

Abstract Submitted
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Time of flight and the MUSE experiment in the PIM1 Channel at the Paul Scherrer Institute¹ WAN LIN, Rutgers, the State University of New Jersey, MUSE COLLABORATION² — The MUSE experiment in the PIM1 Channel at the Paul Scherrer Institute in Villigen, Switzerland, measures scattering of electrons and muons from a liquid hydrogen target. The intent of the experiment is to deduce from the scattering probabilities whether the radius of the proton is the same when determined from the scattering of the two different particle types. An important technique for the experiment is precise timing measurements, using high precision scintillators and a beam Cherenkov counter. We will describe the motivations for the precise timing measurement. We will present results for the timing measurements from prototype experimental detectors. We will also present results from a simulation program, Geant4, that was used to calculate energy loss corrections to the time of flight determined between the beam Cherenkov counter and the scintillator.

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