

Studies on interference effects of flavor changing neutral currents in the top sector (tu_γ, tc_γ couplings)

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Productions:

- Production mode sample:
- generate $p p \rightarrow t \bar{a}$, add $p p \rightarrow t \bar{u} \bar{a} t + \text{anti-particle processes}$
- Decay mode sample:
- generate $p p \rightarrow t \bar{t} \rightarrow t \bar{a} \bar{u} + \text{anti-particle process (causes weird TopEta behaviour)}$
- Interference Sample:
- generate $p p \rightarrow t \bar{a}$, add $p p \rightarrow t \bar{u} \bar{a} + \text{anti-particle processes}$

Creation of following plots:

- TopFCNC Model in MadGraph@NLO
- 50k Events for each generated sample
- Showering using Pythia 8
- DELPHES with ATLAS card as basic detector simulation
- Look at bJet, Photon, W Boson and Top Quark p_T , mass, η , ϕ distributions
- Including ΔR and invariant Masses of sub systems ($t_\gamma, b_\gamma, W_\gamma, \dots$)































































