

Muon Collider Full Simulation Studies

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Jet reconstruction for HH(bbbb) with no BIB

-Successfully produced generator level jets.

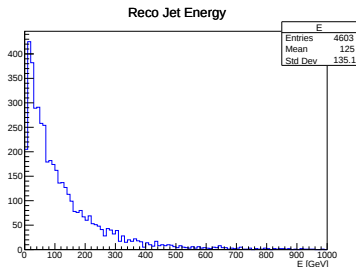
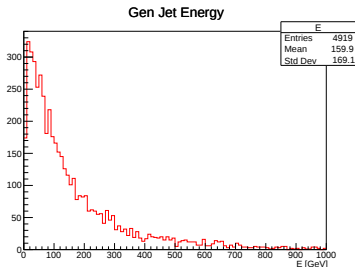
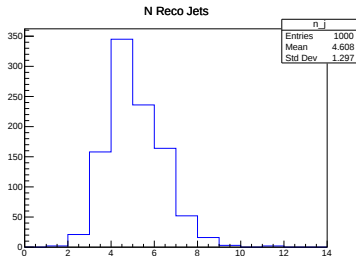
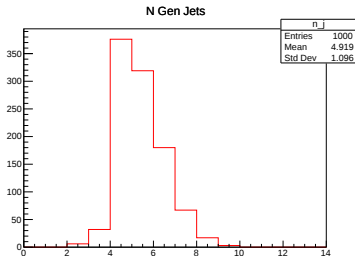
<https://github.com/MuonColliderSoft/ProductionConfig>

(Thanks to Lorenzo for configuration file.)

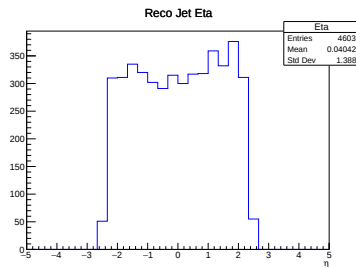
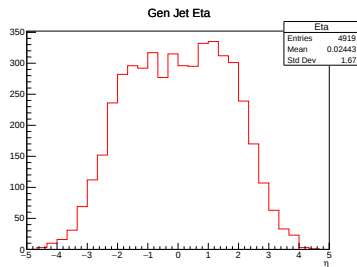
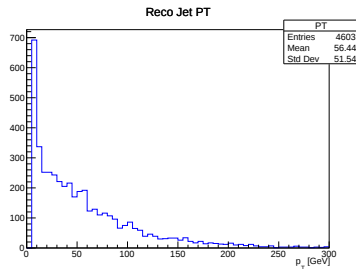
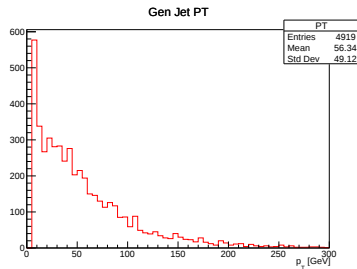
- Kinematic comparison of **generator level** and **reconstructed jets**.

Jet reconstruction for HH(bbbb) with no BIB

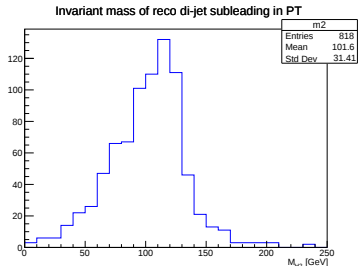
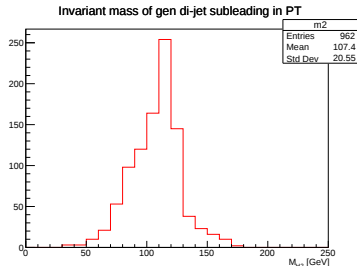
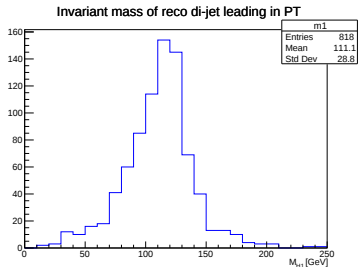
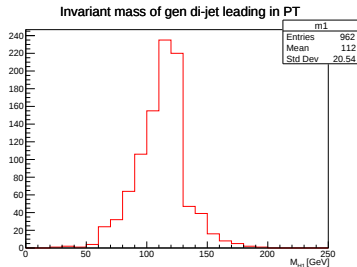
k_T algorithm with $R=0.5$



Jet reconstruction for HH(bbbb) with no BIB

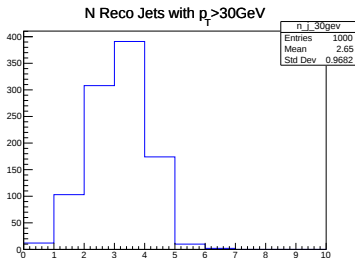
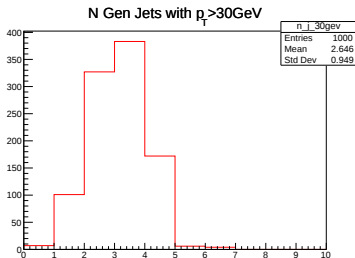
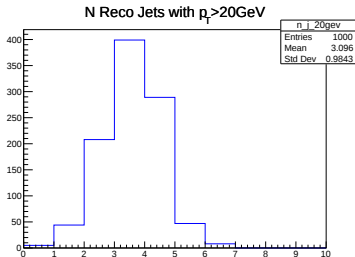
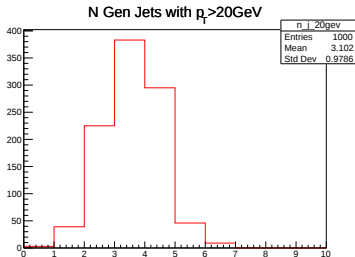


Jet reconstruction for HH(bbbb) with no BIB



Jet reconstruction for HH(bbbb) with no BIB

Jet acceptance selection: $p_T > 20\text{GeV}$ (30GeV) and $15 < \theta < 165$



Status and next steps

- Good agreement between gen and reco jets.
- Working on generating events with full BIB on Condor; running into infinite loop. Works fine interactively.
(Works for smaller BIB fraction, but not larger ones on Condor)
- Testing new configuration files with full BIB, working on debugging
(works fine with no BIB, some error with full BIB)