Top Quark Pair Production at e^+e^- Colliders in the Topcolor-Assisted Technicolor Model

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Abstract: In the framework of topcolor-assisted technicolor model we calculate the contributions from the pseudo Goldstone bosons and new gauge bosons to $e^+e^- \rightarrow t\bar{t}$. We find that for reasonable ranges of the parameters, the pseudo Goldstone bosons afford dominate contribution, the correction arising from new gauge bosons is negligibly small, the maximum of the relative corrections is $\sim$10% with the center-of-mass energy $\sqrt{(s)}$=500 GeV; whereas in the case of $\sqrt{(s)}$=1500 GeV, the relative corrections could be up to 16%. Thus large new physics might be observable at the experiments of next-generation linear colliders.

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