



Contribution ID: 246

Type: **not specified**

Spatial diquark correlations in a hadron

Thursday, 17 June 2010 15:50 (20 minutes)

Using lattice QCD, a diquark can be studied in a gauge-invariant manner by binding it to a static quark in a heavy-light-light hadron. We compute the simultaneous two-quark density of a diquark, including corrections for periodic boundary conditions. We define a correlation function to isolate the intrinsic correlations of the diquark and reduce the effects caused by the presence of the static quark. Away from the immediate vicinity of the static quark, the diquark has a consistent shape, with much stronger correlations seen in the good (scalar) diquark than in the bad (vector) diquark. We present results for pion mass 293 MeV in unquenched QCD and for pion mass 893 MeV in quenched QCD, and discuss the dependence of the spatial size on the pion mass.

Please, insert your presentation type (talk, poster)

talk

Primary author: GREEN, Jeremy (Center for Theoretical Physics, Massachusetts Institute of Technology)

Co-authors: Prof. NEGELE, John (Center for Theoretical Physics, Massachusetts Institute of Technology); Prof. ENGELHARDT, Michael (Physics Department, New Mexico State University); Mr VARILLY, Patrick (Department of Physics, University of California, Berkeley)

Presenter: GREEN, Jeremy (Center for Theoretical Physics, Massachusetts Institute of Technology)

Session Classification: Parallel 37: Hadronic structure and interactions

Track Classification: Hadronic structure and interactions