

Non-perturbative Renormalization and Running of quark masses in $N_f = 3$ QCD

Wednesday, 13 December 2017 17:20 (20 minutes)

I present our results for the computation of the non-perturbative renormalization and running of the renormalized quark masses in $N_f = 3$ QCD. Adopting finite-size scaling techniques, the running is computed from low energy scales $\sim \Lambda_{\text{QCD}}$ to high energy $\sim M_W$. This large range of scales allows to make contact from one side with a “hadronic” renormalization scheme, and on the other with perturbation theory.

The computation is carried out to very high precision, using massless $\mathcal{O}(a)$ improved Wilson quarks.

Primary authors: Dr RAMOS, Alberto (Trinity College Dublin (TCD) - School of Mathematics); Prof. VLADIKAS, Anastassios (Università degli Studi di Roma “Tor Vergata” - Dipartimento di Fisica); Prof. PENA, Carlos (Universidad de Madrid UAM - Instituto de Física Teórica UAM-CSIC); PRETI, David (INFN sezione di Torino); Dr CAMPOS, Isabel (Instituto de Física de Cantabria IFCA-CSIC - Instituto de Física Teórica UAM-CSIC); Dr FRITZSCH, Patrick (CERN - Theory Division)

Presenter: PRETI, David (INFN sezione di Torino)

Session Classification: Session 4