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Searches for charged lepton flavor violating muon decay, MEG/MEG II experiment

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Summary

The MEG experiment, which is to search for charged lepton flavor violating muon decay $\mu^+ \rightarrow e^+\gamma$, had been successfully finished in 2013.

The final sensitivity was 5.3×10^{-13} , and since the experiment did not find any signal, the upper limit of the branching ratio of the

$\mu^+ \rightarrow e^+\gamma$ was set to be 4.2×10^{-13} at 90% CL.

This result is most stringent to date, and provides important constraints on the existence of the new physics beyond the standard model.

The MEG II experiment will improve the sensitivity by an order of magnitude with the new detector technologies.

The target sensitivity is 6×10^{-14} with three years data taking.

The full engineering run followed by the physics run will be started this year with all the detectors and the electronics.

In this talk, the MEG/MEG II experiments are introduced, and then the current status and the prospects of the MEG II experiment will be mainly discussed.

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