QCD sum rules calculation of heavy Λ semileptonic decay and heavy quark effective theory

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Abstract

A sum rule analysis of heavy Λ decays in full QCD is reported. For the semileptonic Λ_c decay a reasonable agreement with experiment is obtained : $\Gamma(\Lambda_c \to \Lambda + e^+ + \nu_e) = (1.0 \pm 0.3) \times 10^{-13}\, GeV$.

Allthough the formalism incorporates in the heavy quark mass limit the symmetries of heavy quark effective theory, one finds for the semileptonic decay of the $\Lambda_b \to \Lambda_c$ at the zero recoil point a violation of the heavy quark symmetry of about - 20%.