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Results of a MUonE scaled detector with 160 GeV muon beam

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The MUonE experiment proposes a novel approach to determine the hadronic contribution to the muon anomalous magnetic moment, by measuring the running of the QED coupling through the analysis of μe elastic scattering events. The experiment will be carried out at CERN North Area, by scattering the high intensity 160 GeV muon beam available on a low-Z target. The detector would have 40 stations comprising a low-Z target followed by a tracking system, which can measure the scattering angles with high precision; further downstream lies an electromagnetic calorimeter and a muon detector. To validate the basic concepts, a run was performed in 2023 with two stations followed by a calorimeter. This showed, for the first time, the ability of the detector to measure elastic events with high rate 160 GeV muons of 40 MHz and is considered a milestone to proceed with a Technical Proposal of the experiment. The results from the test run will be presented.

Alternate track

I read the instructions above

Yes

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