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Status of the Project 8 Detector Prototype JARED KOFRON, University of Washington, THE PROJECT 8 COLLABORATION — The average mass of the 3 neutrino mass eigenstates has been bound by oscillation experiments and by direct mass measurements to lie in the range 0.02 eV $\leq m_\nu \leq$ 2 eV. Nonetheless, only the upper decade of this parameter space will be accessible to the most sensitive experiment presently under construction, KATRIN. The Project 8 collaboration has been involved in the development of technology in the form of a prototype detector which may offer sensitivity to neutrino masses over the entire allowed parameter space. The key to this technology is a direct, non-integrated measurement of the energy spectrum of β decay electrons very near the endpoint of ^{3}H decay by probing the cyclotron frequency of those electrons as they move in a strong background magnetic field. The current generation of the prototype detector is expected to reach 1 ppm resolution of the cyclotron frequency of the electron. Recent progress and results from the detector prototype will be discussed. This research is supported by DOE under grant DE-FG02-97ER41020.

Jared Kofron
University of Washington

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