

Direct Neutrino Mass Searches Covering the Inverted Ordering Scale

Friday 14 April 2023 11:00 (30 minutes)

State-of-the-art direct neutrino mass searches have recently achieved sensitivity below 1 eV. The KATRIN experiment will run through 2025 projecting sensitivity to reach down to m_β of 200 meV. But KATRIN's MAC-E filter technology and molecular tritium source are reaching their limitations in this experimental phase. Sensitivity to cover the inverted neutrino mass ordering and beyond requires new experimental techniques and considerable R&D. In this talk, I will outline the programs being pursued for next-generation neutrino mass sensitivity over the coming LRP period and the R&D challenges ahead. I will particularly highlight recent advances by Project 8 employing the Cyclotron Radiation Emission Spectroscopy (CRES) technique, charting its phased program towards an experiment sensitive down to m_β of 40 meV.

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