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

Salvatore La Cagnina

Technische Universität Dortmund, Lehrstuhl EIV

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Productions:

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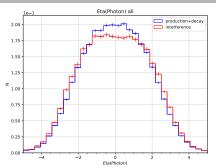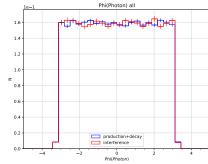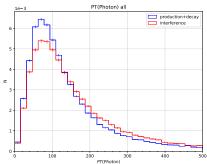- generate p p > t a, add p p > t u$\sim$ a + anti-particle processes

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 ($t\gamma$, $b\gamma$, $W\gamma$,...)

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M(TopQuark_BQuark) production

M(TopQuark_Photon) production

M(TopQuark_WBoson) production

R(Photon_BQuark) decaymode

R(Photon_TopQuark) decaymode

R(Photon_WBoson) decaymode