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:
- generate p p > t a \$\$ t$\sim$, add p p > t u a \$\$ t + anti-particle processes
- Decay mode sample:
- generate p p > t t$\sim$, t$\sim$ > a u$\sim$ (will be changed to p p > t t$\sim$ > t a u$\sim$ due to MadSpin errors)
- Interference Sample:
- generate p p > t a, add p p > t u$\sim$ a + anti-particle processes
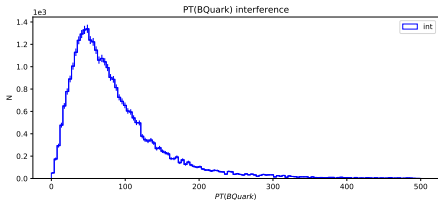
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Creation of following plots:

- TopFCNC Model in MadGraph@NLO
- 50k Events for each generated sample
- Showering using Pythia 8
- DELPHES with ATLAS card as basic detector simulation
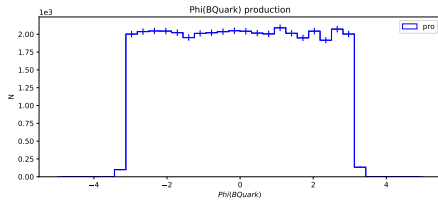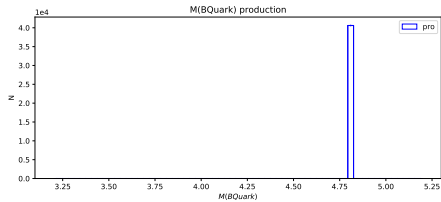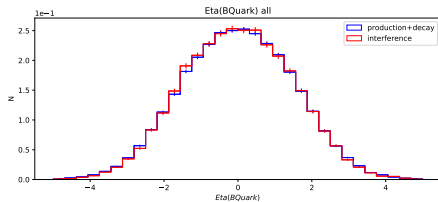- Look at bJet, Photon, W Boson and Top Quark p_T, mass, η, ϕ distributions

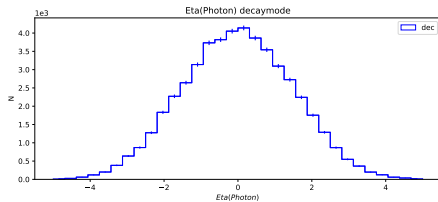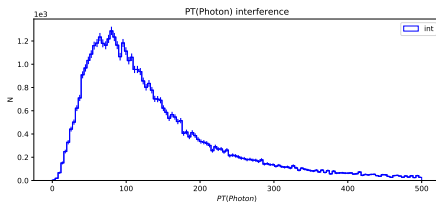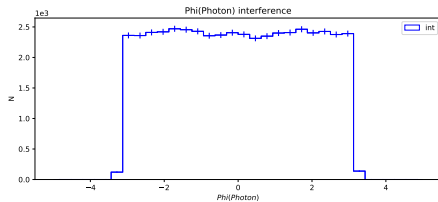technische universität dortmund
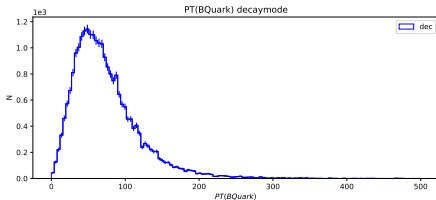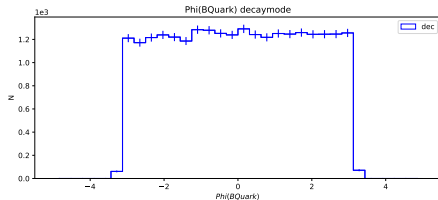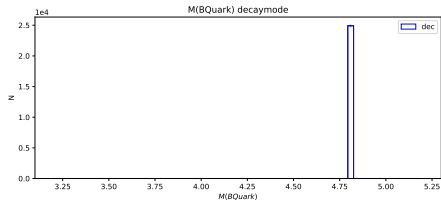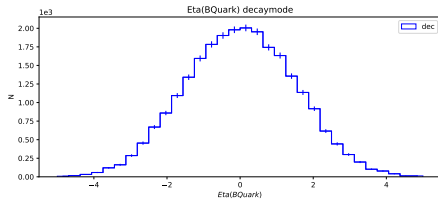
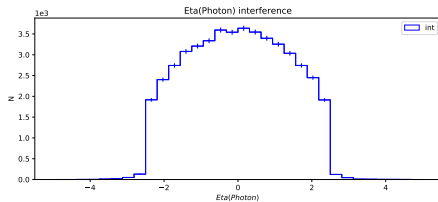# BQuark_truth
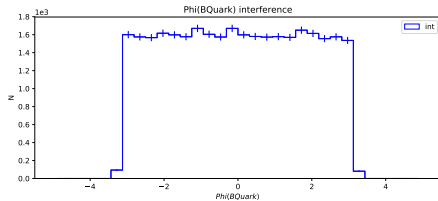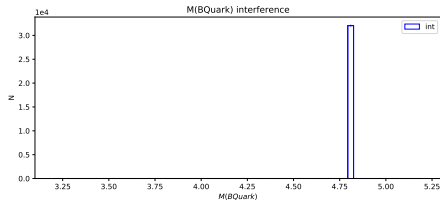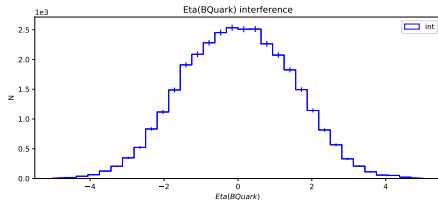
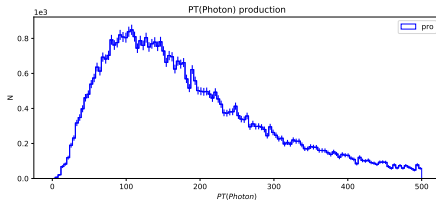# BQuark_truth
