

IsoDAR – A decisive 3+1 sterile neutrino search.

Authorship annotation

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Session and Location

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Abstract content

The Isotope Decay-At-Rest (IsoDAR) experiment is designed to provide a unique search for short baseline electron flavor anti-neutrino oscillations. In essence, it is a novel high-intensity cyclotron based neutrino factory that will be able to precisely measure neutrino oscillations over an L/E of approximately 0.6-7.0 m/MeV. When paired with a kiloton scale detector, IsoDAR can decisively test the current global allowed regions for a 3+1 sterile neutrino hypothesis, test a 3+2 hypothesis, and collect the worlds largest sample of a low energy electron flavor anti-neutrino elastic scattering events. IsoDAR expands on several key technologies to make this measurement possible. These include the development of a high-current H²⁺ ion source, an axial-injection scheme into a cyclotron using a radio-frequency quadrupole, and a high-power beryllium target. This poster elaborates on the physics goals of IsoDAR and gives an overview of the current R&D projects.

Poster included in proceedings:

yes

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