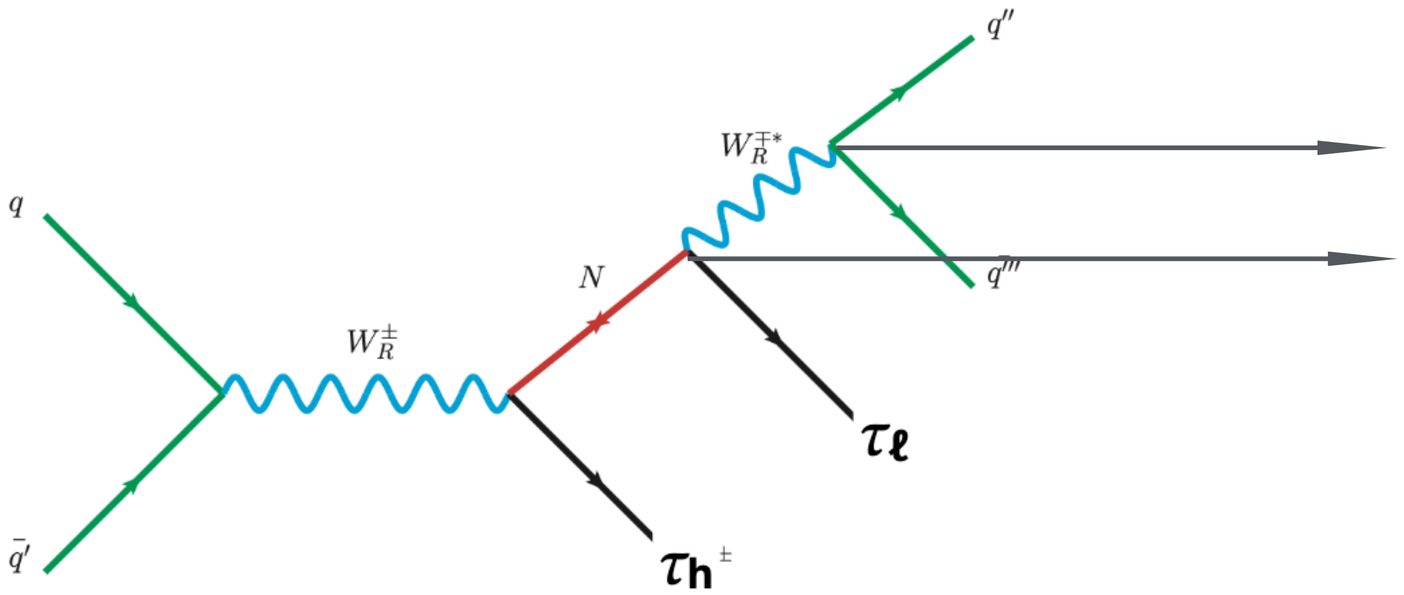
Genlevel W_R & N reconstruction for Leptonic τ decay to e/μ

Chihwan.An. 2025.02.03

N reconstruction



GenJet (AK4)
Leading,Subleading

$p_T > 40$, $|\eta| < 2.1$

\+

Cleaning (lepton not inside Jet)

\+

Cleaning (tau not inside Jet)

\+

Electron / Muon
Leading

N reco by AK4

GenJetAK8
Leading

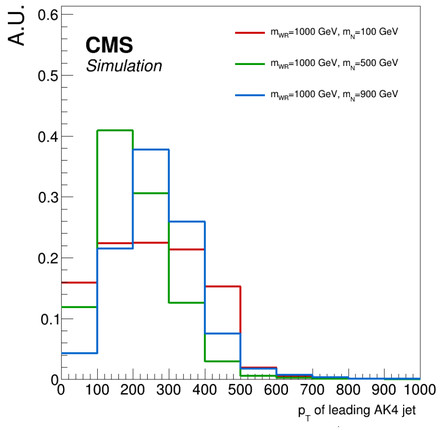
$p_T > 200$, $|\eta| < 2.4$

\+

Cleaning (tau not inside Jet)

N reco by AK8

Mass & p_T disrtribution for AK4 Jets & N



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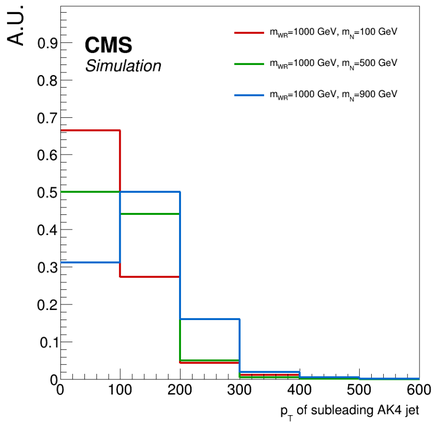

+

Electron / Muon
Leading

GenJet (AK4)
Leading,Subleading

$p_T > 40$, $|\eta| < 2.1$

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Cleaning (lepton not inside Jet)

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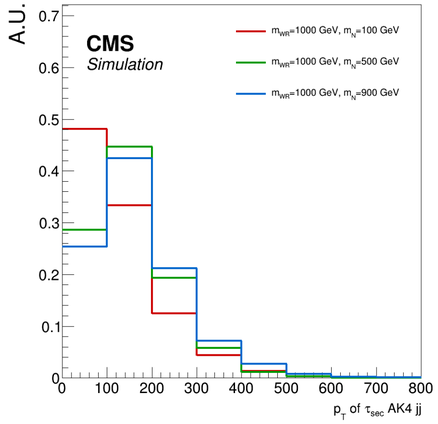
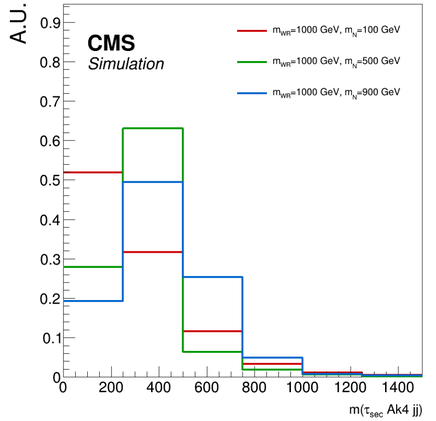
Cleaning (tau not inside Jet)

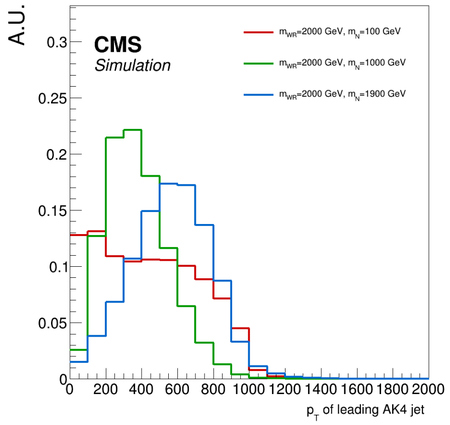




N reco by AK4

Sample : W_R 1000 GeV (N100 , N500 , N900)

Mass & p_T disrtribution for AK4 Jets & N



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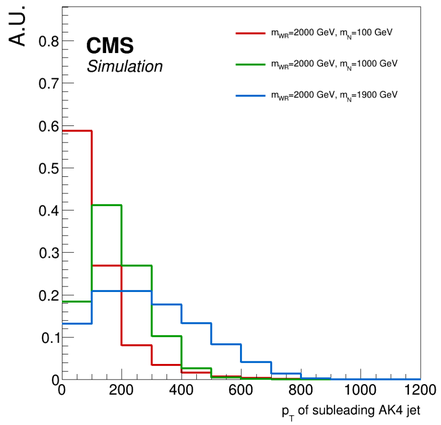


+

Electron / Muon
Leading

GenJet (AK4)
Leading,Subleading

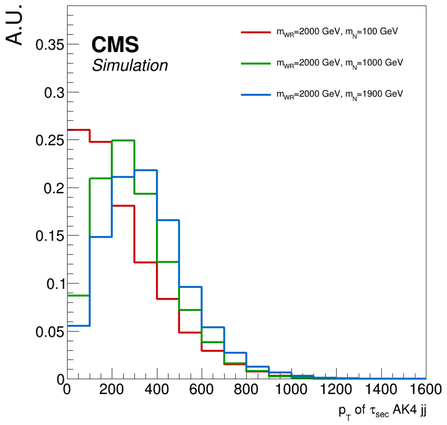
$p_T > 40$, $|\eta| < 2.1$

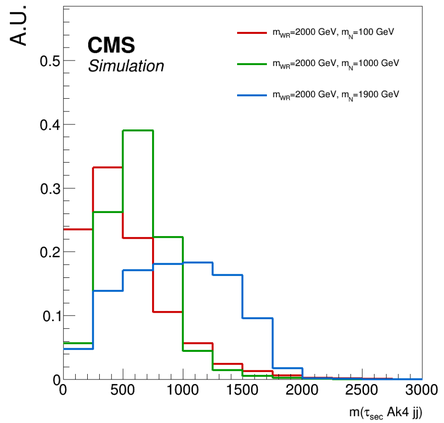
+

Cleaning (lepton not inside Jet)

+

Cleaning (tau not inside Jet)

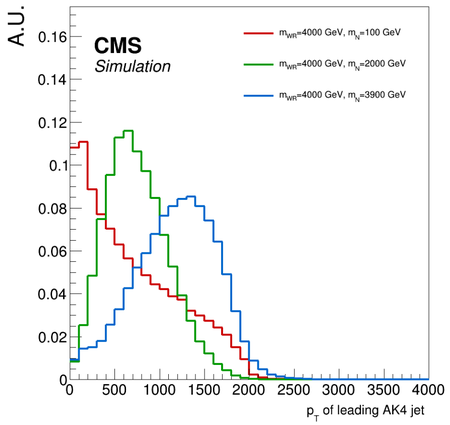




N reco by AK4

Sample : W_R 2000 GeV (N100 , N1000 , N1900)

Mass & p_T disrtribution for AK4 Jets & N



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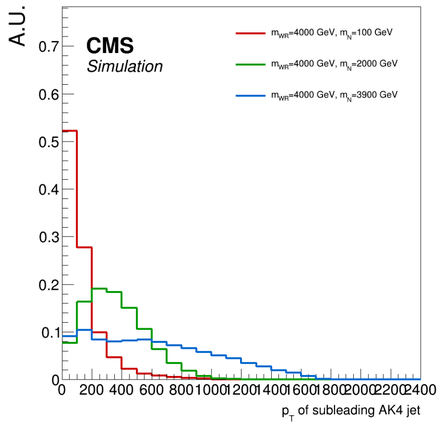


