

Production of Neutral Top-Pion Associated with a Gauge Boson at LHC

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Abstract: In this paper, we study the production of the neutral top-pion (Π_t^0) associated with a gauge boson at the LHC, i. e. $pp \rightarrow \Pi_t^0 V (V=g, W, Z, \gamma)$. The cross section of $pp \rightarrow \Pi_t^0 g$ is at the level of 10^2 pb in the most parameter space. Such a process with the flavor-changing decay mode $\Pi_t^0 \rightarrow t\bar{c}$ might provide viable signatures to detect Π_t^0 at the LHC. The cross sections of other processes $pp \rightarrow \Pi_t^0 W(Z, \gamma)$ are too small to detect Π_t^0 , which open a window to distinguish the Higgs boson in the SM or MSSM from Π_t^0 .

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