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Testing Technicolor Models in Top Quark Pair Production at High Energy Photon Colliders

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Abstract

We study pseudo-Goldstone boson corrections to $\gamma\gamma \to t\bar{t}$ production rates in technicolor models with and without topcolor at the $\sqrt{s} = 0.5$ and 1.5 TeV photon colliders. We find that, for reasonable ranges of the parameters, the corrections are large enough to be observable, and the corrections in models with topcolor are considerably larger than those in models without topcolor, and they are all significantly larger than the corresponding corrections in the minimal supersymmetric standard model (MSSM) with $\tan\beta \geq 1$. So that the two kinds of technicolor models and the MSSM with $\tan\beta \geq 1$ can be experimentally distinguished.

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