+

Electron / Muon
Leading

GenJet (AK4)
Leading,Subleading

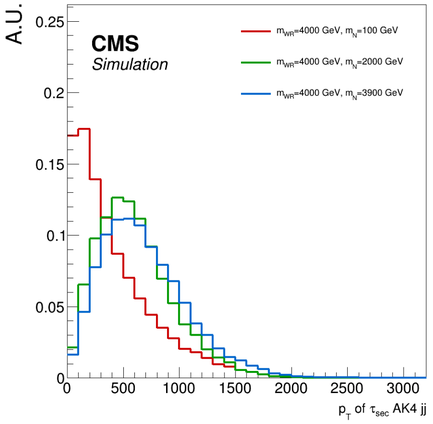
$p_T > 40$, $|\eta| < 2.1$

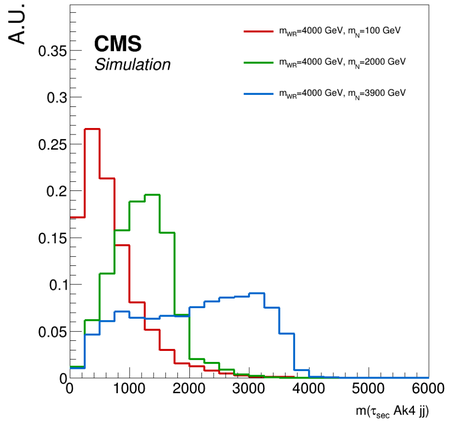
+

Cleaning (lepton not inside Jet)

+

Cleaning (tau not inside Jet)

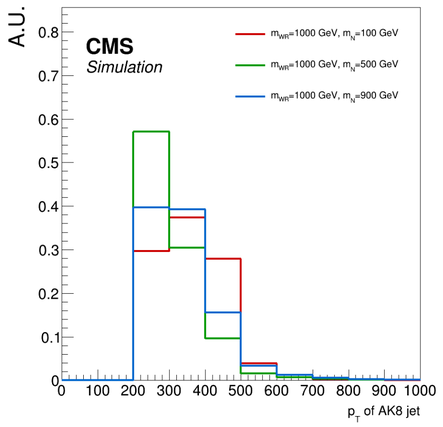




N reco by AK4

Sample : W_R 4000 GeV (N100 , N2000 , N3900)

Mass & p_T disrtribution for AK8 Jets & N

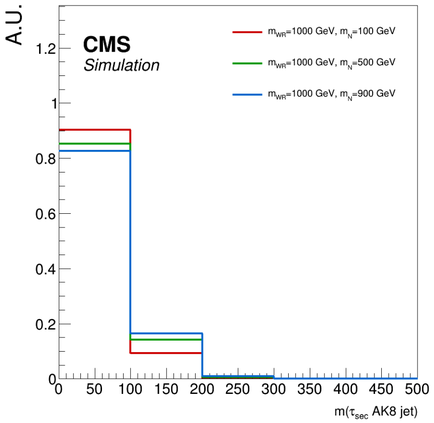


GenJetAK8
Leading

$p_T > 200$, $|\eta| < 2.4$

+

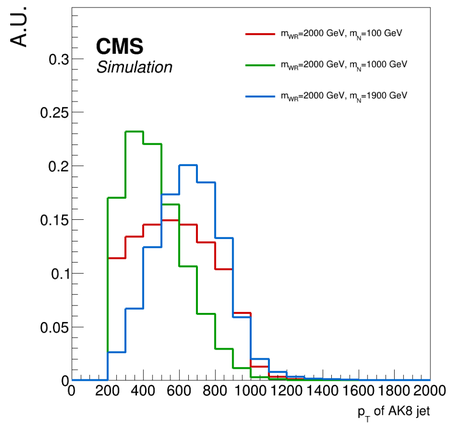
Cleaning (tau not inside Jet)

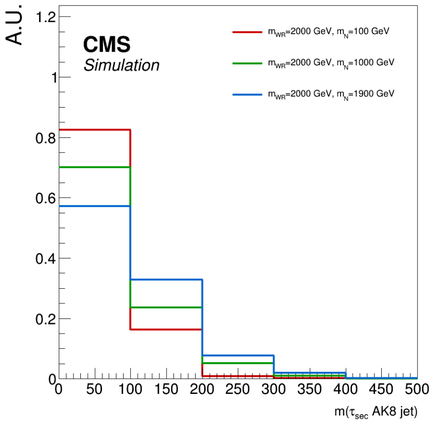


N reco by AK8

Sample : W_R 1000 GeV (N100 , N500 , N900)

Mass & p_T disrtribution for AK8 Jets & N





GenJetAK8
Leading

$p_T > 200$, $|\eta| < 2.4$

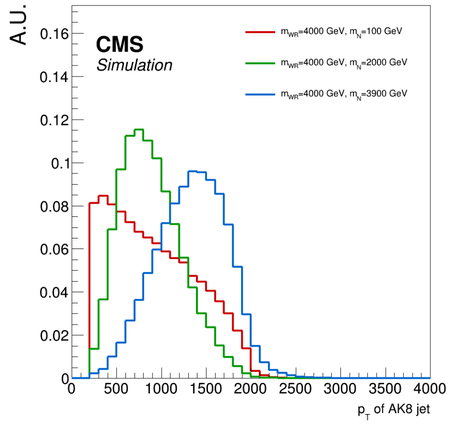
+

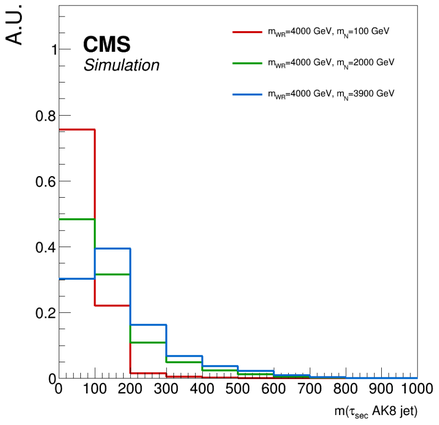
Cleaning (tau not inside Jet)

N reco by AK8

Sample : W_R 2000 GeV (N100 , N1000 , N1900)

Mass & p_T disrtribution for AK8 Jets & N





GenJetAK8
Leading

$p_T > 200$, $|\eta| < 2.4$

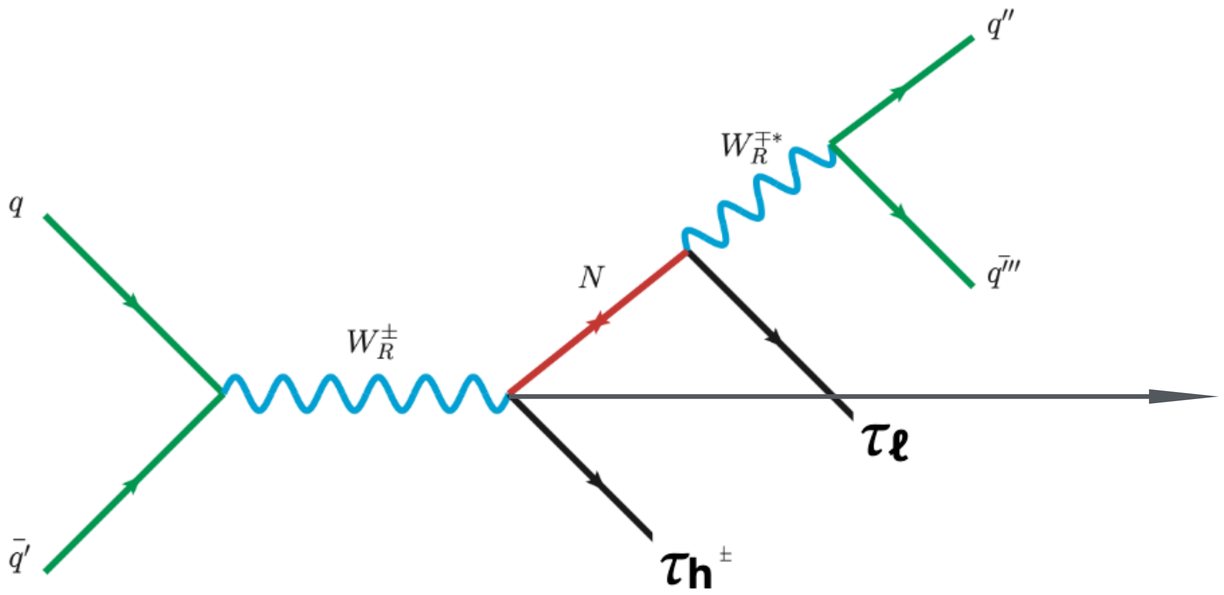
+

Cleaning (tau not inside Jet)

N reco by AK8

Sample : W_R 4000 GeV (N100 , N2000 , N3900)

W_R reconstruction



GenJet (AK4)
Leading,Subleading

$p_T > 40$, $|\eta| < 2.1$

+

Cleaning (lepton not inside Jet)

+

Cleaning (tau not inside Jet)

+

Electron / Muon
Leading

N reco by AK4

GenJetAK8
Leading

$p_T > 200$, $|\eta| < 2.4$

+

Cleaning (tau not inside Jet)

N reco by AK8

+

Hadronic Tau (GenVisTau)
Leading

$p_T > 40$, $|\eta| < 2.1$

W_R reco by AK4

W_R reco by AK8

Mass & p_T disrtribution for W_R (Ak4 Jet)

GenJet (AK4)
Leading,Subleading

$p_T > 40$, $|\eta| < 2.1$

+

Cleaning (lepton not inside Jet)

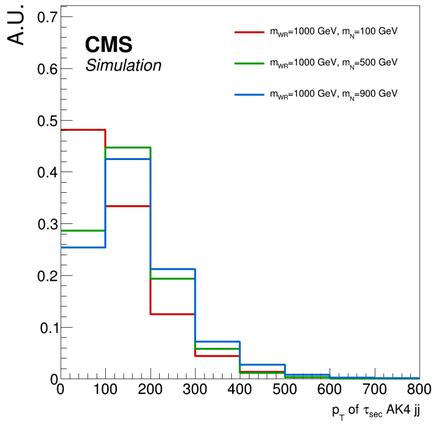
+

Cleaning (tau not inside Jet)

