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Efficiency study of GEM detectors for MUSE[1] JESMIN NAZEER, ANGEL CHRISTOPHER, TANVI PATEL, MICHAEL KOHL, Hampton Univ, MUSE COLLABORATION — The Muon Scattering Experiment(MUSE) 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 how recent improvements on hot/dead channel masking, and suppression of cross talk of electronics will improve the tracking efficiency of the GEM detector telescope.

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