

An overview of the upcoming MOLLER experiment at Jefferson Lab

The upcoming MOLLER (Measurement Of Lepton Lepton Electroweak Reaction) experiment at Jefferson Lab aims to measure parity violation in fixed-target electron-electron scattering with unprecedented precision and significantly extend the reach for new dynamics beyond the Standard Model in the electroweak sector. Using the high-intensity, high-precision 11 GeV electron beam at Jefferson Lab, MOLLER proposes to measure the parity-violating asymmetry in the scattering of longitudinally polarized electrons off unpolarized electrons to an overall fractional accuracy as high as 2.4%. Fabrication of the novel spectrometer and detector systems is already well underway, and the experiment is targeting its first physics run in early 2027. This talk will provide a brief overview of the experimental goals as well as experimental techniques and key features of detector subsystems that are critical to achieving the stringent accuracy requirements of the MOLLER experiment.

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