Detecting Extended Technicolor Effects via the Process $e^+e^-\rightarrow t\bar{t}$ at High Energy e^+e^- Linear Collider

YUE Chong-Xing, WAN Ling-De, SUN Jun-Feng and LU Gong-Ru

College of Physics and Information Engineering, Henan Normal University, Xingxiang 453002, China
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Abstract: We calculate the corrections of extended technicolor (ETC) interactions to the asymmetry parameter A_{LR} and the polarized parameters P_L^t, P_R^t of the process $e^+e^-\rightarrow t\bar{t}$ in topcolor-assisted multiscale technicolor model. Our results show that the ETC effect on P_R^t is negligibly small which can be safely ignored, and the ETC effect on A_{LR} may be testable at high energy e^+e^- linear collider (LC). For $0.03\leqslant\varepsilon\leqslant0.1$, 500 GeV$\leqslant(s)^{1/2}\leqslant$800 GeV, the relative correction of P_L^t is in the range of $15\%\leqslant\delta P_L^t/P_L^{t,SM}\leqslant39\%$, which will certainly be detected at the LC experiments (for example TESLA).

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