

# Status of the MUonE experiment

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The precision measurement of the anomalous magnetic moment of the muon presently exhibits a  $3.5\sigma$  discrepancy with the Standard Model (SM) prediction. In the next few years this measurement will reach an even higher precision at Fermilab and J-PARC. While the QED and electroweak contributions to the muon  $g-2$  can be determined very precisely, the leading hadronic (HLO) correction is affected by a large uncertainty which dominates the error of the SM prediction.

A novel approach has been proposed to determine the HLO contribution to the muon  $g-2$  based on the measurement of the effective electromagnetic coupling in the space-like region at low-momentum transfer. We will discuss the possibility of performing this measurement at CERN by the MUonE experiment which aims at a very precise determination of the muon-electron elastic differential cross-section, exploiting the scattering of 150 GeV muons (currently available at CERN's North area) on atomic electrons of a low-Z target. The status of the proposal in view of the test run on a reduced detector expected in 2021 will be presented.

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### Secondary track (number)

5

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