

Abstract Submitted  
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**GEM data analysis for the MUSE experiment at PSI<sup>1</sup>** SAHARA  
JESMIN NAZEER, Hampton Univ, MUSE COLLABORATION — The Muon Scattering Experiment at the PiM1 beam line of the Paul-Scherrer Institute (PSI) will contribute to the resolution of the proton radius puzzle by measuring the proton charge radius with simultaneous electron and muon scattering. Both positive and negative beam polarities will be used. Precise measurements of the elastic differential cross sections require accurate determinations of the scattering angle. The secondary PiM1 beam has a large divergence, which necessitates measuring both the incoming and outgoing trajectories of scattered particles. High resolution Gas Electron Multiplier (GEM) detectors are used to determine the incoming beam particle trajectory. I will discuss recent improvements in pedestal and noise subtraction, hot/dead channel masking, suppression of cross talk of electronics and subsequently improved cluster finding and tracking efficiency of the GEM detector telescope.

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Sahara Jesmin Nazeer  
Hampton Univ

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