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Beam Line Extinction in the Mu2e Experiment

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The Mu2e Experiment will search for the conversion of a muon to an electron in the field of a nucleus with four orders of magnitude greater sensitivity than the previous best search. The experiment requires a beam consisting of short (~200 ns FWHM) proton bunches, separated by 1.7 microseconds, with no out of time beam at a fractional level of $1e-10$ or lower. This last requirement is referred to as “extinction”. This talk describes the production of the required beam, including extinction, as well as the technique for verifying that the required level of extinction has been achieved.

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