

$W^{\pm}\pi_t^{\pm}$ Associated Production at Large Hadron Collider

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Abstract: In this paper we calculate the production of a charged top pion in association with a W boson at the CERN Large Hadron Collider (LHC) in the context of the topcolor assisted technicolor model. We find that the cross section of $pp \rightarrow b\bar{b} \rightarrow W^{\pm}\pi_t^{\pm}$ is roughly corresponding to the result of the process $pp \rightarrow b\bar{b} \rightarrow W^{\pm}H^{\pm}$ in the minimal supersymmetric standard model, and for reasonable ranges of the parameters, the cross section can reach a few hundred fb. The $W^{\pm}\pi_t^{\pm}$ signal should be clearly visible at LHC unless π_t^{\pm} is very heavy.

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Key words: topcolor assisted technicolor model, top pion, cross section, Large Hadron Collider

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