

Two-loop corrections to $b \rightarrow s\gamma$ in TNMSSM

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The rare decay $b \rightarrow s\gamma$ is important to research new physics beyond the standard model (SM). In this work, we investigate two loop electroweak corrections to $b \rightarrow s\gamma$ in the next to minimal supersymmetric extension of the SM with adding two triplets and one singlet (TNMSSM). In this framework, new particles and new definition of squarks can affect the theoretical predictions of the process, with respect to the MSSM. Considering the constraints from updated experimental data, the numerical results show that the TNMSSM can fit the experimental data for the branching ratios of $b \rightarrow s\gamma$. The results of the rare decays also further constrain the parameter space of the TNMSSM.

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