+

Electron / Muon
Leading

N reco by AK4



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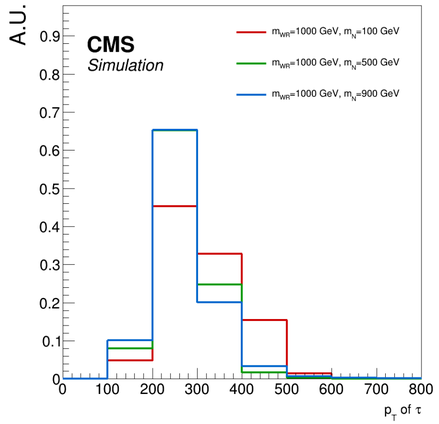
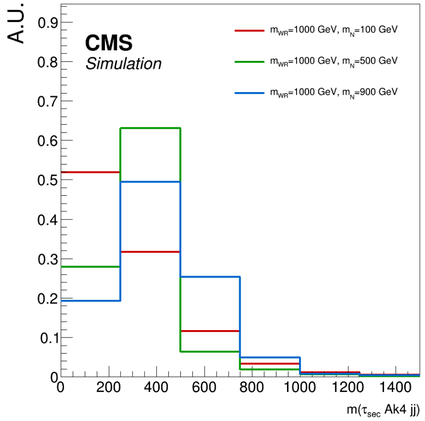
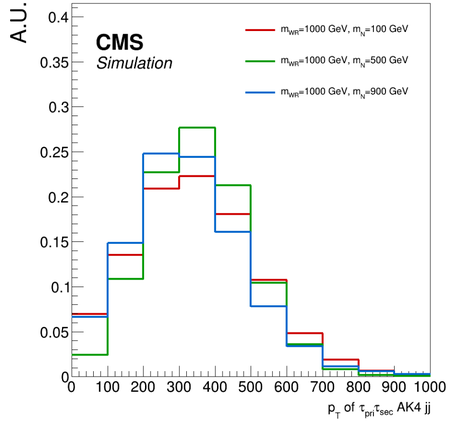
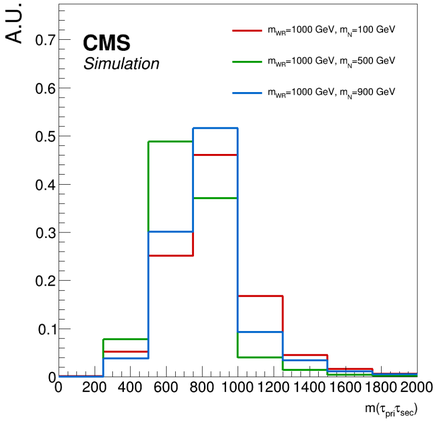


Hadronic Tau (GenVisTau)
Leading







W_R reco by AK4

Sample : W_R 1000 GeV (N100 , N500 , N900)

Mass & p_T disrtribution for W_R (Ak4 Jet)

GenJet (AK4)
Leading,Subleading

$p_T > 40$, $|\eta| < 2.1$

+

Cleaning (lepton not inside Jet)

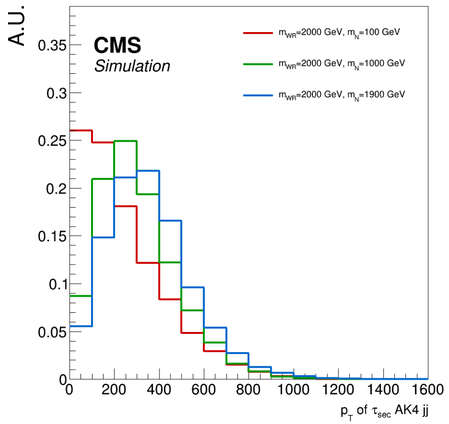
+

Cleaning (tau not inside Jet)

+

Electron / Muon
Leading

N reco by AK4



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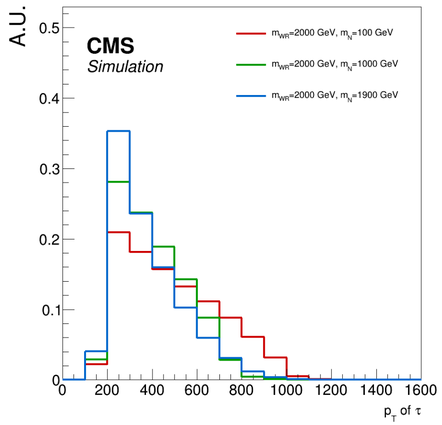
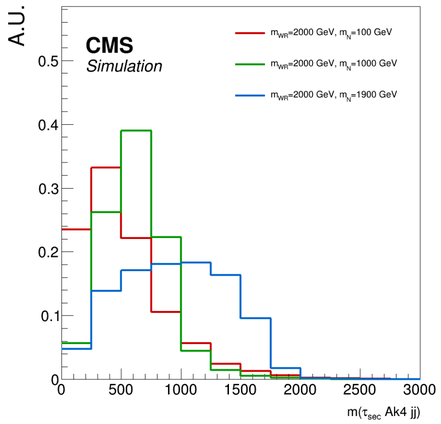
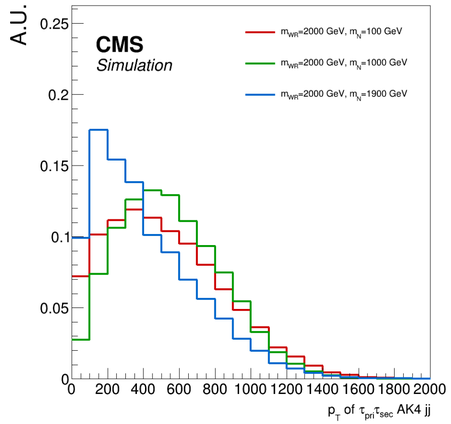
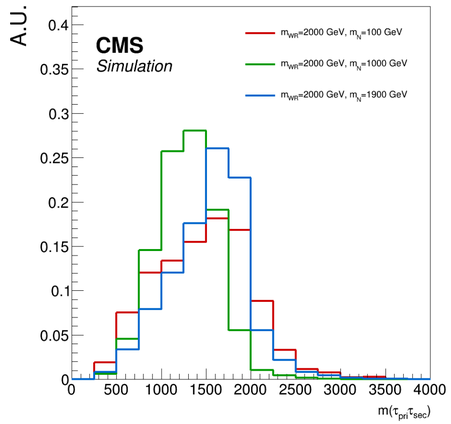


Hadronic Tau (GenVisTau)
Leading







W_R reco by AK4

Sample : W_R 2000 GeV (N100 , N1000 , N1900)

Mass & p_T disrtribution for W_R (Ak4 Jet)

GenJet (AK4)
Leading,Subleading

$p_T > 40$, $|\eta| < 2.1$

+

Cleaning (lepton not inside Jet)

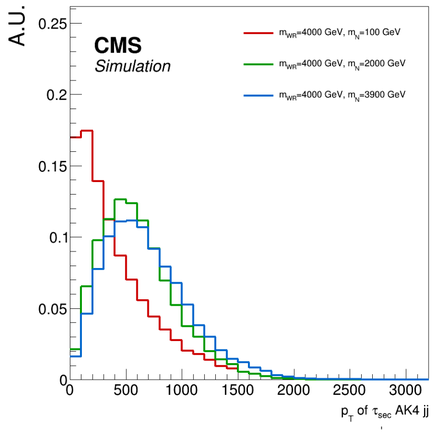
+

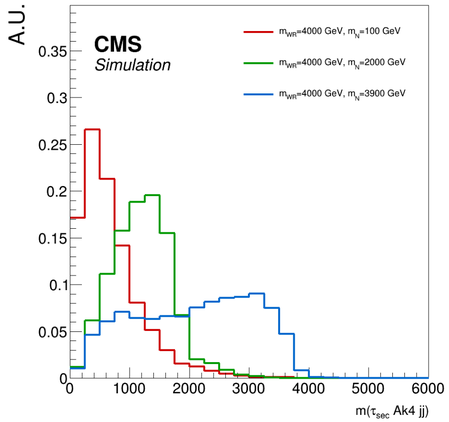
Cleaning (tau not inside Jet)

+

Electron / Muon
Leading

N reco by AK4





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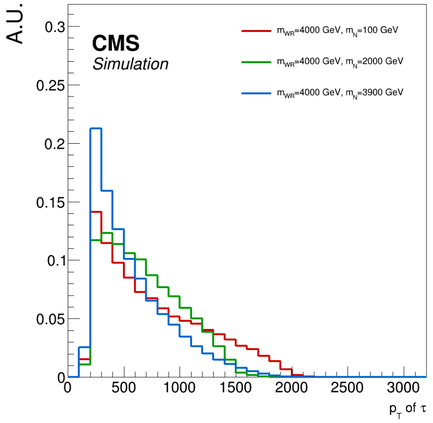
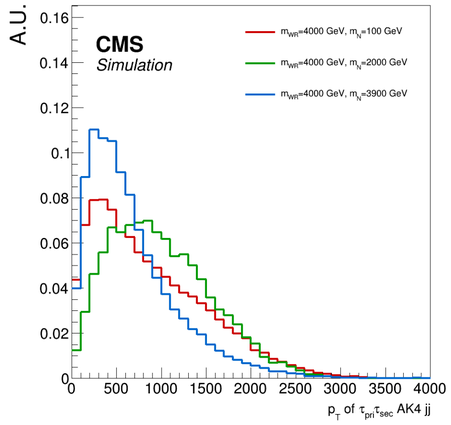
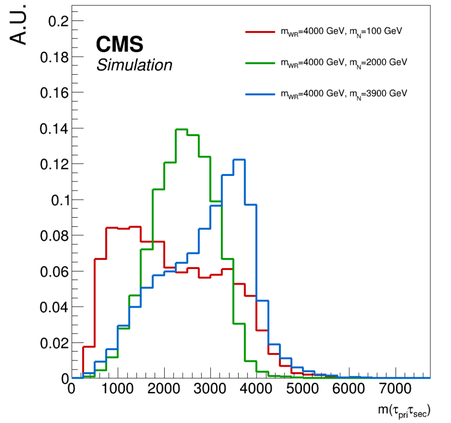


Hadronic Tau (GenVisTau)
Leading





W_R reco by AK4

Sample : W_R 4000 GeV (N100 , N2000 , N3900)

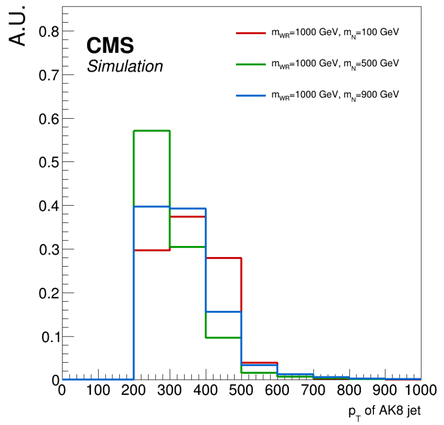
Mass & p_T disrtribution for W_R (Ak8 Jet)

GenJetAK8
Leading

$p_T > 200$, $|\eta| < 2.4$

+

Cleaning (tau not inside Jet)