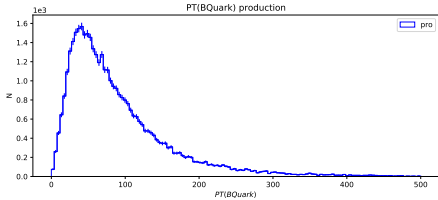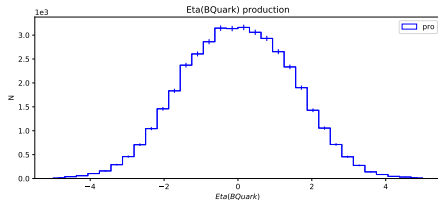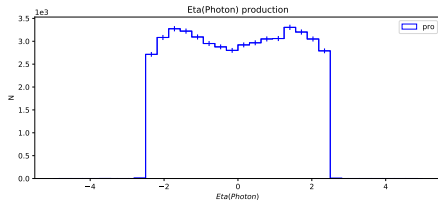
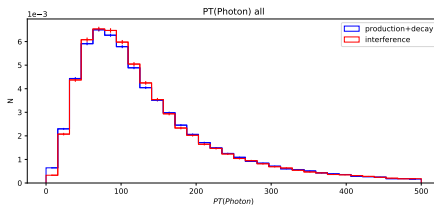# BQuark_truth

BQuark_truth interference vs. decay+production
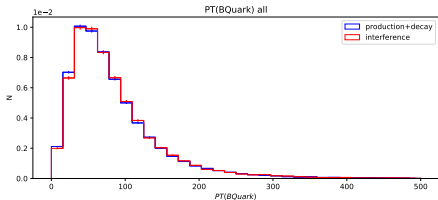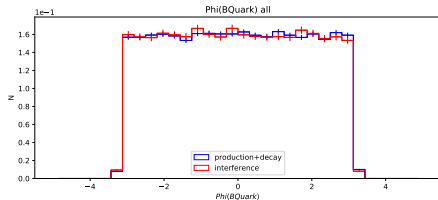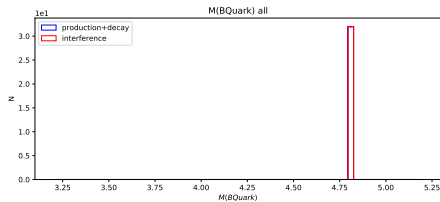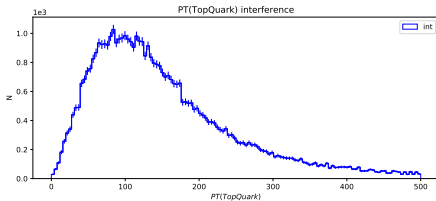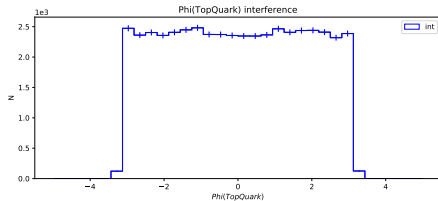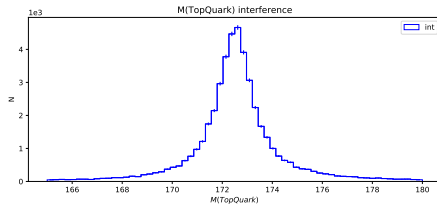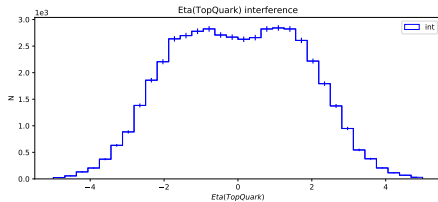
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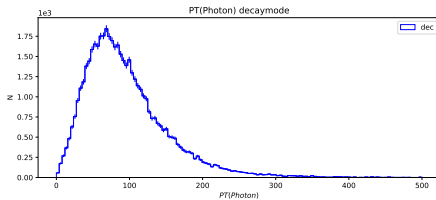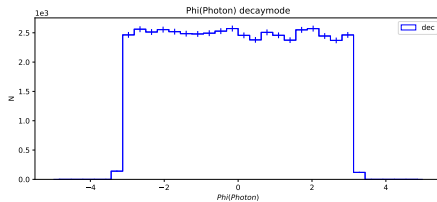
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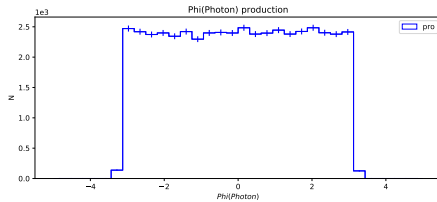
