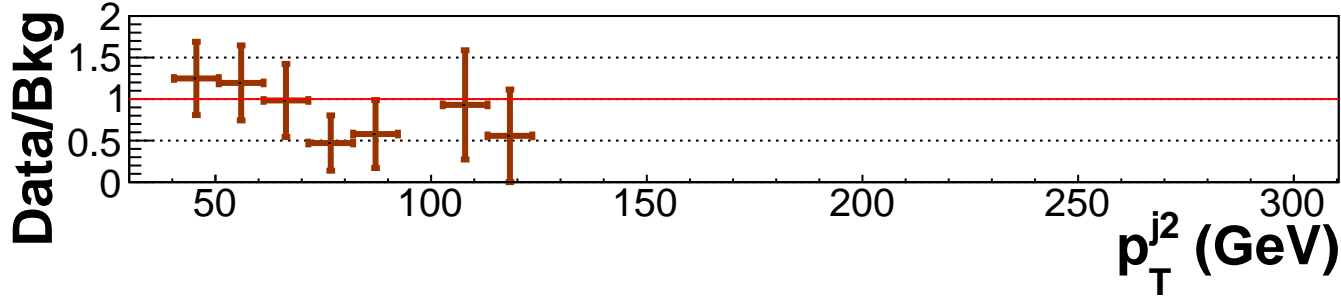


19.2 fb⁻¹ (8 TeV)

CMS

preliminary

— $W \rightarrow \tau \nu$
— Run 1 $W \rightarrow \tau \nu$



19.2 fb⁻¹ (8 TeV)

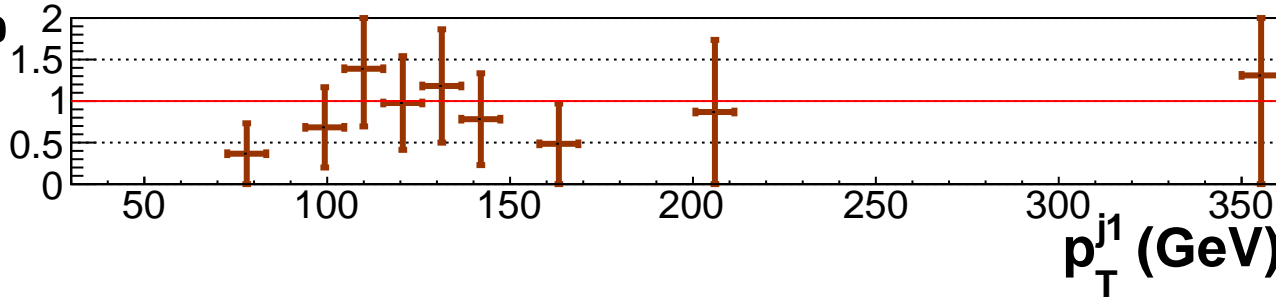
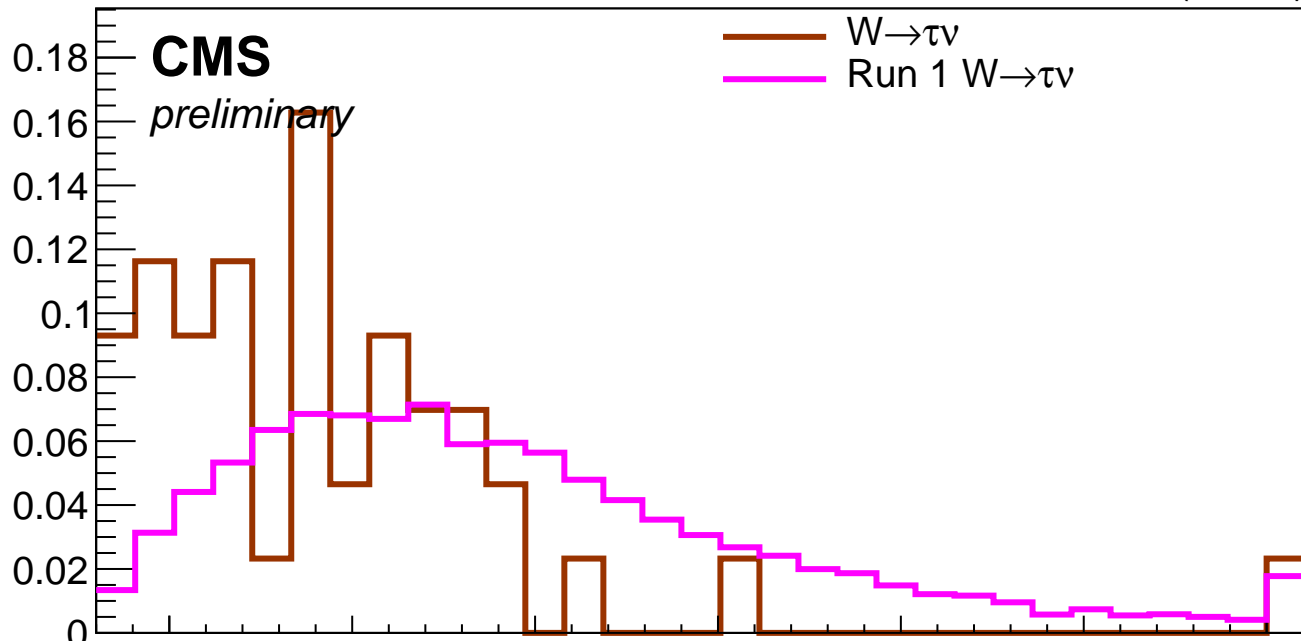
CMS

