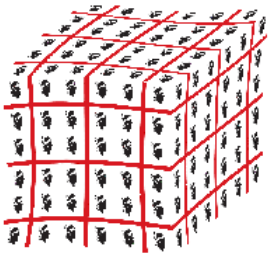

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The qbar - q potential from Bethe - Salpeter amplitudes on lattice

Thursday, 17 June 2010 15:10 (20 minutes)

The hadron spectroscopy for mesons including heavy quarks has been continuously studied.
Various models with the use of non-relativistic framework for QCD (NRQCD) are applied to the studies of the heavy quark bound systems.
The potentials between anti-quarks and quarks are the most important ingredients in models from NRQCD.
So far, the static 'Qbar-Q' potential with relativistic corrections have been studied using Wilson loop in lattice QCD.
The static potential reveals that the Qbar-Q potential contains confinement and Coulomb potentials, where the finite mass effects have been included through perturbative expansion
in 1/m_Q.

In this study, we investigate the 'qbar-q' potentials with finite quark masses in quenched lattice QCD simulation.
In order to derive the qbar-q potentials,
we have utilized the method which has been recently developed by HAL QCD collaboration.
In this method, we measure the Bethe-Salpeter amplitudes in qbar-q system,
and the potentials are derived from the amplitudes through the effective Schroedinger equation.
We present our results of qbar-q potentials in J^{P}=0^-,1^- channel.

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talk

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