Studies on interference effects of flavor changing neutral currents in the top sector ($tu\gamma$, $tc\gamma$ couplings)

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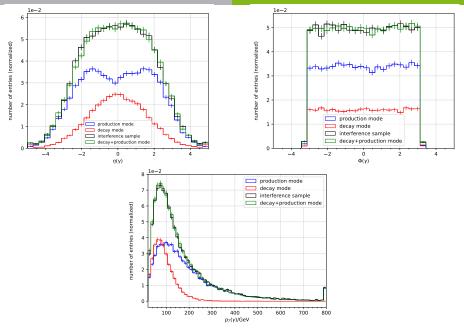


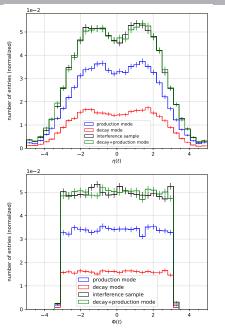
Productions:

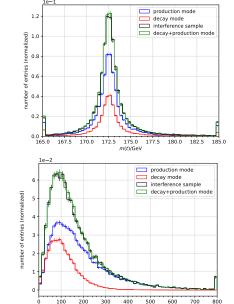
- Production mode sample: $\sigma = (22.66 \pm 0.03) \, \mathrm{pb}$
- generate p p > t a \$\$ t \sim , add p p > t u \sim a \$\$ t \sim + anti-particle processes
- Decay mode sample: $\sigma = (48.18 \pm 0.06) \, \mathrm{pb}$
- generate p p > t t \sim > w+ b a u \sim + anti-particle process
- Interference Sample: $\sigma = (70.35 \pm 0.08) \, \mathrm{pb}$
- generate p p > t a, add p p > t j \sim a + anti-particle processes
- Parameters $C_{tB} = 12$



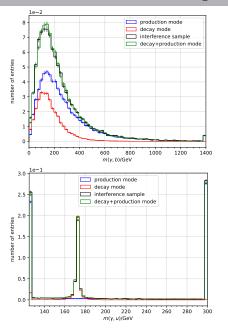
- Variables Truth:
- Photon, TopQuark ($t\rightarrow Wb$), WBoson, BQuark, Highest p_T Up Quark
 - $\triangleright p_T, \eta, \Phi, m$
- \blacksquare $\triangle R$ and invariant mass from γ, t to:
 - $\triangleright \gamma,t,u,W$
- Variables Reco:
- Photon, TopQuark, WBoson, highest p_T bJet and Jet
 - $\triangleright p_T, \eta, \Phi, m, b$
- \blacksquare $\triangle R$ and invariant mass from γ,t to:
 - $ightharpoonup \gamma$, t, Leading Jet, b Jet, W
- Cuts:
 - ▶ nPhoton > 0, nLepton > 0, $p_{T,all}$ > 20 GeV, η_{all} < 2.5, $E_{\tau}^{\text{miss}} > 20 \,\text{GeV}$, and no complex solutions for neutrino reco
 - → too many weights are zero!

