

Abstract Submitted  
for the APR21 Meeting of  
The American Physical Society

**The Liquid Hydrogen Target for MUSE<sup>1</sup>** HALEY REID, University of Michigan, Ann Arbor, MUSE COLLABORATION — The Muon Scattering Experiment (MUSE) at the Paul Scherrer Institute aims to measure the elastic scattering of muons and electrons from a liquid hydrogen target in order to work towards resolving the proton radius puzzle. MUSE will perform the scattering of both lepton families simultaneously, and both charge variants sequentially, determining the scattering cross section in each case with high precision. To accomplish this goal, MUSE employs a vertically movable target with five different target positions relative to the proton beam. The main target is a cylindrical Kapton cell with copper end caps that holds 280 mL of liquid hydrogen. In this presentation, we discuss the technical design, implementation, and performance of the target system and its support infrastructure, presenting data to demonstrate the successful operation of the LH<sub>2</sub> target. Additionally, we remark on the recent improvement efforts for the target system.

<sup>1</sup>This material is based upon work partially supported by the National Science Foundation under Grant 1807338. The MUSE experiment is supported by the Department of Energy, National Science Foundation, Paul Scherrer Institut, and the US-Israel Binational Science Foundation.

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Date submitted: 08 Jan 2021

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