Photon_truth

Photon_truth interference vs. decay+production
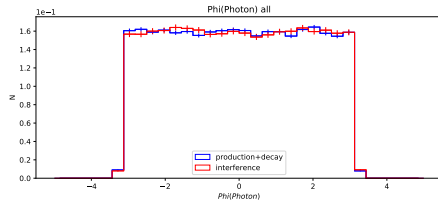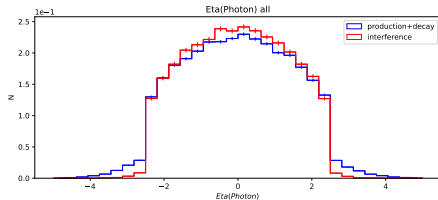
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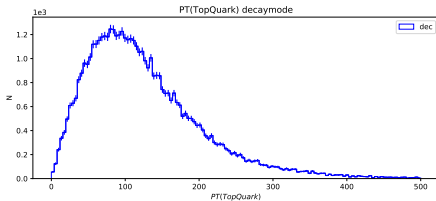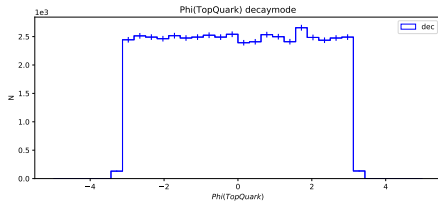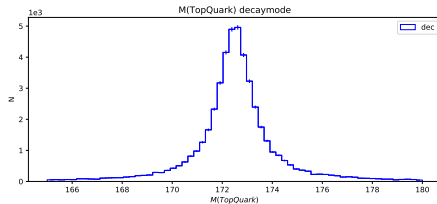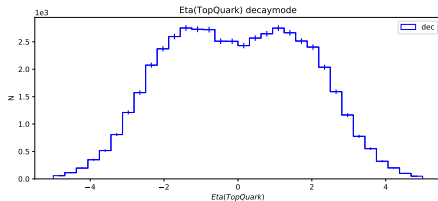
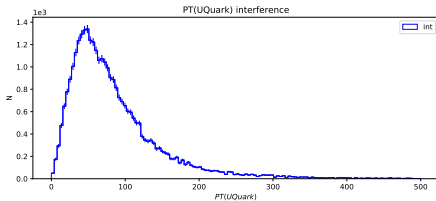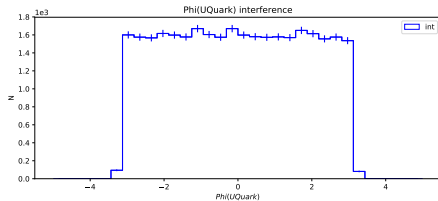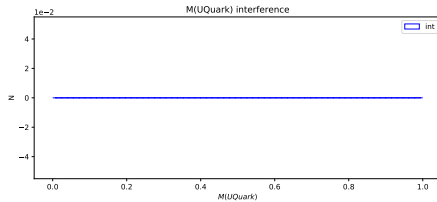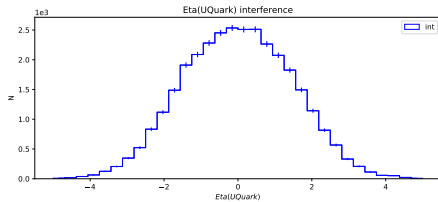# TopQuark_truth
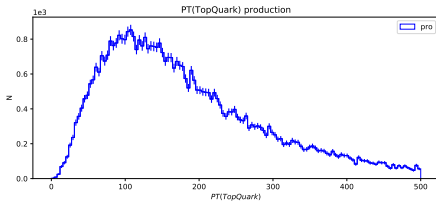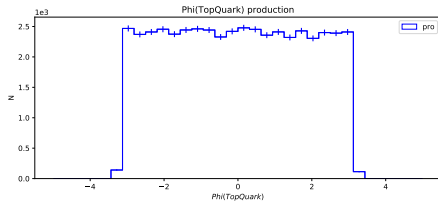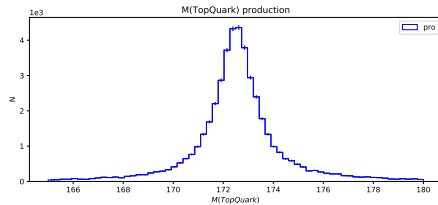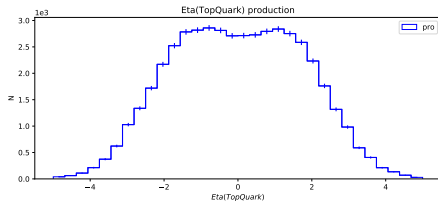
