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The $b \rightarrow s g g$ Decay in the General two Higgs Doublet Model


The $b \rightarrow s g g$ Decay in the General two Higgs Doublet Model

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Abstract: We study the decay width of the inclusive process $b \rightarrow s g g$ in the two Higgs doublet model with three-level flavor changing neutral currents (model III). We analyse the dependencies of the differential decay width to the s -quark energy E_s and model III parameters, charged Higgs mass m_{H^\pm} and Yukawa coupling $\bar{\xi}_{N,bb}^D$. We observe that there exist a considerable enhancement in the decay width for the relevant process. This enhancement can be reduced by choosing C_7^{eff} as negative or increasing the lower bound of m_{H^\pm} to the large values. This is an interesting result which gives an idea on the mass m_{H^\pm} and sign of C_7^{eff} .

Key Words: Inclusive, model III, decay width, Yukawa coupling

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