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Probing Majorana Neutrinos and Dark Matter at MeV-scale with PandaX

Sunday, 19 April 2026 16:30 (25 minutes)

Liquid xenon experiments have advanced dark matter direct detection. While traditionally focused on keV-scale signals, the MeV region also offers rich information for studying neutrinos and dark matter. The PandaX-4T experiment at the China Jinping Underground laboratory uses 3.7 tons of natural xenon. We have developed a dedicated data analysis framework extending its energy range to the MeV scale, systematically characterized the detector response and background model, and searched for neutrinoless double beta decay, axion-like particles/dark photons, and more. This talk will highlight these achievements.

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Session Classification: Parallel Dark Matter & Neutrinos (Room 368, chair Pei-Zhi Du)