TopQuark_truth

TopQuark_truth interference vs. decay+production
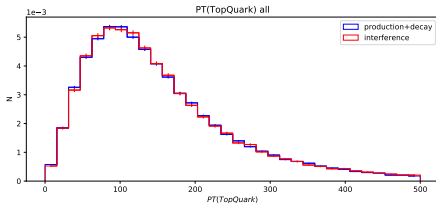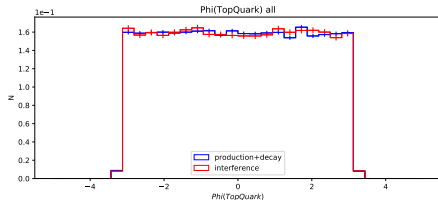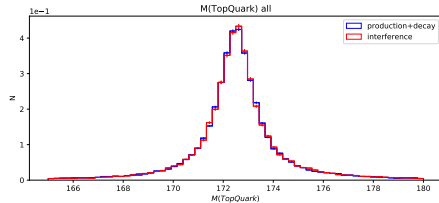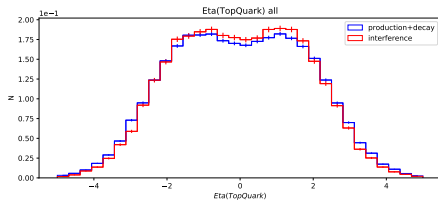
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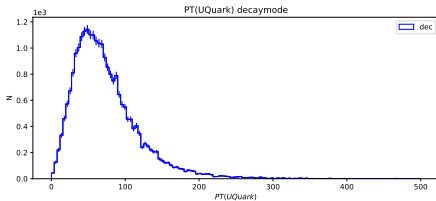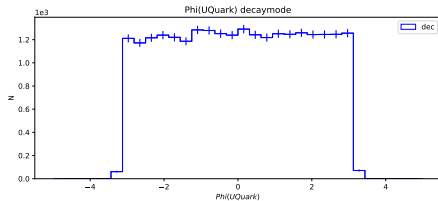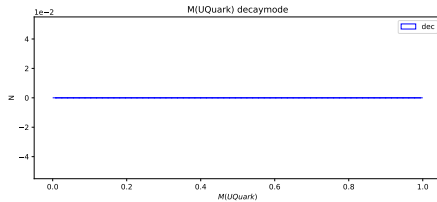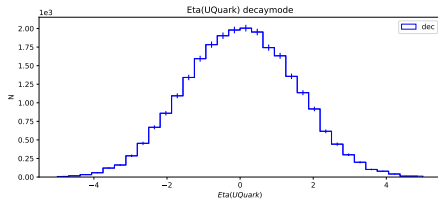
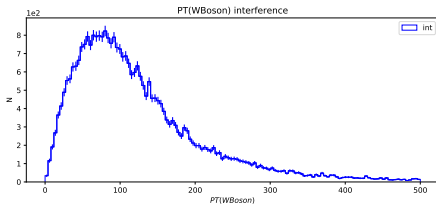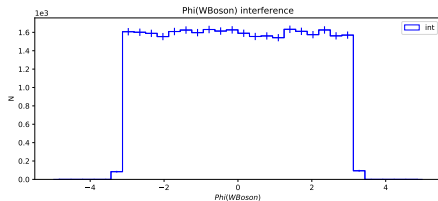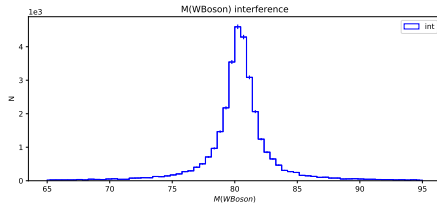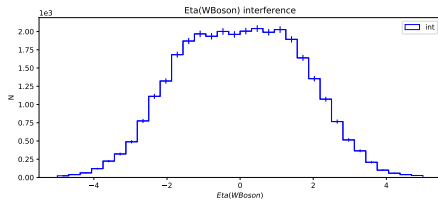# UQuark_truth
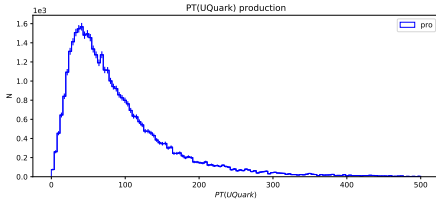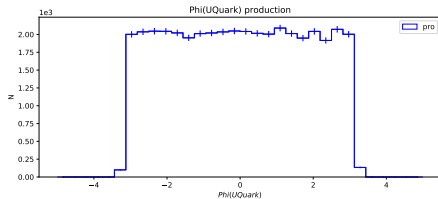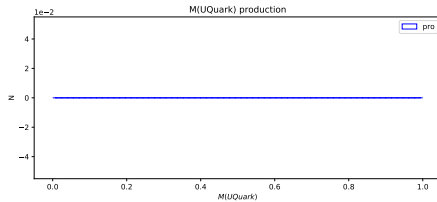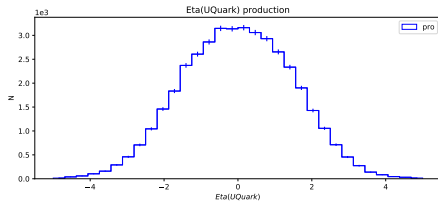
