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Theory meets Experiment

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A search for $\mu^+ \rightarrow e^+ \gamma$ with the first dataset of the MEG II experiment

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The search for lepton flavour violation is regarded as one of the main roads in the quest for New Physics beyond the Standard Model. The MEG II experiment searches for the decay $\mu^+ \rightarrow e^+ \gamma$ with the world's most intense continuous muon beam at the Paul Scherrer Institute and high-performance detectors, aiming at ten times higher sensitivity than the previous MEG experiment. The result with the first dataset (taken in 2021) was published and the combination of this result and the limit obtained by MEG gives $\mathcal{B}(\mu^+ \rightarrow e^+ \gamma) < 3.1 \times 10^{-13}$ (90% CL), which is the most stringent limit to date. The MEG II experiment took data in 2022 and 2023 collecting a ten times larger data statistics than in 2021 and a more than twenty-fold increase in data statistics is anticipated by 2026 to reach the sensitivity goal. The latest results from the MEG II experiment will be presented.

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