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Contribution ID : 90

Type : **Poster**

The low energy beam profile monitor for the muon g-2/EDM experiment at J-PARC

Tuesday, 28 February 2017 17:00 (1:00)

Content

The muon g-2/EDM experiment at J-PARC aims to measure the muon's anomalous magnetic moment and electric dipole moment with high precision by utilizing an ultra-cold muon beam. Current muon g-2 discrepancy between Standard Model prediction and average experimental value is about 3 standard deviation. This experiment requires a development of the muon LINAC to accelerate thermal muons to 300 MeV/c momentum. Along with this, beam diagnostic detectors play a key role. The beam profile monitoring system is designed to measure the profile of the low energy muon beam. It was tested during two beam tests in 2016 at MLF D2 line at J-PARC. The detector was used with positive muons, μ^+ , p and H-, e- and UV light. The system overview and preliminary results are given. Special attention is paid to the beam profile monitor spatial resolution and online monitor software used during data taking.

Summary

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Session Classification : Posters

Track Classification : Electronics, Trigger and Data Acquisition