PSI Center for Neutron and Muon Sciences

PSI Special Seminar for Announcement of New Result from MEG II Experiment

Title: A New Result from the MEG II Experiment

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Zoom link: https://psich.zoom.us/j/69493740520

Abstract

For several years, the MEG experiment has been searching for the possible occurrence of the lepton-flavor-violating decay $\mu \rightarrow e\gamma$, pushing the sensitivity limits ever further. This rare decay is considered one of the most promising channels to probe physics beyond the Standard Model of fundamental interactions.

The first phase of the experiment concluded in 2016, setting an upper limit on the branching ratio at 4.2×10^{-13} [1]. The second phase (MEG II), equipped with new and upgraded detectors [2], began data-taking in 2021. A preliminary result, based on seven weeks of data taking in 2021, showed a sensitivity already comparable to the entire MEG Phase I [3].

In this seminar, we will present the current status of the MEG II experiment and its future developments. Most notably, we will discuss the analysis of a significantly larger dataset taken in 2021-2022, representing a fivefold increase in statistics compared to the preliminary result [3]. This new analysis achieves a 2.4 times improvement in sensitivity compared to MEG Phase I.

[1] MEG II Collaboration, Eur. Phys. J. C (2016) 76:434.
[2] MEG II Collaboration, Eur. Phys. J. C (2024) 84:190.
[3] MEG II Collaboration, Eur. Phys. J. C (2024) 84:216.

Coffee before the seminar

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