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Muon $g-2$ /EDM Experiment at J-PARC

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A new measurement of muon $g-2$ /EDM is planned at J-PARC. The most recent measurement performed at BNL shows more than three standard deviations discrepancy with the standard model value. New E34 measurement at J-PARC uses a novel technique of ultra-cold muon beam. Ultra-cold muons are generated from high intensity surface muons by thermal muonium production and laser ionization. After acceleration to 300 MeV in muon linac, the beam is injected and stored in a circulating orbit in an ultra-high precision MRI-type magnet for $g-2$ /EDM measurement. Thus, it is quite complementary to the measurement at BNL and FNAL. The overall design and its preparation status will be reported.

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