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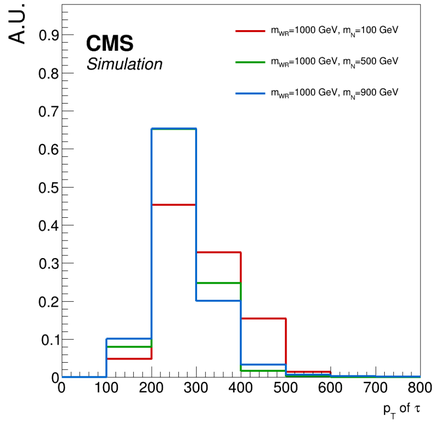
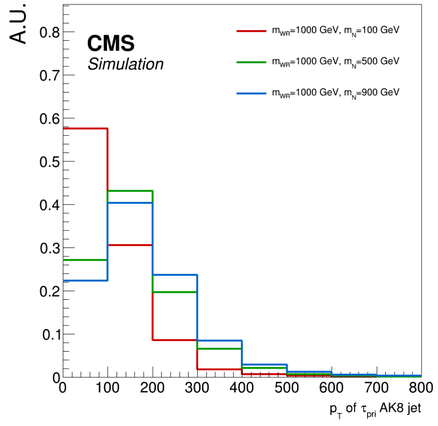
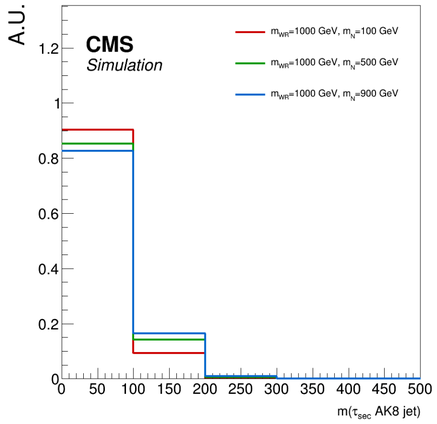
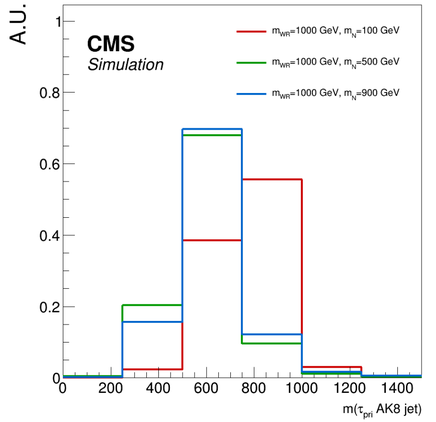




N reco by AK8



Hadronic Tau (GenVisTau)
Leading



W_R reco by AK8

Sample : W_R 1000 GeV (N100 , N500 , N900)

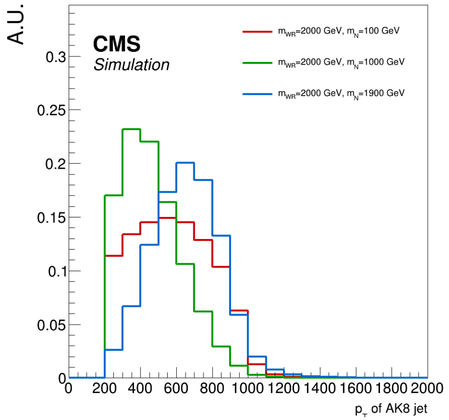
Mass & p_T disrtribution for W_R (Ak8 Jet)

GenJetAK8
Leading

$p_T > 200$, $|\eta| < 2.4$

+

Cleaning (tau not inside Jet)



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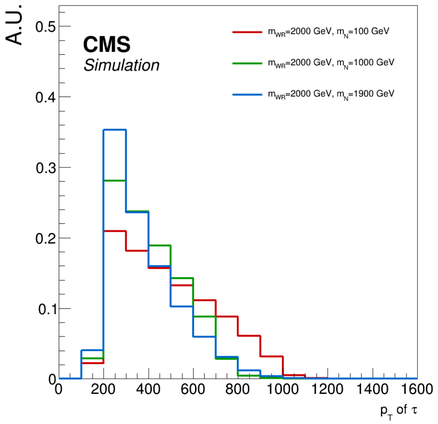
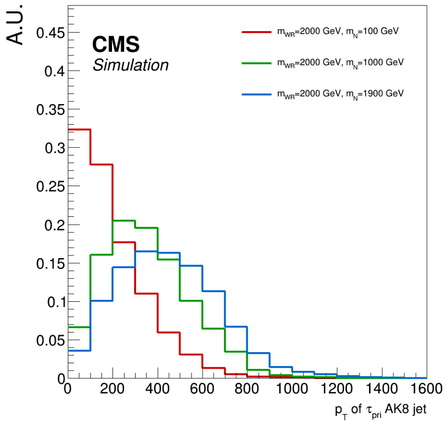
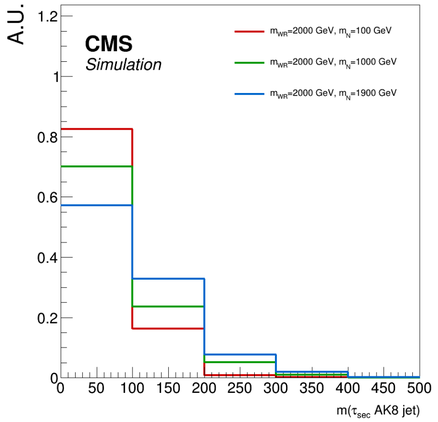
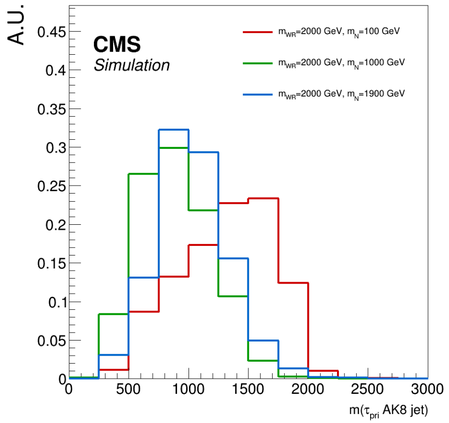




N reco by AK8



Hadronic Tau (GenVisTau)
Leading



W_R reco by AK8

Sample : W_R 2000 GeV (N100 , N1000 , N1900)

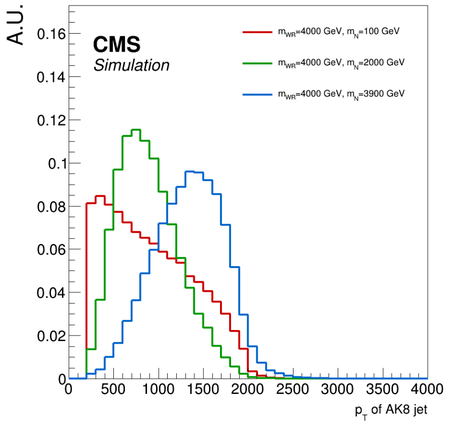
Mass & p_T disrtribution for W_R (Ak8 Jet)

GenJetAK8
Leading

$p_T > 200$, $|\eta| < 2.4$

+

Cleaning (tau not inside Jet)



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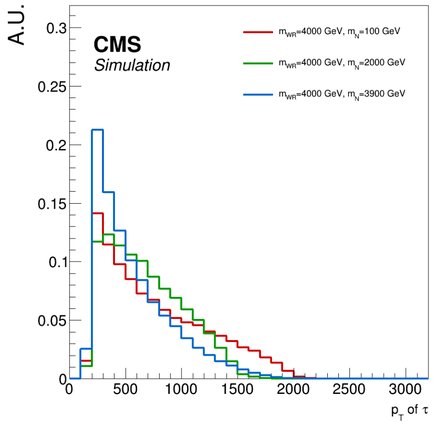
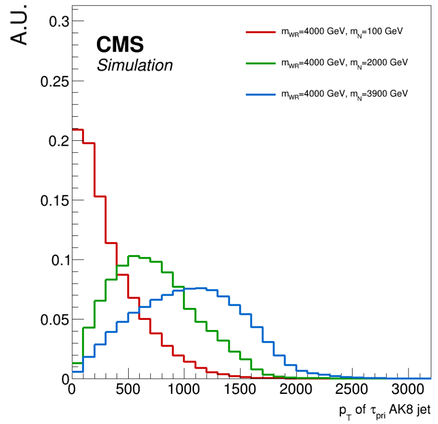
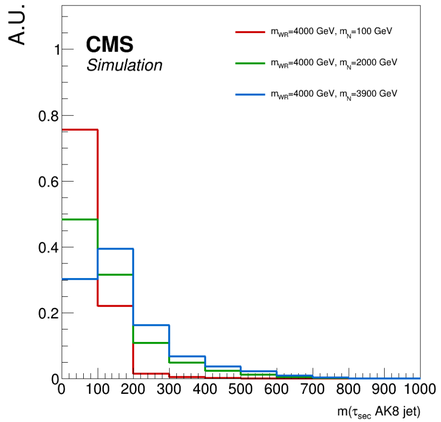
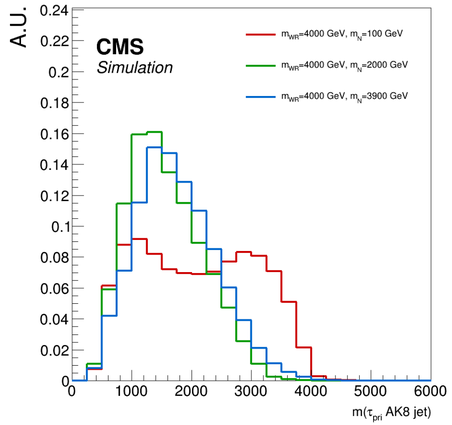




