement.

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