

RF05 – Charged Lepton Flavor Violation

Rare and Precision Frontier Convener Meeting - Mar 16, 2022

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White papers status

White paper topic and associated LOIs	Editor	Status
Current mu-e conversion experiments	S. Middleton (Caltech)	Published 2203.07089
Current mu -> e gamma decay experiments	A. Papa (PSI)	Delayed (few days)
Current mu->eee decay experiments	G. Heketsch (UCL)	Almost ready to submit
Muonium - antimuonium oscillation	A. Petrov (WSU)	Delayed (early next week)
Mu2e-II experiment	F. Porter (Caltech)	Submitted
Tau decays and transitions	S. Banerjee (U of L)	Delayed (few days)
Heavy state decays	Mogens Dam (NBI)	Delayed (few days)
New concept for mu -> e gamma searches	G. Tassielli (INFN Lecce)	ABANDONED
New CLFV facility at FNAL	B. Echenard (Caltech)	Submitted

Summary

- 4 submitted / almost ready to submit
- 4 delayed a few days
- 1 abandoned

Motivation – theory overview

- Motivation to search for CLFV
- Complementarity with other frontiers / probes
- Theory overview

Current situation

- Muon conversion, decays and oscillations
- Tau
- Heavy states
- Meson / baryon decays (link to RP01/02 report)

New opportunities at existing facilities

- Mu2e II @ PIP II
- MACE @ EMuS in China
- New mu \rightarrow e gamma @ PSI or FNAL
- Taus

Next generation facilities

- High intensity muon facility + experiments
- Tau (if any)
- Heavy states (if any)

Conclusion and perspectives