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An update on QCD+QED simulations with C* boundary conditions

Thursday, 29 July 2021 06:45 (15 minutes)

This talk is an update on the ongoing effort of the RC* collaboration to generate fully dynamical QCD+QED configurations. We present the results of several ensembles with C* boundary conditions that were generated using the openQ*D code. The simulations were tuned to the U-symmetric point ($m_d = m_s$) with pions at $m_{\pi^\pm} \approx 400$ MeV and a splitting of $m_{K^0} - m_{K^\pm} \approx 20$ MeV. In order to amplify the isospin breaking effects an artificially large value for the renormalized electromagnetic coupling $\alpha_R \approx 0.04$ was chosen. A novelty in the analysis is the inclusion of the sign of the Pfaffian and a reweighting in the mass. Also, the stability of the algorithm, diagnostic observables and neutral and charged meson masses will be discussed. Furthermore, the line of constant physics and the chosen tuning strategy will be shortly presented.

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