Contribution ID: **295** Type: **not specified**

Electromagnetic splittings of charged and neutral mesons from improved staggered quarks

Thursday, 17 June 2010 14:30 (20 minutes)

We extend MILC's initial study of the electromagnetic splittings of charged and neutral mesons, and the violation of Dashen's theorem. Meson masses are calculated using the MILC Nf = 2 + 1, staggered SU(3) gauge configurations, and independently generated U(1) gauge configurations. The meson correlators are calculated using SU(3)xU(1) gauge fields. A large fraction of the meson correlators are calculated using an implementation of the MILC staggered multi-mass inverter that runs on a single NVIDIA GPU in double precision. When the current analysis is complete, we will have results at three lattice spacings, from about 0.15 to 0.09 fm, with several light quark masses at each lattice spacing. Once electromagnetic effects are included in the corresponding rooted, staggered chiral perturbation theory calculations, we should have excellent control over the chiral and continuum limits.

Please, insert your presentation type (talk, poster)

talk

Primary author: TOROK, Aaron (Indiana U.)

Co-authors: BAZAVOV, Alexei (U. of Arizona); DETAR, Carleton (U. of Utah); BERNARD, Claude (Washington U.); TOUSSAINT, Doug (U. of Arizona); FREELAND, Elizabeth (Washington U.); SHI, Guochun (NCSA); HETRICK, James (U. of the Pacific); OSBORN, James (Argonne Natl. Lab.); LAIHO, John (U. of Glasgow); LEVKOVA, Ludmila (U. of Utah); OKTAY, Mehmet (U. of Utah); SUGAR, Robert (U.C. Santa Barbara); VAN DE WATER, Ruth (Brookhaven Natl. Lab.); GOTTLIEB, Steven (Indiana U.); BASAK, Subhasish (NISER); HELLER, Urs (American Physical Society); FREEMAN, Walter (U. of Arizona)

Presenter: TOROK, Aaron (Indiana U.)

Session Classification: Parallel 45: Hadron spectroscopy

Track Classification: Hadron spectroscopy