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# Lattice calculation of the pion electromagnetic form factor at high momentum transfer

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The pion electromagnetic form factor, $F_\pi$, is a fundamentally important topic for our understanding of the hadron structure and the transition from perturbative to nonperturbative QCD. JLAB's experiment E12-06-101 proposes to extend the high quality $F_\pi$ data to $Q^2 = 6.0$ GeV$^2$ as a part of JLAB's 12 GeV upgrade. Being motivated by this, we present a lattice QCD calculation of $F_\pi$ using the method of distillation and the variational approach which significantly reduce the excited state contamination. We study the shape of the vector form factor in the $Q^2$ range from zero to a few GeV$^2$ using Wilson quark formalism on our $203 \times 128$ anisotropic lattice configuration with light (up/down) and strange quarks in the sea and 400 MeV pion mass.

**Primary authors:** Dr CHAKRABORTY, Bipasha (Jefferson Lab); CHAKRABORTY, bipasha

**Presenters:** Dr CHAKRABORTY, Bipasha (Jefferson Lab); CHAKRABORTY, bipasha

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