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Continuum nonperturbative QCD approaches to charm physics

We discuss theoretical approaches to form factors in heavy-meson decays, e.g. weak decay constants, transition form factors and effective heavy-to-light meson couplings, which are hadronic expressions of nonperturbative QCD. After motivating their origin in QCD factorization and heavy quark effective theories, we retrace their evolution from earlier quark-model calculations to non-perturbative QCD techniques with an emphasis on the formulation of bound states within the framework of the quark's gap equation and the meson's Bethe-Salpeter equation, both of which are nonperturbative continuum approaches to QCD. We shall show how the heavy meson's bound state wave function can be projected onto the light front and thus obtain the so-called light-cone distribution amplitudes (LCDA) from the knowledge of the meson's Bethe-Salpeter amplitude.

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