

Improving the precision of light quark mass determinations

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Quark masses are fundamental parameters of QCD. Their accurate determination is thus a mandatory task. Light quark masses can be determined non-perturbatively through lattice simulations in a given renormalization scheme, e.g. a momentum subtraction scheme. The $\overline{\text{MS}}$ scheme is not directly amenable in lattice simulations since it is closely related to dimensional regularization. To obtain results for the light quark masses in $\overline{\text{MS}}$ scheme conversion factors are needed, which transform the quark mass from a momentum subtraction scheme to $\overline{\text{MS}}$ scheme. Such conversion factors can be computed in continuum perturbation theory. The concepts and framework of a new improved scheme as well as the perturbative computation of the conversion is discussed in the talk. The work is based on the results of 0901.2599 [hep-ph].

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