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Status of the MUonE experiment

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The MUonE experiment aims to measure the hadronic vacuum polarization contribution to the muon anomaly a_μ^{HLO} better than 1%. An innovative approach is proposed, using elastic scattering of 160 GeV muons on atomic electrons in a low-Z target. A precision of 10ppm on the angular distribution of the scattering particles in the muon-electron scattering process is required. The M2 beamline at CERN provides the necessary intensity to reach the statistical goal in few years of data taking. In summer 2024 a Proposal has been sent to the CERN SPSC asking for the Phase 1 of MUonE to be performed with a small scale experiment in 2025. This is expected to obtain a first measurement of the hadronic contribution to the running QED coupling, $\Delta\alpha_{had}$, with a 20% statistical uncertainty. We will present the progress achieved in the last years, the current status, and the future plans of the experiment.

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