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Structure-dependent electromagnetic finite-volume effects to the hadronic vacuum polarisation

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The current precision goal of the hadronic vacuum polarisation requires the inclusion of electromagnetic corrections as well as strong isospin-breaking effects. In finite-volume QED prescriptions such as $\mathrm{QED_L}$, finite-volume effects scale as inverse powers of the volume, L. For the hadronic vacuum polarisation in $\mathrm{QED_L}$ the volume effects enter at $1/L^3$ and are known analytically in a point-like approximation of pions. For actual predictions, these effects would have to be derived including also dependence on internal structure of the pions. In this talk, I will discuss on-going work and prospects to determine the structure-dependent finite-volume effects for the hadronic vacuum polarisation in $\mathrm{QED_L}$.

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