N reco by AK8



Hadronic Tau (GenVisTau)
Leading



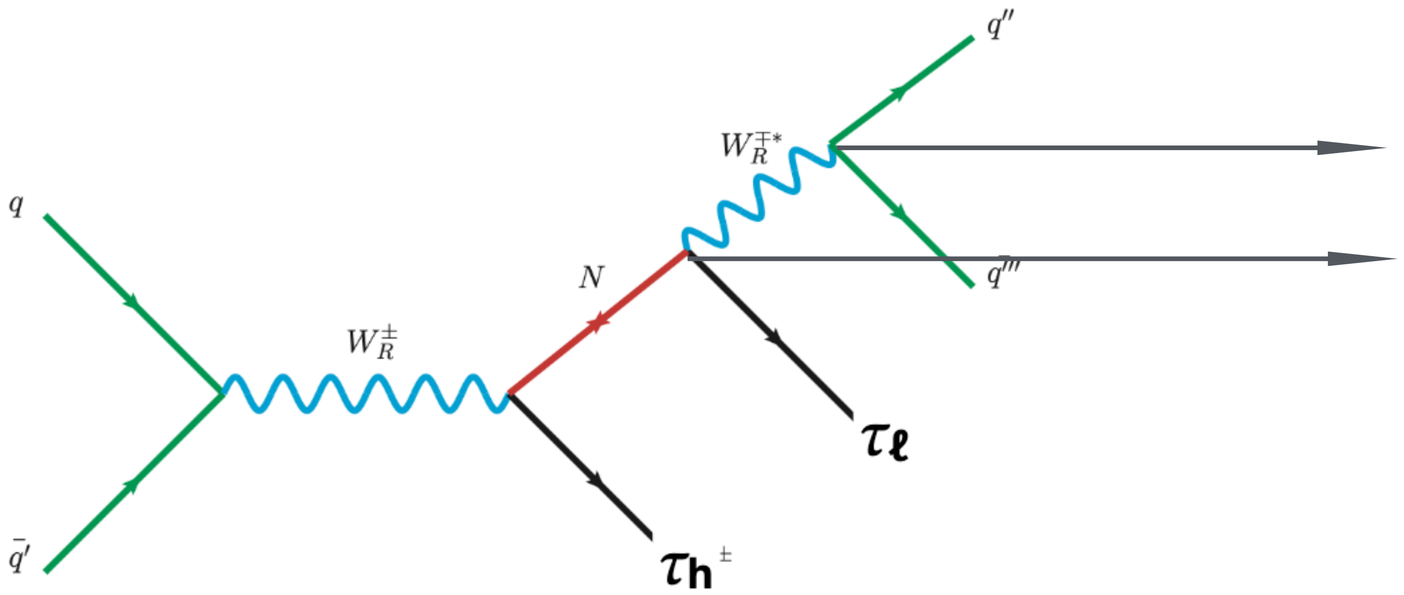
W_R reco by AK8

Sample : W_R 4000 GeV (N100 , N2000 , N3900)

Back Up

Leptonic secondary tau -> not using e/mu , using tau from N (hadronic tau)

N reconstruction



GenJet (AK4)
Leading,Subleading

$p_T > 40$, $|\eta| < 2.1$

+

Cleaning (lepton not inside Jet)

GenJetAK8
Leading

$p_T > 200$, $|\eta| < 2.4$

+

Cleaning (tau not inside Jet)

+

Cleaning (tau not inside Jet)

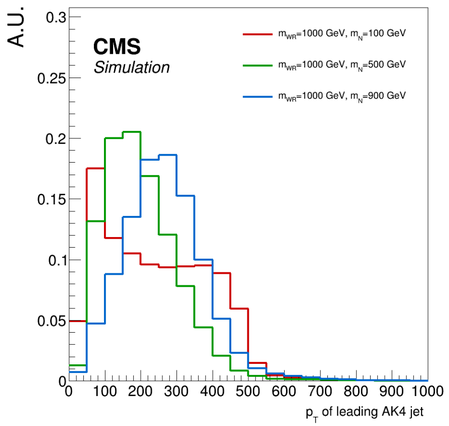
+

Tau from N
Leading

N reco by AK4

N reco by AK8

Mass & p_T disrtribution for AK4 Jets & N



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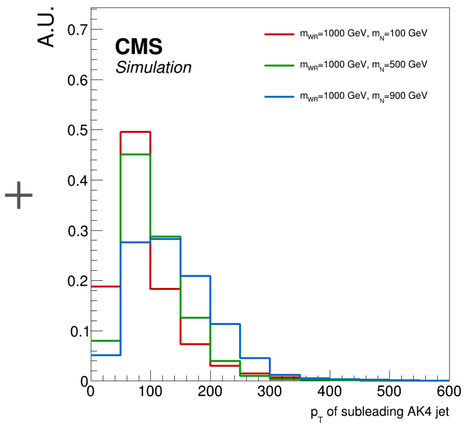

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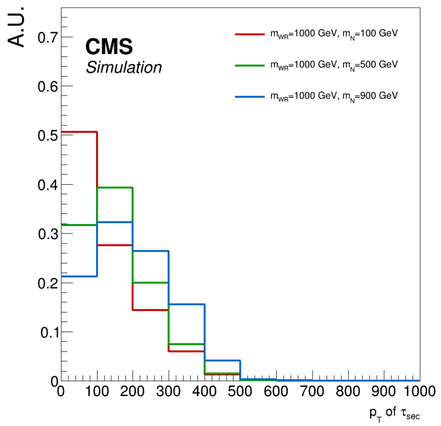
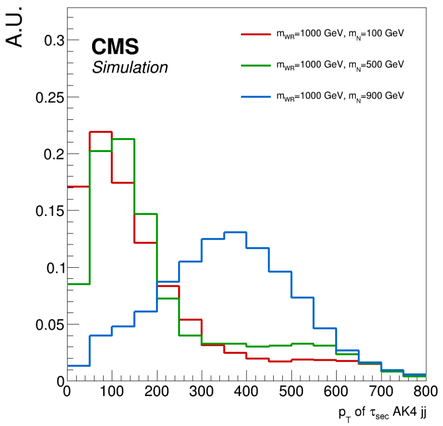
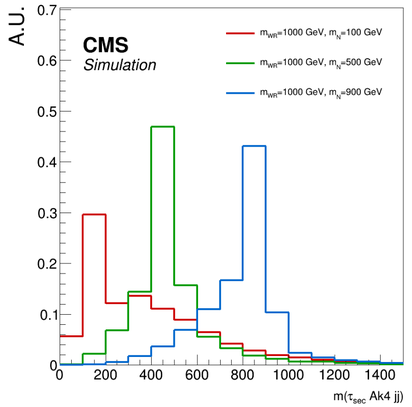






N reco by AK4

GenJet (AK4)
Leading,Subleading

$p_T > 40$, $|\eta| < 2.1$

+

Cleaning (lepton not inside Jet)

+

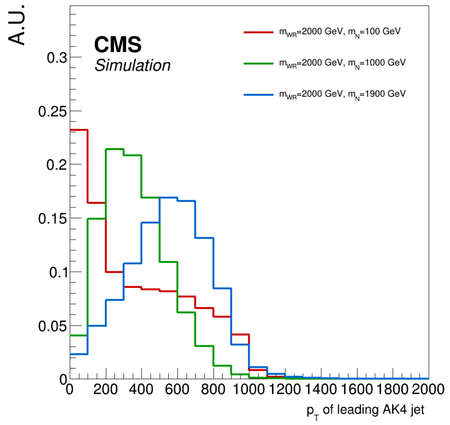
Cleaning (tau not inside Jet)

+

Tau from N
Leading

Sample : W_R 1000 GeV (N100 , N500 , N900)

Mass & p_T disrtribution for AK4 Jets & N



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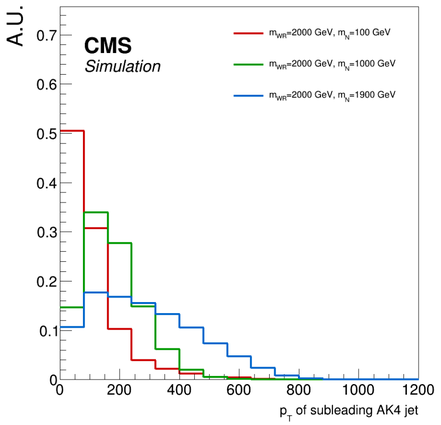

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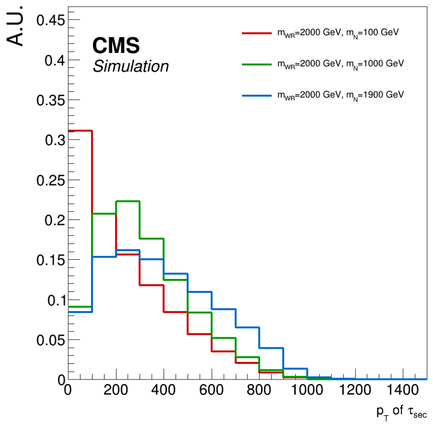
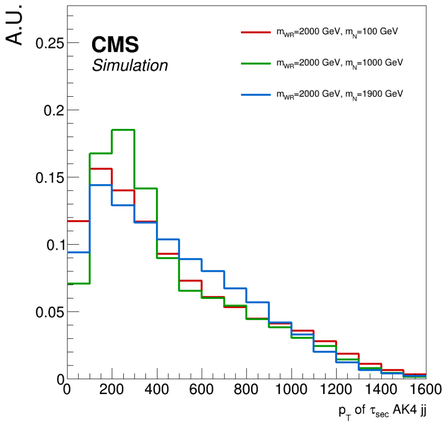




GenJet (AK4)
Leading,Subleading

$p_T > 40$, $|\eta| < 2.1$

+

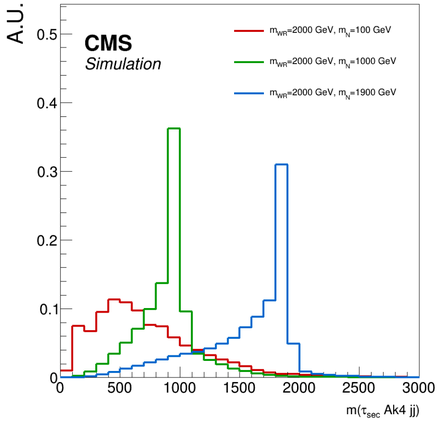
Cleaning (lepton not inside Jet)

+

Cleaning (tau not inside Jet)

+

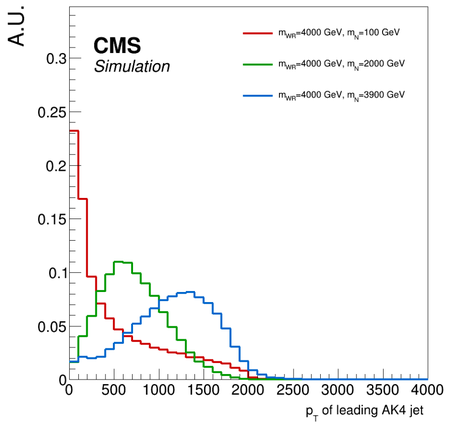
Tau from N
Leading



N reco by AK4

Sample : W_R 2000 GeV (N100 , N1000 , N1900)

Mass & p_T disrtribution for AK4 Jets & N



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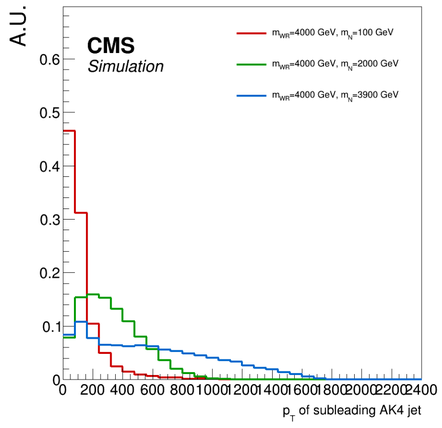