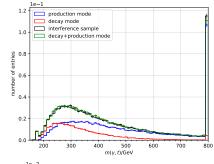


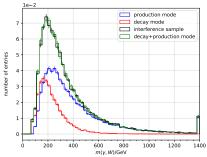


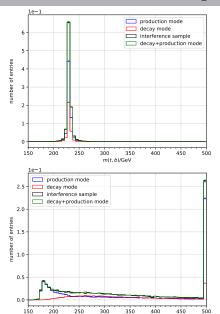


 $p_T(t)/\text{GeV}$

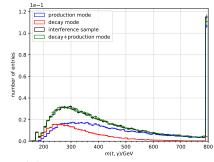


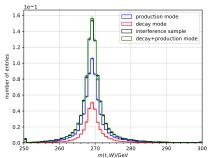




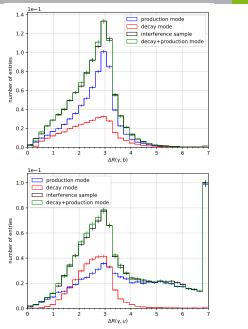


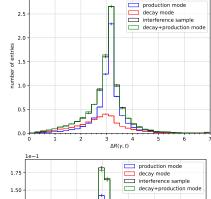
m(t, u)/GeV

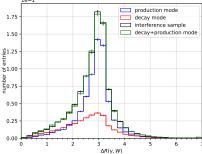


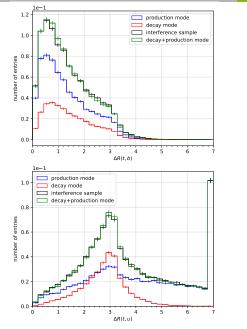


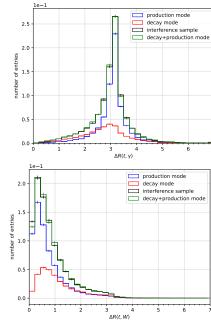
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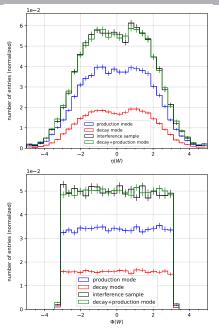


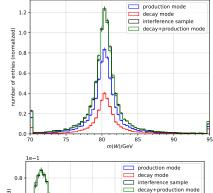


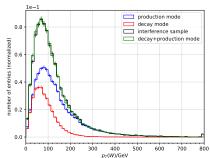


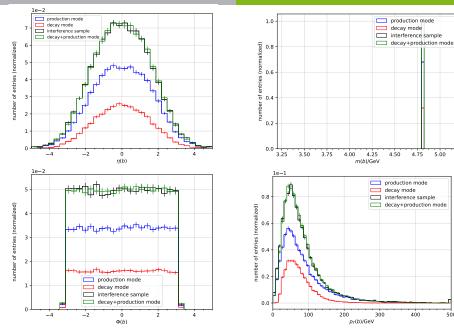




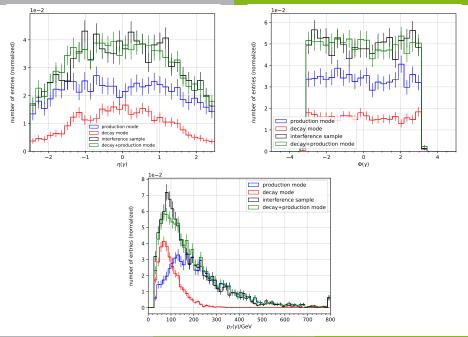


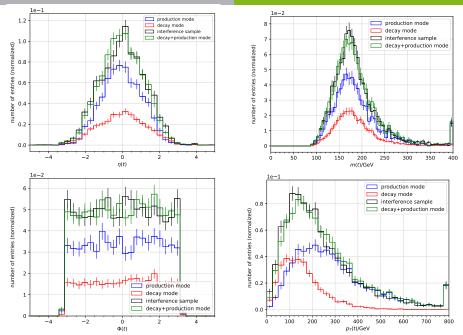


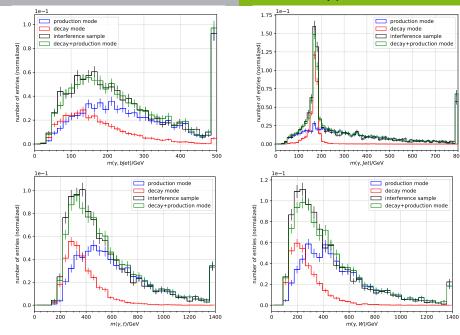




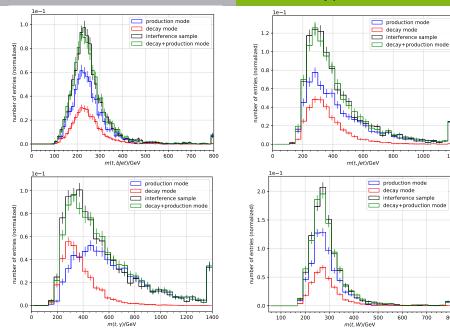
500







800



700 800

1200

