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Upstream Collimation in the M4 Line: Optimization, Extinction, and Mu2e Calibration

Monday, 8 May 2023 16:30 (2 hours)

Located between the Delivery Ring and the Mu2e experiment in the Muon campus, the M4 beamline serves as the transport line for a resonantly extracted, 8kW, 8GeV pulsed proton beam to the Mu2e production target. In addition to challenges posed by elevation and directional changes, the M4 line is tasked with removing beam halo from resonant extraction and ensuring adequate inter-pulse beam extinction. A brief overview of the M4 line will be presented alongside on-going work to optimize halo collimation and minimize the radiological effects while maintaining adequate beam extinction downstream. An additional topic of the transport of the beam halo to the production target as a low-intensity beam for Mu2e calibration is also presented.

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Footnotes

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Yes

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