

Measurement of muonium hyperfine splitting at J-PARC

We are planning a measurement of the ground state hyperfine structure of muonium at J-PARC/MLF. Muonium is a hydrogen-like bound state of leptons, and its HFS is a good probe for testing QED theory. The muon mass m_μ and magnetic moment μ_μ which are fundamental constants of muon have been so far determined by the muonium HFS experiment at LAMPF. The high intensity beam soon to be available at J-PARC allows one order of magnitude more accurate determination of those constants, which also plays an important role in the new measurement of anomalous magnet moment.

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