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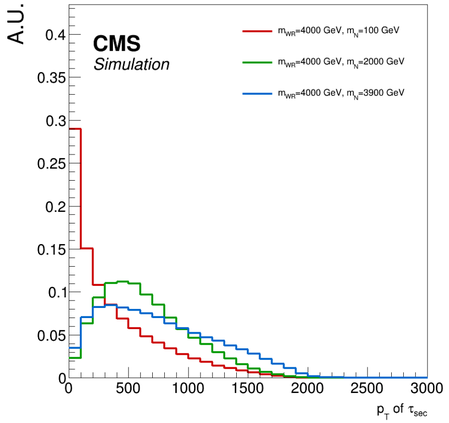
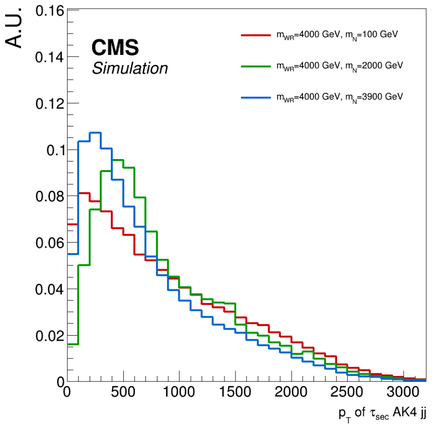




GenJet (AK4)
Leading,Subleading

$p_T > 40$, $|\eta| < 2.1$

+

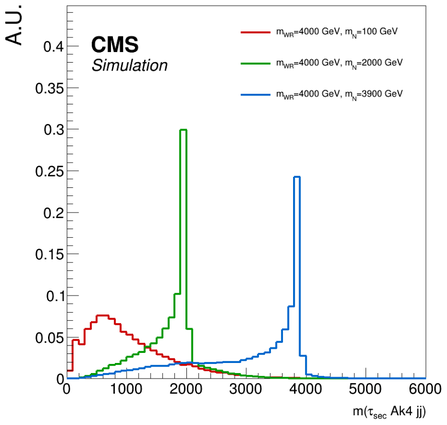
Cleaning (lepton not inside Jet)

+

Cleaning (tau not inside Jet)

+

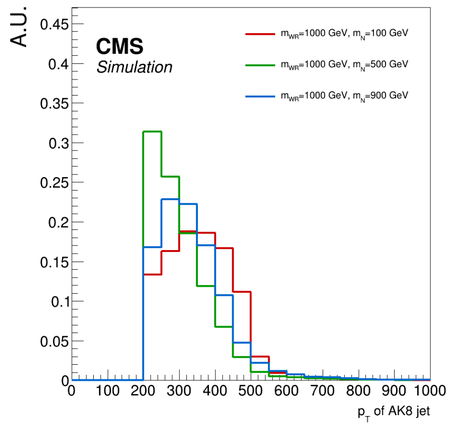
Tau from N
Leading



N reco by AK4

Sample : W_R 4000 GeV (N100 , N2000 , N3900)

Mass & p_T disrtribution for AK8 Jets & N

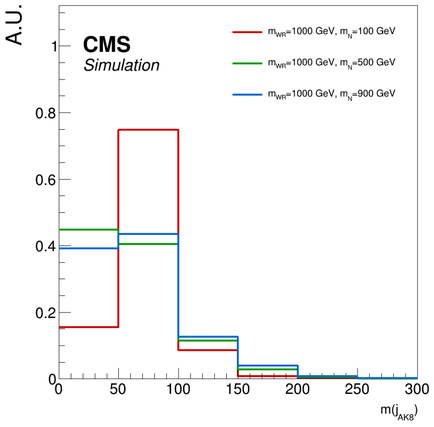


GenJetAK8
Leading

$p_T > 200$, $|\eta| < 2.4$

+

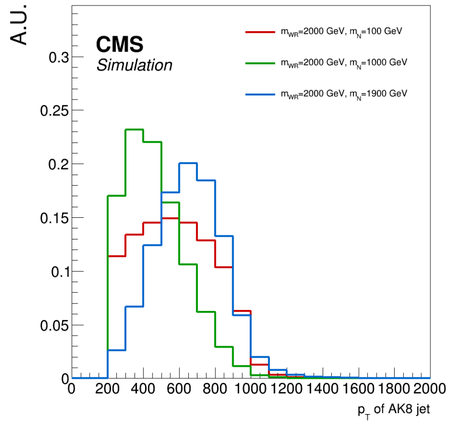
Cleaning (tau not inside Jet)

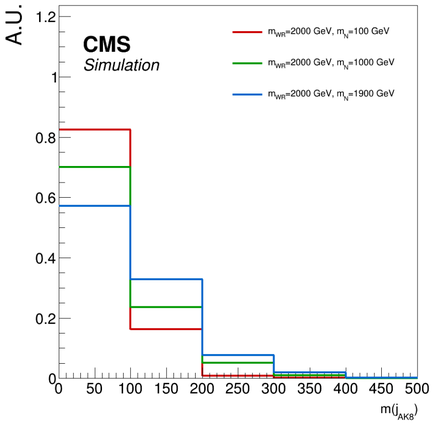


N reco by AK8

Sample : W_R 1000 GeV (N100 , N500 , N900)

Mass & p_T disrtribution for AK8 Jets & N





GenJetAK8
Leading

$p_T > 200$, $|\eta| < 2.4$

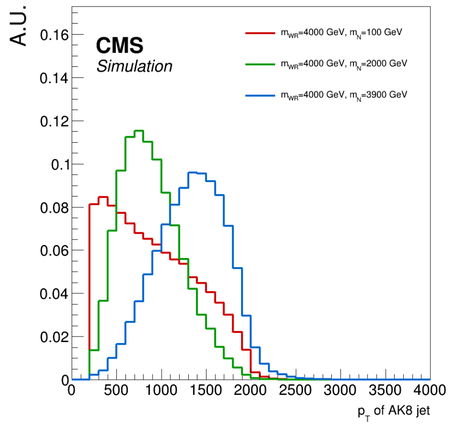
+

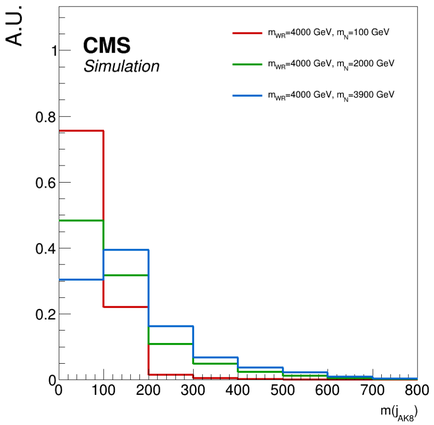
Cleaning (tau not inside Jet)

N reco by AK8

Sample : W_R 2000 GeV (N100 , N1000 , N1900)

Mass & p_T disrtribution for AK8 Jets & N





GenJetAK8
Leading

$p_T > 200$, $|\eta| < 2.4$

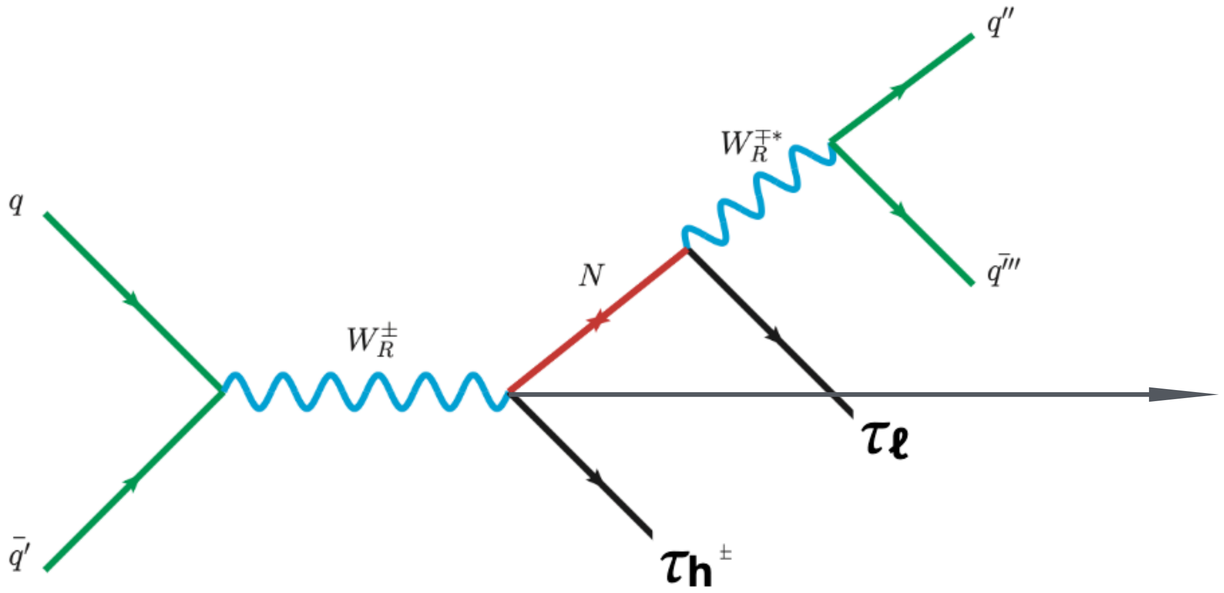
+

Cleaning (tau not inside Jet)

N reco by AK8

Sample : W_R 4000 GeV (N100 , N2000 , N3900)

W_R reconstruction



GenJet (AK4)
Leading,Subleading

$p_T > 40$, $|\eta| < 2.1$

+

Cleaning (lepton not inside Jet)

+

Cleaning (tau not inside Jet)

+

Tau from N
Leading

N reco by AK4

GenJetAK8
Leading

$p_T > 200$, $|\eta| < 2.4$

+

Cleaning (tau not inside Jet)

N reco by AK8

+

Hadronic Tau (GenVisTau)
Leading

$p_T > 40$, $|\eta| < 2.1$

W_R reco by AK4

W_R reco by AK8

Mass & p_T disrtribution for W_R (Ak4 Jet)

GenJet (AK4)
Leading,Subleading

$p_T > 40$, $|\eta| < 2.1$

+

Cleaning (lepton not inside Jet)

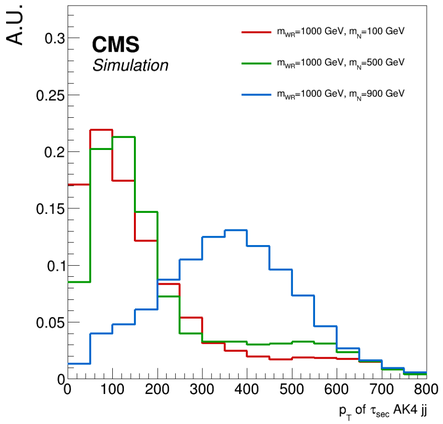
+

Cleaning (tau not inside Jet)

