

Abstract Submitted
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Searching for anomalous top quark production at the early LHC¹

JUN GAO, Southern Methodist University, CHONG SHENG LI, Peking University, LI LIN YANG, University of Zurich, HAO ZHANG, Peking University — We present a detailed study of the anomalous top quark production with subsequent decay at the LHC induced by model- independent flavor-changing neutral-current couplings, incorporating the complete next-to-leading order QCD effects. Our results show that, taking into account the current limits from the Tevatron, the LHC with $\sqrt{s} = 7$ TeV may discover the anomalous coupling at 5σ level for a very low integrated luminosity of 61 pb^{-1} . The discovery potentials for the anomalous couplings at the LHC are examined in detail. We also discuss the possibility of using the charge ratio to distinguish the tug and tcg couplings.

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