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The Pion Form Factor in Lattice QCD

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The determination of the pion form factor to high *Q^2* provides an important measure of the transition to quark and gluon degrees of freedom in hadrons. Its measurement to Q^2 in excess of 6 GeV^2 is an approved experiment of the 12 GeV upgrade. In this talk, we present recent progress aimed at computing the pion form factor in lattice QCD to values of Q^2 commensurate with the upcoming experimental measurements. We apply some of the novel methods developed for lattice calculations of the excited-state spectrum to isolate the ground-state pion, and use a basis of interpolating operators for the pion that reflect the symmetries of the lattice to facilitate calculations at high momentum transfers. Finally, we describe how the methods can aid in the calculation of quasi-PDFs of the pion.

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