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Future Charged lepton flavor violation muon program

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Flavor physics holds great potential to investigate fundamental aspects of the standard model such as mass hierarchy, electro weak symmetry breaking and more. Within this physics frontier, charged lepton flavor violation (CLFV) is a phenomenon that is highly suppressed in the standard model and an excellent probe of new physics. Current generation CLFV experiments like Mu2e, COMET, MEG and Mu3e are gearing up for data taking within the decade. The “Advanced Muon Facility” has been recently proposed to take full advantage of the PIP-II beamline at Fermilab to produce the world’s most intense positive and negative muon beams. This complex would enable a broad muon physics program, including studies of charged lepton flavor violation and muonium-antimuonium transitions. This talk will describe the proposed facility, the associated physics program, and the main R&D challenges.

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