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Improvements in Fiber Harp Signal Integrity in the Muon g-2 Experiment[1] JADE MEURER, FREDERICK GRAY, Regis University, MUON G-2 COLLABORATION — The Muon g-2 experiment at Fermi National Accelerator Laboratory will test fundamental symmetries of the Standard Model by measuring the anomalous magnetic moment of the muon with improved precision. We measure motion of the beam profile through a system of "fiber harps," consisting of scintillating fibers and Silicon Photomultipliers (SiPMs). Signals from previous versions of the SiPM amplifier circuits show long time constants in the recovery to the baseline voltage, resulting in a need for precise baseline corrections and/or new electronics. We attempt to improve the analysis of previous data by applying mathematical deconvolution methods. We also develop new DC coupled amplifiers to fix the baseline shift introduced by AC coupling for future data collection. This poster will present the success of these methods and future improvements.

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