

QCD sum rules analysis of weak decays of doubly heavy baryons: the $b \rightarrow c$ processes

A comprehensive study of $b \rightarrow c$ weak decays of doubly heavy baryons is presented in this paper. The transition form factors as well as the pole residues of the initial and final states are respectively obtained by investigating the three-point and two-point correlation functions in QCD sum rules. Contributions from up to dimension-5 and dimension-6 operators are respectively considered for the two-point and three-point correlation functions. The obtained form factors are then applied to a phenomenological analysis of semi-leptonic decays.

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