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Exclusive decays of χ_{bJ} and η_b into two charmed mesons[1]
EMANUELE MEREGHETTI, REGINA AZEVEDO, University of Arizona, LONG BINGWEI, European Centre for Theoretical Studies in Nuclear Physics and Related Areas and University of Arizona — We develop a framework to study the exclusive two-body decays of bottomonium into two charmed mesons and apply it to study the decays of the C-even bottomonia. Using a sequence of effective field theories, we take advantage of the separation between the scales contributing to the decay processes, $2m_b \gg m_c \gg \Lambda_{QCD}$. We prove that, at leading order in the EFT power counting, the decay rate factorizes into the convolution of two perturbative matching coefficients and three non-perturbative matrix elements, one for each hadron. We calculate the relations between the decay rate and non- perturbative bottomonium and D-meson matrix elements at leading order, with next-to-leading log resummation. The phenomenological implications of these relations are discussed.

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