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First inverse moments of heavy-hadron distribution amplitudes

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Heavy-quark symmetry (HQS), despite being approximate, allows to relate dynamically many hadron systems. In the HQS-limit heavy mesons and doubly-heavy baryons are very similar as their dynamics is determined by a light quark moving in a color field of a static source. As in the meson case, matrix elements of non-local interpolation currents between the baryon state and vacuum are determined by light-cone distribution amplitudes (LCDAs). The first inverse moment of the leading twist B -meson distribution amplitude is a hadronic parameter needed for an accurate theoretical description of B -meson exclusive decays. It is quite natural that a similar moment of doubly-heavy baryon is of importance in exclusive doubly-heavy baryons' decays. We obtain HQET sum rules for the first inverse moment based on the correlation functions containing nonlocal heavy-light operator of the doubly-heavy baryon and its local interpolating current. Numerical estimates of this moment are presented.

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