

LXe calorimeter for the PIONEER Experiment

Saturday, 25 May 2024 16:30 (30 minutes)

PIONEER aims to measure the charged-pion branching ratio to electrons versus muons (R) with about 15 times better precision in its first phase and the pion beta decay, $\pi^+ \rightarrow e^+ \nu_e + \gamma$, with 3 to 10-fold improvement in sensitivity in the next step. The PIONEER detector is designed to measure these reactions with great precision by employing a 5D active target and a high-resolution calorimeter. One of the calorimeter designs is based on liquid xenon technology with scintillation light readout. We present the PIONEER LXe calorimeter R&D status as well as its design.

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Session Classification: Leptons and Neutrinos