

Analysis of systematic error in hadronic vacuum polarization contribution to muon $g-2$

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We present a systematic study of finite size correction and cut-off effect in hadronic vacuum polarization contribution to muon $g-2$ with two volumes, 5.4 fm^3 and 10.8 fm^3 , and two lattice cut-off, 2.33 GeV and 3.06 GeV, at the physical pion on the PACS configuration. In this analysis, using high statistics data, we compare two volumes at long-distance on the physical point to directly estimate the finite size correction, and it then makes a comparison with ChPT prediction. Using the different cut-off scales on $\sim 10.8 \text{ fm}^3$ lattice box, we try to estimate the cut-off effect with local and point-splitting operators on the two cut-off configurations.

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