



Contribution ID: 1228

Type: Parallel Session Talk

Alpha_s from Lattice QCD: progresses and perspectives for a realistic full-QCD determination of the running Strong coupling

Friday 23 July 2010 15:20 (25 minutes)

QCD is believed to be the theory of the strong interactions with, as only inputs, one mass parameter for each quark species and the value of the QCD coupling constant at some energy or momentum scale in some renormalization scheme. This is Λ_{QCD} , the only non-perturbative parameter in the limit of massless quarks, to be taken from experiment, and the one which expresses the scale of strong interactions and drives the running of the QCD coupling. The QCD running coupling can be also obtained from lattice computations, the free parameters being adjusted from experimental numbers, masses, decay constants etc. As far as the non-perturbative lattice computation could be realistic, a comparison with direct experimental determination of the strong coupling, at different transferred momenta, would be in order. In this talk, the last new results concerning the lattice evaluation of the running QCD coupling constant will be discussed.

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Session Classification: 09 - Progress in Lattice Techniques and New Results

Track Classification: 09 - Progress in Lattice Techniques and New Results