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## The MEG experiment: past, present and future

*Monday, June 23, 2014 4:30 PM (15 minutes)*

We will present the latest result from the MEG experiment, based on the data collected at the Paul Scherrer Institut (PSI), in search of the Lepton Flavour Violating (LFV) decay  $\mu^+ \rightarrow e^+\gamma$ . Such decay is forbidden within the Standard Model (SM), nevertheless most of its viable extensions predict a branching ratio in the  $10^{-14}$  to  $10^{-12}$  range. An observation of the  $\mu^+ \rightarrow e^+\gamma$  decay would therefore represent an unambiguous sign of New Physics (NP) beyond the SM, whereas a tight upper limit significantly constraints the parameter space of NP scenarios, in a way complementary to high energy colliders measurements. With the analysis of the data collected in the years 2009-2011, we set the most stringent upper limit to date on charged LFV processes with  $\text{BR}(\mu^+ \rightarrow e^+\gamma) < 5.7 \times 10^{-13}$  at 90% confidence level. The MEG collaboration is working on a detector upgrade, MEG II, whose design and associated research and development projects will be illustrated as well.

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