

The MEG Experiment: Run I Final Results and Preparation for Run II

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The MEG experiment at the Paul Scherrer Institut searches for charged lepton flavor violation in the rare muon decay $\mu^+ \rightarrow e^+ + \gamma$. The first run during the 2009–13 period excludes the decay process at the sensitivity limit of 4.2×10^{-13} at 90% confidence level. An upgrade of the experiment, MEGII, is underway with the aim to improve the sensitivity by an order of magnitude. We discuss the motivation and the analysis strategy for the search followed by a description of the new detectors, novel components and design of the existing detectors, and new calibration techniques. In preparation for the second run (2018–21), scheduled to start at the end of this year, we review the status of the current upgrades and conclude with the expected sensitivity of the MEGII experiment.

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