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## The MEGII experiment and exotic searches

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The MEG experiment searches for the  $\mu^+ \rightarrow e^+ \gamma$  decay and has recently set the most stringent upper limit on its branching ratio  $B(\mu^+ \rightarrow e^+ \gamma) < 4.2 \cdot 10^{-13}$  at 90% C.L., based on the full data sample acquired during 2009-2013 years. It is a factor 30 improvement over the previous limit set by the MEGA experiment ( $B(\mu^+ \rightarrow e^+ \gamma) < 1.2 \cdot 10^{-11}$  at 90% C.L.) and also the strongest bound on any forbidden particle decay.

The compelling physics motivation to further explore the  $\mu^+ \rightarrow e^+ \gamma$  decay has led the collaboration to decide upon an upgrade of the experiment, with the aim to improve the sensitivity by at least one order of magnitude. The MEG upgrade (MEGII) has been approved at PSI and by the institutions of the international collaboration, and is now underway with the first full engineering run scheduled and accomplished for the 2020-21. MEGII started its data taking period on 2021 and is expected to continue for the following years until the full statistics is achieved. More exotics searches are also considered to be carried out with the MEG apparatus.

The current status of the experiment and the future possible searches will be discussed.

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**Session Classification:** Session