

Study on Charged Top-Pion Decay Processes

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Abstract: In the framework of top-color assisted technicolor (TC2) theory, we study the four decay processes of charged top-pion, i.e., $\Pi_t^+ \rightarrow t\bar{b}$, $\Pi_t^+ \rightarrow c\bar{b}$, $\Pi_t^+ \rightarrow W^+\gamma$, $\Pi_t^+ \rightarrow W^+Z^0$. The decay branching ratio of these modes are calculated. The results show that the main decay channels of charged top-pion are the tree level modes: $\Pi_t^+ \rightarrow t\bar{b}$ and $\Pi_t^+ \rightarrow c\bar{b}$.

Light Π_t^+ is easier to be detected than heavy one at future coliders. So, the study provides us with some useful informations to search for charged top-pion.

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Key words: top-pion, electroweak symmetry breaking, decay processes

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