

Muon Penning Trap at J-PARC

Takayuki YAMAZAKI (KEK/J-PARC)

Motivation

Positive muon (μ^+) trap

- New precision measurement of μ_{μ^+} , $m_{\mu^+} \rightarrow 1$ ppb, and $\tau_{\mu^+} \rightarrow 1$ ppm

Negative muon (μ^-) trap

- Direct measurement of τ_{μ^-} in vacuum (60 ppm) $\rightarrow$ 1 ppm
- Antimuonium (Mu , μ^-e^+) production

Demonstration of μ^- trap