preliminary

— $W \rightarrow \tau \nu$
— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

p_T^{j1} (GeV)



19.2 fb⁻¹ (8 TeV)

CMS

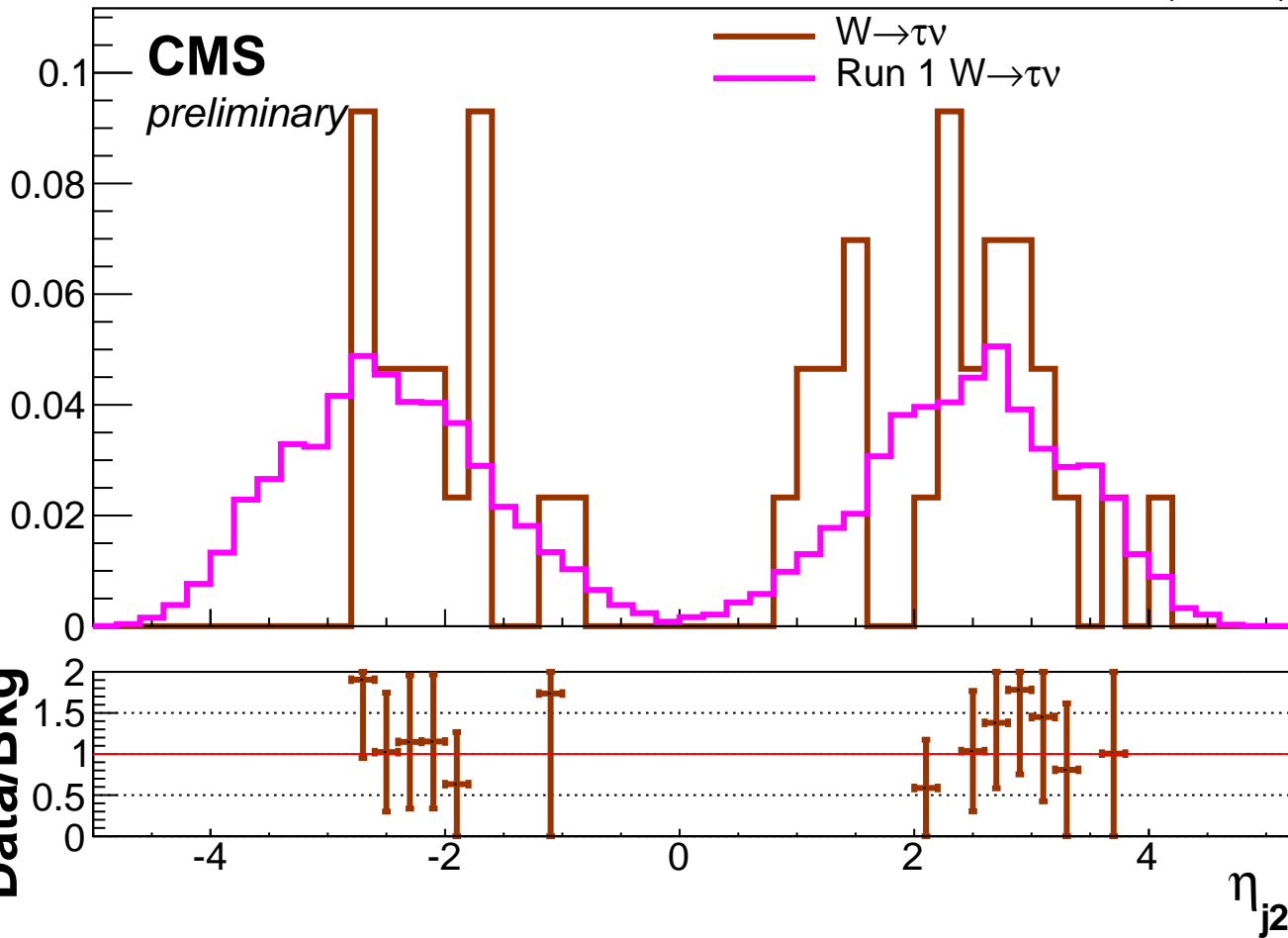
preliminary

— $W \rightarrow \tau \nu$

— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

η_{j2}



19.2 fb⁻¹ (8 TeV)

