

Lattice QCD prediction of kaon electromagnetic form factor at large Q^2 up to 10 GeV^2 .

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Electromagnetic form factor, especially its asymptotic behavior for large momentum transfer (Q^2), of kaon provides crucial insight into the partonic structure of a Nambu-Goldstone boson in strong interaction. Studies of the electromagnetic form factor of kaon up to $Q^2 \sim 6 \text{ GeV}^2$ are underway at the ongoing JLab12 experiment, and its measurements in an extended range of $Q^2 \sim 9 - 30 \text{ GeV}^2$ are planned at the future Electron Ion Collider (EIC). For the first time, we will present results for the kaon electromagnetic form factor in the range of $Q^2 \sim 2 - 10 \text{ GeV}^2$ from state-of-the-art lattice QCD calculations carried out using physical values of up, down and strange quark masses. These results will provide benchmark QCD predictions for model-based studies and the experimental measurements, in particular at the boundaries between the JLab12 and the EIC.

Primary author: Ms SHI, Qi (Central China Normal University)

Co-authors: Dr HANLON, Andrew D. (Brookhaven National Laboratory); Prof. DING, Heng-Tong (Central China Normal University); Dr SCIOR, Philipp (Brookhaven National Laboratory); Dr SYRITSYN, Sergey (Stony Brook University); Dr MUKHERJEE, Swagato (Brookhaven National Laboratory); Dr GAO, Xiang (Argonne National Laboratory); Dr ZHAO, Yong (Argonne National Laboratory)

Presenter: Ms SHI, Qi (Central China Normal University)

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