

## Muon g-2/EDM experiment at J-PARC

*Friday 1 October 2021 08:50 (25 minutes)*

The muon g-2 experiment at J-PARC is under preparation and targeted to measure the muon anomalous magnetic moment with the precision of 450 ppb and muon electric dipole moment with  $1.5 \times 10^{-21}$  e cm at its first stage,

thus contributing to investigation of discrepancy between Standard Model prediction and the current world average of g-2. The latter is dominated by two similar experiments E821 BNL and E989 FNAL, while we suggest a novel approach: pulsed primary proton beam provides surface muons, which are diffused through a silica aerogel target forming thermalised muonium atoms. They are laser ionised and re-accelerated by a multi-stage linac up to 300 MeV/c before spiral injection into the storage uniform 3 T MRI-like magnet volume at the stable orbit in the absence of E-field. The silicon strip detector placed inside the magnet measures decayed positron parameters used in data analysis.

We report the experimental approach, current status, and future prospects.

### What is your topic?

Anomalous Magnetic Moment of the muon

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