+

Tau from N
Leading

N reco by AK4



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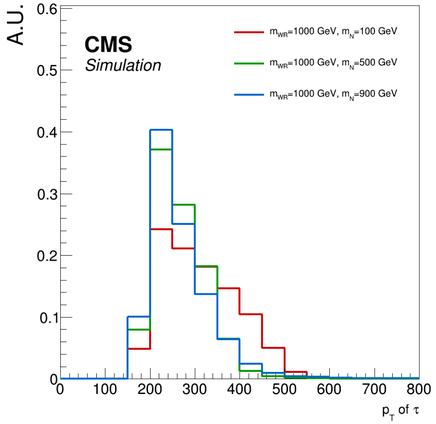
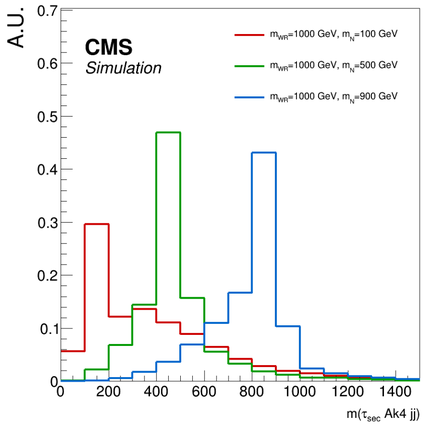
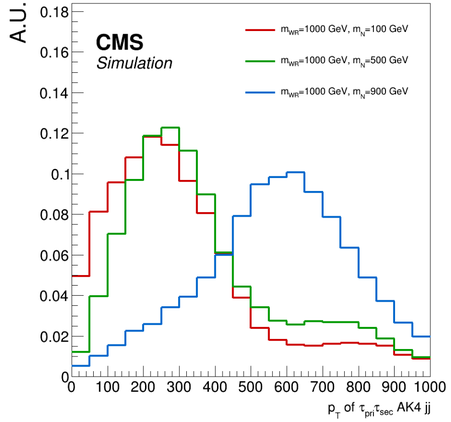
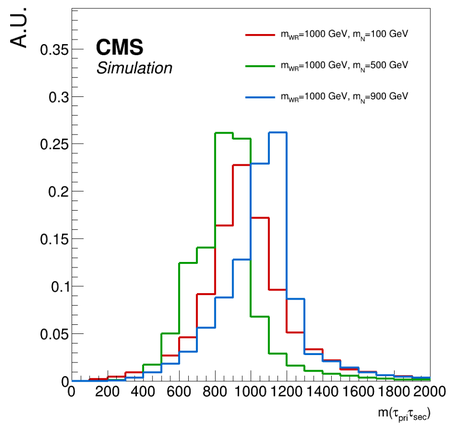




Hadronic Tau (GenVisTau)
Leading





W_R reco by AK4

Sample : W_R 1000 GeV (N100 , N500 , N900)

Mass & p_T disrtribution for W_R (Ak4 Jet)

GenJet (AK4)
Leading,Subleading

$p_T > 40$, $|\eta| < 2.1$

+

Cleaning (lepton not inside Jet)

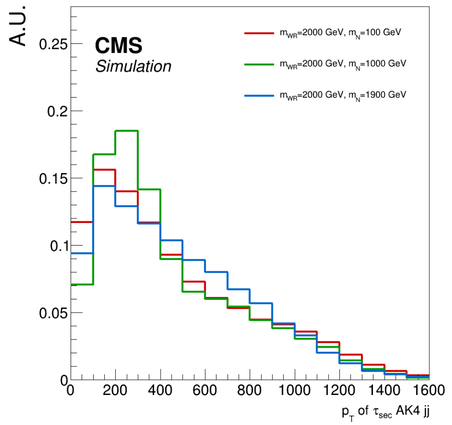
+

Cleaning (tau not inside Jet)

+

Tau from N
Leading

N reco by AK4



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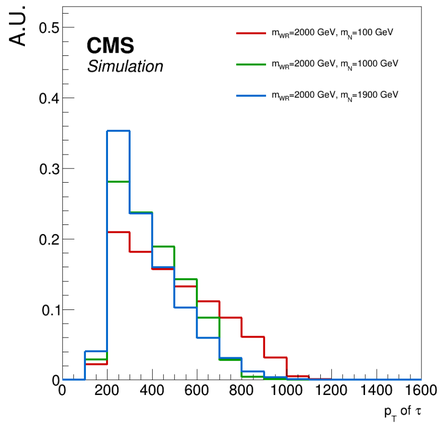
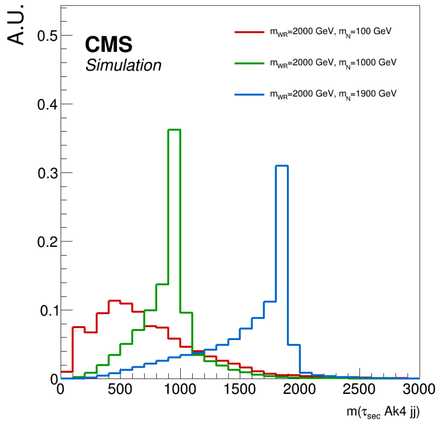
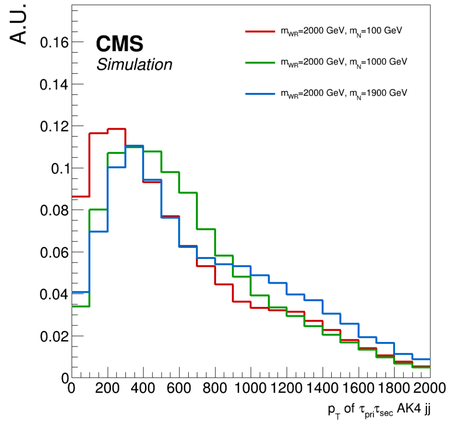
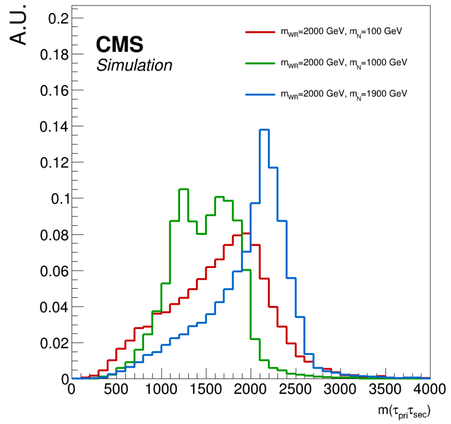


Hadronic Tau (GenVisTau)
Leading







W_R reco by AK4

Sample : W_R 2000 GeV (N100 , N1000 , N1900)

Mass & p_T disrtribution for W_R (Ak4 Jet)

GenJet (AK4)
Leading,Subleading

$p_T > 40$, $|\eta| < 2.1$

+

Cleaning (lepton not inside Jet)

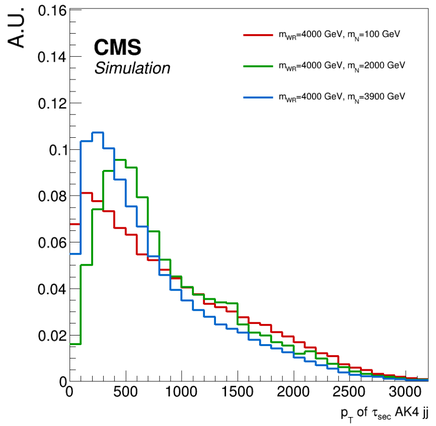
+

Cleaning (tau not inside Jet)

+

Tau from N
Leading

N reco by AK4



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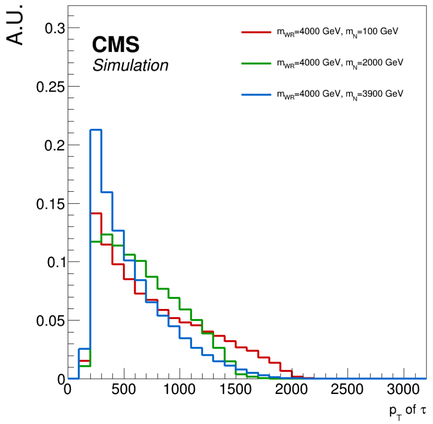
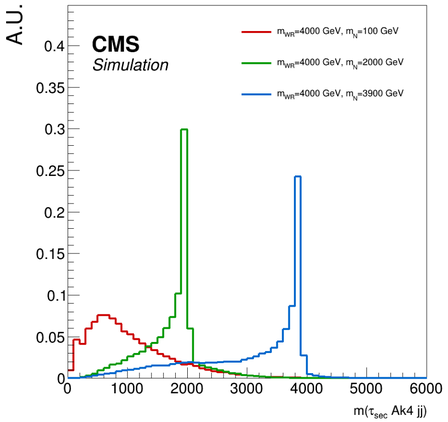
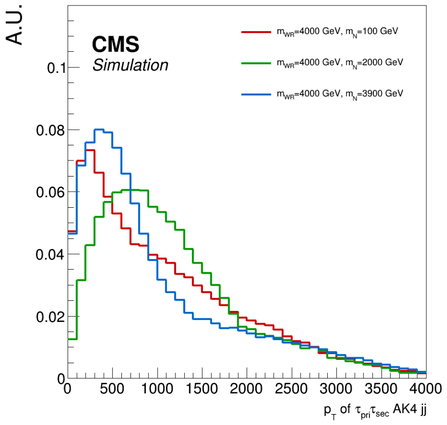
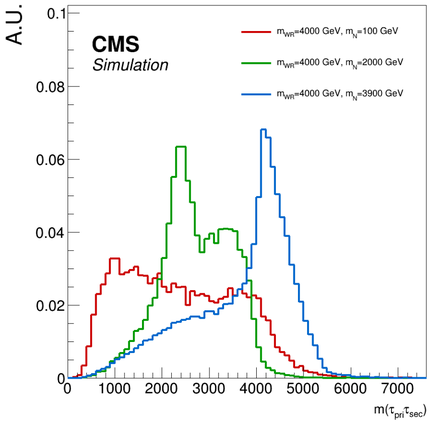


Hadronic Tau (GenVisTau)
Leading







W_R reco by AK4

Sample : W_R 4000 GeV (N100 , N2000 , N3900)

