XIIth Quark Confinement and the Hadron Spectrum



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A precise determination of the $N_{\rm f} = 3~{\rm QCD}$ Λ -parameter from lattice QCD

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In this talk we present the ALPHA-collaboration computation of the three-flavour QCD Λ -parameter. Starting from the value of Λ in units of an intermediate energy scale $\mu = 1/L_0 \sim 4 \text{ GeV}$ (cf. talk by S. Sint), we first discuss the connection of this scale and a given hadronic scale, $1/L_{\text{had}}$, of a few hundred MeV. The latter is obtained very precisely by determining the non-perturbative scale-evolution of the recently proposed gradient flow coupling between these scales. In a second step, $1/L_{\text{had}}$ is expressed in terms of some measurable hadronic quantity using results from the CLS-collaboration effort. This allows the Λ -parameter to be determined in physical units.

Summary

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