

The Proposed Advanced Muon Facility (AMF) at Fermilab

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Charged lepton flavor violation (CLFV) is expected in a diverse set of new physics scenarios. The current generation of experiments in the muon sector probe CLFV in three complementary channels: muon to electron conversion (Mu2e, COMET), muon to electron and gamma (MEG-II), and muon to three electrons (Mu3e). These experiments aim to enhance existing limits by several orders of magnitude and also offer discovery potential to many new physics scenarios. The proposed Advanced Muon Facility (AMF) at Fermilab will be a multi-purpose muon facility and introduces an innovative approach based on a muon storage ring to enable a full suite of muon CLFV experiments. AMF would provide additional enhancements on the upper limits or additional measurements of CLFV signals, depending on whether CLFV is observed in the current era of experiments. The design and R&D for AMF is in its infancy. This talk will outline the motivations for AMF, detail on-going R&D efforts, and highlight potential synergies with the proposed muon collider.

Working Group

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