



Contribution ID: 507

Type: **Parallel**

## Tackling the muon g-2 anomaly with the MUonE experiment at CERN

*Tuesday 8 July 2025 17:30 (20 minutes)*

The MUonE experiment at CERN aims to determine the leading-order hadronic contribution to the muon g-2 by an innovative approach, using elastic scattering of 160 GeV muons on atomic electrons in a low-Z target. The method relies on the measurement of the hadronic contribution to the running of the QED coupling,  $\Delta\alpha_{had}(t)$ , which can be extracted from a precise measurement of the shape of the differential cross section of the  $\mu e$  elastic process. The M2 beam line at CERN provides the necessary intensity needed to reach the statistical goal in few years of data taking. The experimental challenge relies in the precise control of the systematic effects.

A first run with a minimal prototype setup was carried out in 2023. A pilot run has been approved to be held in 2025 with a reduced setup of the full detector components. We will present the first preliminary results from the test runs, and discuss the future plans.

### Secondary track

**Authors:** SPEDICATO, Eugenia (infn sezione di Bologna); ABBIENDI, Giovanni (INFN (Bologna)); COLLABORATION, MUonE

**Presenter:** SPEDICATO, Eugenia (infn sezione di Bologna)

**Session Classification:** T06 (Top and Electroweak Physics)

**Track Classification:** T06 - Top and Electroweak Physics