

Pion-pion scattering with physical quark masses

Wednesday, July 25, 2018 3:00 PM (20 minutes)

We present preliminary results on the scattering of pseudoscalar, vector, and scalar mesons on a physical pion mass, 2+1 flavor mobius-DWF, ensemble with periodic boundary conditions (PBCs) generated by the RBC and UKQCD collaborations. Using all-to-all propagators, we produce thousands of correlator momentum combinations. Energy spectra and phase shifts, including excited states, are then extracted via the solutions of a generalized eigenvalue problem. Included in this talk will also be an overview of the computational strategies employed, including a discussion of split-CG matrix solvers (communication avoidance) and lattice crossing symmetry (momentum combinatorics reduction). These studies are intended to serve as groundwork for a full PBC calculation of direct CP violation in $K \rightarrow \pi\pi$ later this year.

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