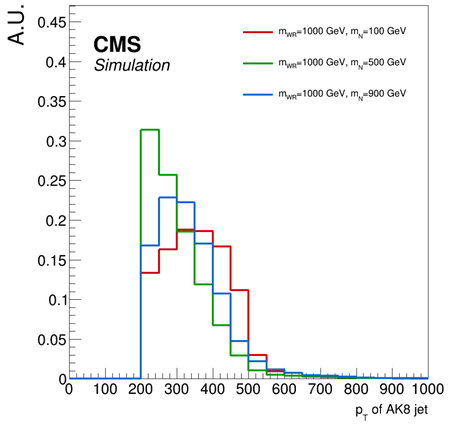
Mass & p_T disrtribution for W_R (Ak8 Jet)

GenJetAK8
Leading

$p_T > 200$, $|\eta| < 2.4$

+

Cleaning (tau not inside Jet)



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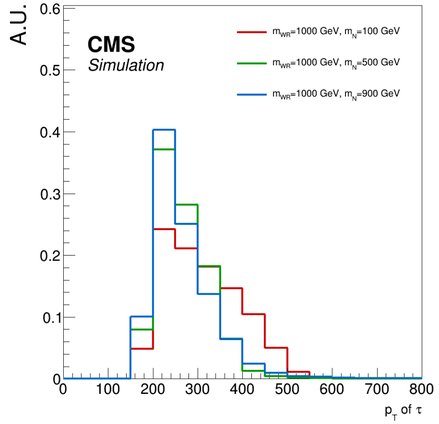
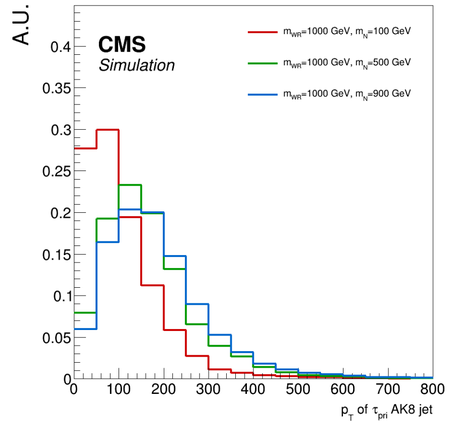
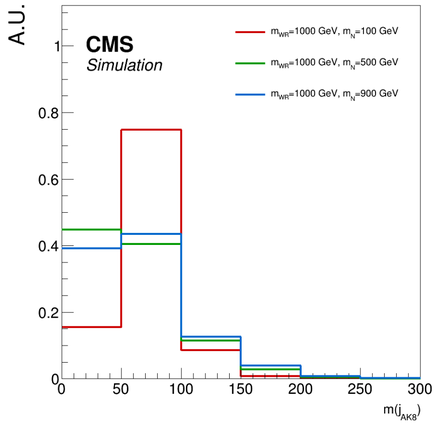
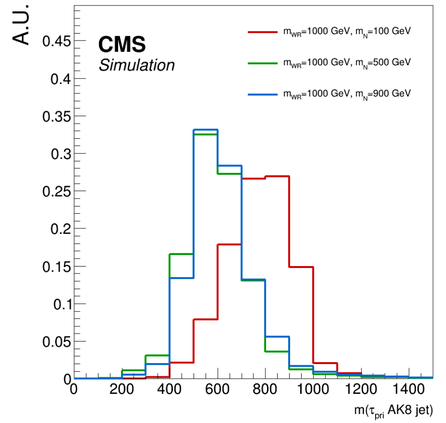




N reco by AK8



Hadronic Tau (GenVisTau)
Leading



W_R reco by AK8

Sample : W_R 1000 GeV (N100 , N500 , N900)

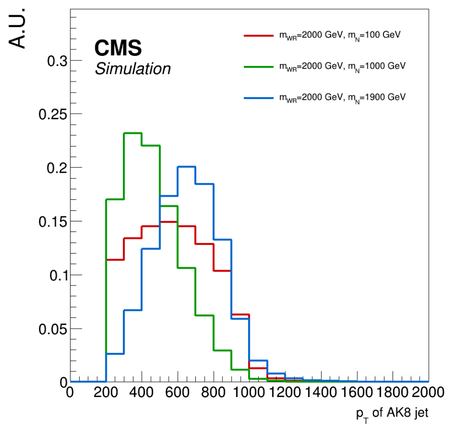
Mass & p_T disrtribution for W_R (Ak8 Jet)

GenJetAK8
Leading

$p_T > 200$, $|\eta| < 2.4$

+

Cleaning (tau not inside Jet)



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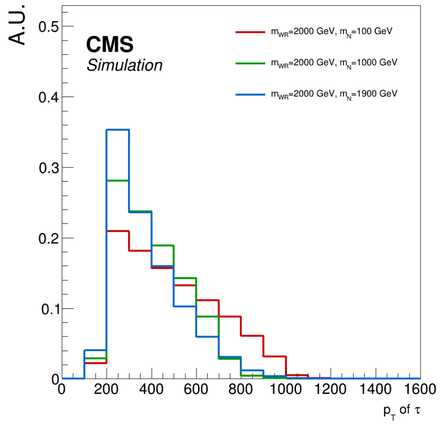
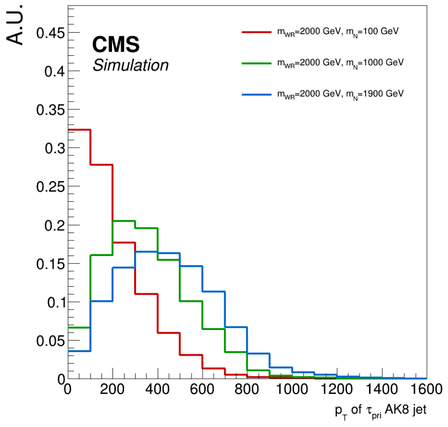
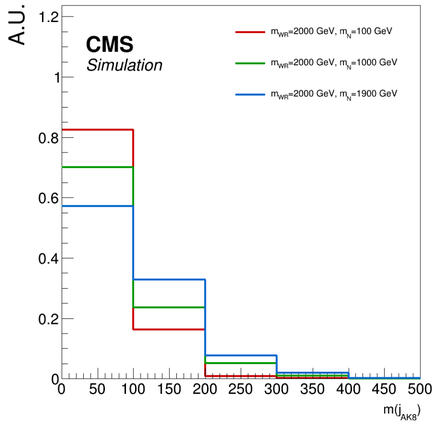
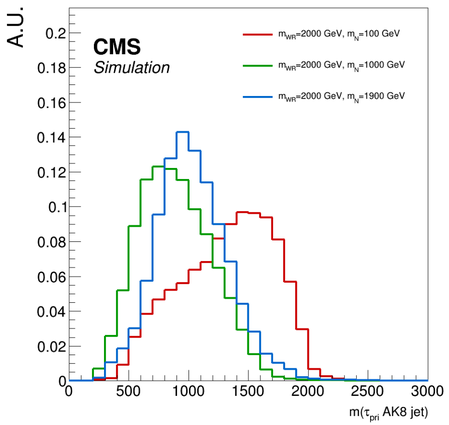


Hadronic Tau (GenVisTau)
Leading



N reco by AK8





W_R reco by AK8

Sample : W_R 2000 GeV (N100 , N1000 , N1900)

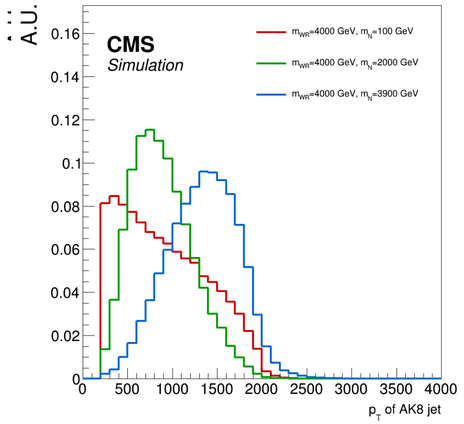
Mass & p_T disrtribution for W_R (Ak8 Jet)

GenJetAK8
Leading

$p_T > 200$, $|\eta| < 2.4$

+

Cleaning (tau not inside Jet)



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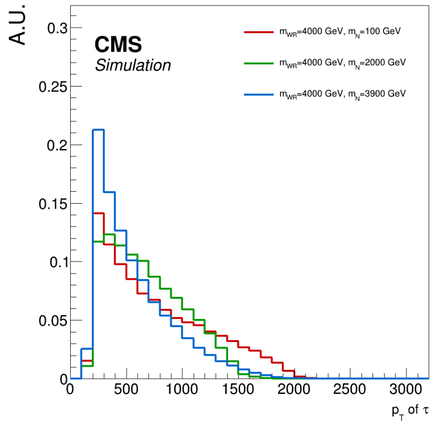
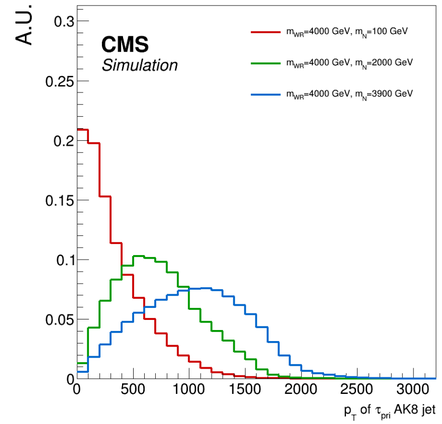
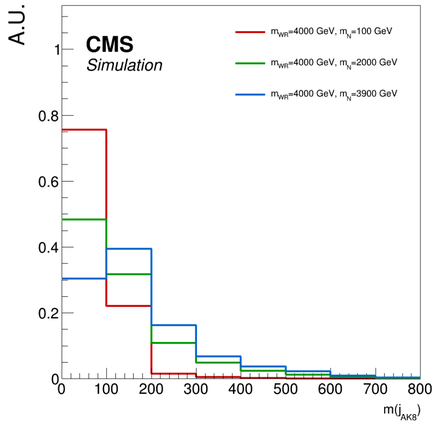
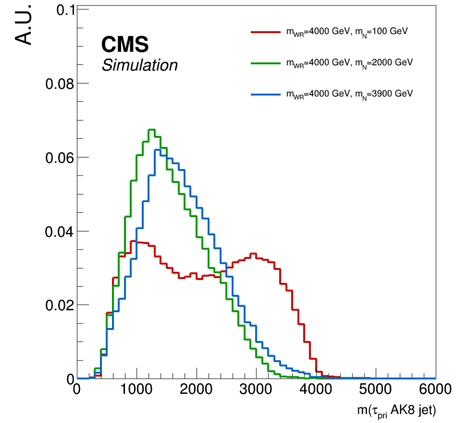




N reco by AK8



Hadronic Tau (GenVisTau)
Leading



W_R reco by AK8

Sample : W_R 4000 GeV (N100 , N2000 , N3900)

Thanks!