UQuark_truth

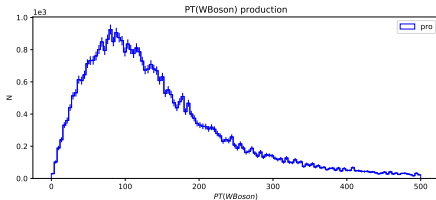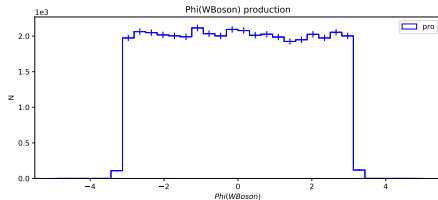# UQuark_truth interference vs. decay+production
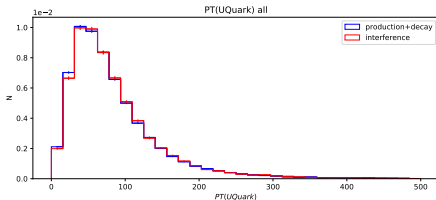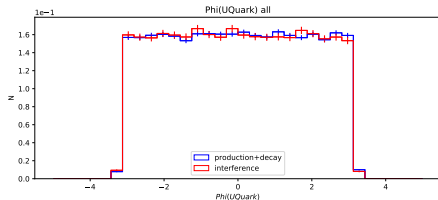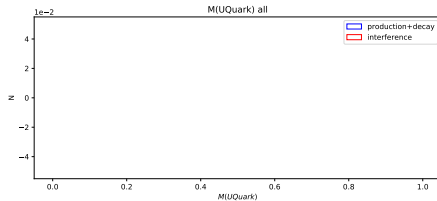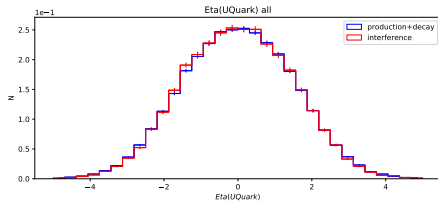
WBoson_truth
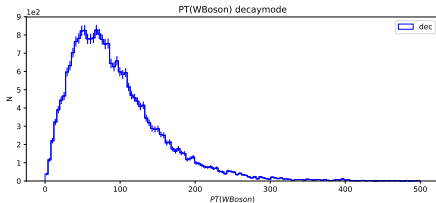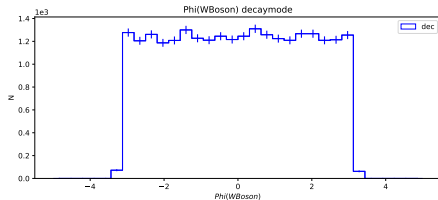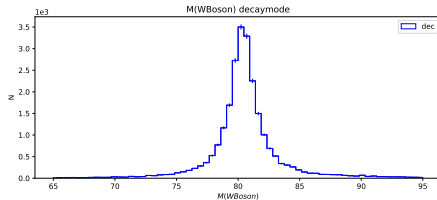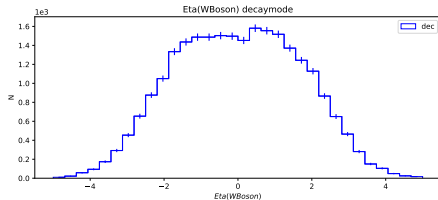
WBoson_truth

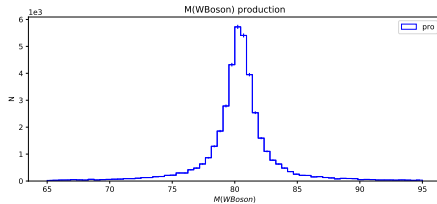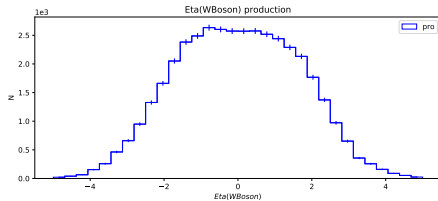# WBoson_truth

WBoson_truth interference vs. decay+production