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Study of top-quark decay process and new limits on Wtb anomalous couplings.

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We study new physics contributions to Wtb anomalous couplings in top-quark decay process t-> Wb at the partonic level. In particular, we compute the limits on anomalous couplings to Wtb vertex. Limits were obtained at 13 TeV LHC energy with an integrated luminosity of 36.1 fbˆ-1 and predictions for future circular colliders, namely, HL-LHC, HE-LHC and FCC-hh were given. For future colliders, the projected luminosities of 0.3 to 3 abˆ-1 at HL-LHC, 3 to 12 abˆ-1 at HE-LHC, and 10 to 30 abˆ-1 at FCC-hh were explored. We also analyze the CP-violation sensitivity for the process t-> Wb and found that the future colliders with enhanced luminosities give more promising results.

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