

# Bounding the $B_s \rightarrow \gamma\gamma$ decay from Higgs mediated FCNC transitions

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## Abstract content

The Higgs mediated flavor violating bottom-strange quarks transitions induced at the one-loop level by a nondiagonal  $Hbs$  coupling are studied within the context of an effective Yukawa sector that comprises  $SU_L(2) \times U_Y(1)$ -invariant operators of up to dimension-six. The most recent experimental result on  $B \rightarrow X_s \gamma$  with hard photons is employed to constraint the  $Hbs$  vertex, which is used to estimate the branching ratio for the  $B_s \rightarrow \gamma\gamma$  decay. It is found that the  $B_s \rightarrow \gamma\gamma$  decay can reach a branching ratio of the order of  $4 \times 10^{-8}$ , which is 2 orders of magnitude smaller than the current experimental limit.

## Summary

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