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Extinction monitor for the Mu2e experiment

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The Mu2e experiment at Fermi National Accelerator Laboratory will study charged lepton flavor violation (CLFV) through the measurement of the ratio of the rate of neutrinoless, coherent conversion of muons into electrons in the field of a nucleus to the rate of muon capture on the nucleus. The goal of the experiment is to achieve a single event sensitivity of 2.8×10^(-17), leading to an upper limit on the muon conversion rate of 6.7×10^(-17). Muons will be generated by using a pulsed proton beam on a tungstun target. To achieve and maintain this level of sensitivity out-of-time protons must be suppressed at the 10^-10 level. Extinction is the ratio of out-of-time protons to in-time protons. We will present on the experimental design of the extinction monitor system and the current status of the project.

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