

## Search for charged-lepton-flavor-violation in rare muon decays

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Charged-lepton-flavor-violating processes are strongly suppressed in the Standard Model, therefore their observation would be a clear indication of new Physics.

The MEG experiment at the Paul Scherrer Institute searches for the lepton-flavor-violating decay  $\mu^+ \rightarrow e^+ \gamma$ . The combined result of the data taken in 2009 and 2010 is presented. The upper limit on the branching ratio obtained ( $\text{BR}(\mu^+ \rightarrow e^+ \gamma) < 2.4 \cdot 10^{-12}$ ) improves by a factor five the previous best limit and tightens constraints on new Physics models. Future prospects are also discussed.

Another lepton-flavor-violating decay of the muon is  $\mu^+ \rightarrow e^+ e^- e^+$ .

The Mu3e collaboration recently proposed a new experiment for searching this decay aiming at sensitivities in the range  $10^{-15}$ - $10^{-16}$ .

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