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A global fit to extract the B->Xs gamma decay rate

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The measurements of the total B->Xs gamma decay rate and the determination of the CKM matrix element |Vub| play important roles in looking for new physics in the flavor sector of the Standard Model, complementary to the ongoing direct searches at the LHC. Their measurements from present and future B-factory data require the precise knowledge of the nonperturbative parts of the parton distribution function for the b quark in the B-meson (called the shape function). We present the state of the art theory and a global fit to BaBar and Belle data to extract the shape function and the B->Xs gamma decay rate using a model-independent framework with reliable theoretical uncertainties for the shape function, based on an expansion in a set of basis functions.

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