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Status and prospects of charged lepton flavor violation searches with the MEG-II experiment

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The MEG experiment took data at the Paul Scherrer Institut in the years 2009-2013 and published the most stringent limit on the charged lepton flavor violating decay $\mu \to e\gamma$: BR($\mu \to e\gamma$) $< 4.2 \times 10^{-13}$ @90% C.L.
The MEG detector has been upgraded in order to reach a sensitivity of 5×10^{-14}, which corresponds to an improvement of one order of magnitude.
The basic idea of MEG-II is to achieve the highest possible sensitivity by making the maximum use (7×10^7 muons/s) of the available muon intensity at PSI with an improved detector, since MEG ran at a reduced intensity (3×10^7 muons/s) in order to keep the background at a manageable level.
The key features of the MEG-II are the increase of the rate capability of all detectors to enable running at the intensity frontier, and to increase the resolutions while maintaining the same detector concept.
A new mass, single volume, high granularity tracker, together with a thinner muon stopping target, leads to better spatial, angular and energy positron resolution.
A new highly segmented timing counter improves positron timing capabilities. The detector acceptance for positrons is increased by more than a factor 2 by diminishing the material between these two detectors. The liquid Xenon calorimeter has new smaller photosensors (VUV-sensitive SiPM) that replace current phototubes and improve in particular photon energy resolution.
The results of the 2018 pre-engineering run, the first with all the sub-detectors, and the current schedule will presented.

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