

Contribution ID: 58 Type: not specified

Lattice QCD analysis for the instantaneous interquark potential in the generalized Landau gauge

Monday, 14 June 2010 14:50 (20 minutes)

We analyze the instantaneous interquark potential in the generalized Landau gauge (lambda gauge) in SU(3) lattice QCD. Using this gauge, we can analyze continuous change of gluon properties from the Landau gauge toward the Coulomb gauge.

In the Coulomb gauge, the instantaneous potential is expressed by the Coulomb plus linear potential, with about two times larger string tension. In the Landau gauge, the instantaneous potential has no linear part. We find that this linear confinement part appears and grows during the change from the Landau gauge to the Coulomb gauge.

We also find that the linear derivative of the instantaneous potential coincides with the string tension in a specified lambda gauge with lambda_C. In this gauge, the interquark potential can be approximately described by the instantaneous gluon exchange. We expect that this lambda_C gauge is useful in connecting from QCD to the quark model.

Please, insert your presentation type (talk, poster)

talk

Primary author: IRITANI, Takumi (Kyoto University)

Co-author: Prof. SUGANUMA, Hideo (Kyoto University)

Presenter: IRITANI, Takumi (Kyoto University)

Session Classification: Parallel 05: Vacuum structure and confinement

Track Classification: Vacuum structure and confinement