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Theory of Inclusive B Decays

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Inclusive semileptonic and radiative B decays play a prominent role in the extraction of fundamental parameters such as the CKM matrix elements V_{cb} and V_{ub} and the b-quark mass, and in constraining models of new physics. Near-future experiments such as Belle II are expected to improve the experimental precision of such decays. To match the new experimental era, progress on the theory side is needed. The experimentally implemented theoretical calculations for inclusive B decays are at an “NLO” level. Namely, they include first order perturbative corrections to the leading power term and first order power corrections. The goal of the future advances in the theory of inclusive B decays is to strive for an “NNLO” description, namely incorporating second order perturbative corrections to the leading power term and first order perturbative corrections to the first order power corrections. In this talk I will review the current theoretical status and the future theoretical progress.