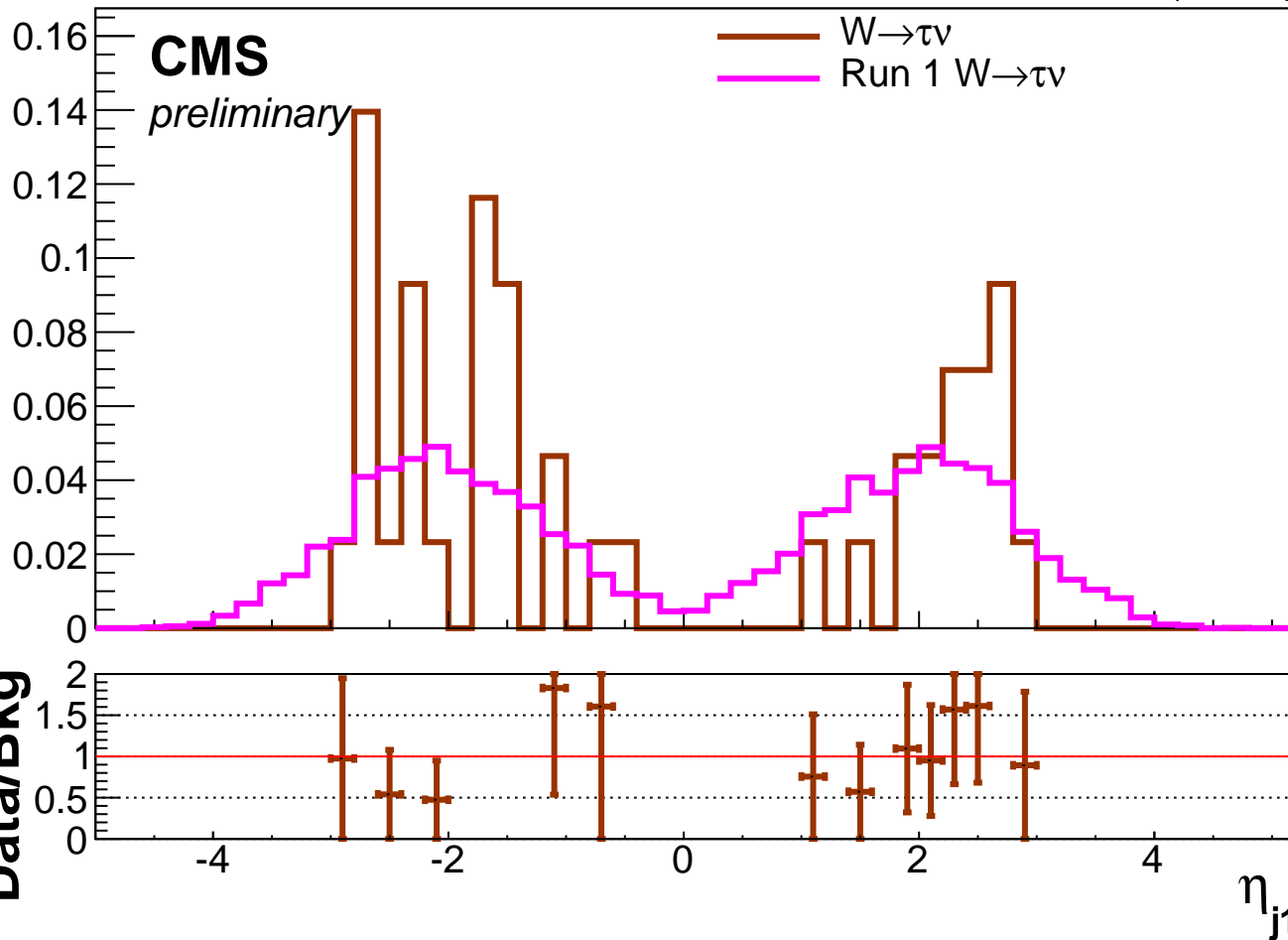
CMS

preliminary

— $W \rightarrow \tau \nu$
— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

η_{j1}



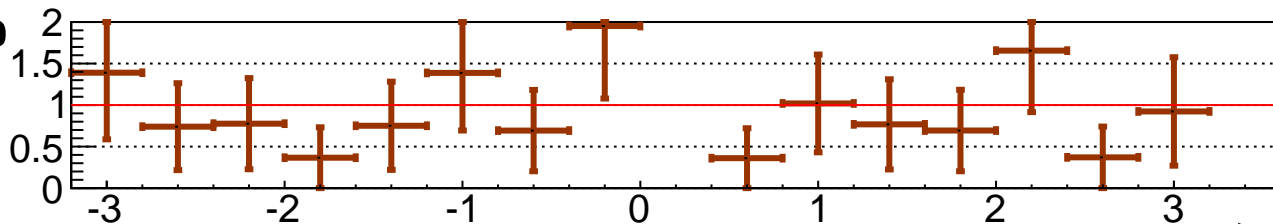
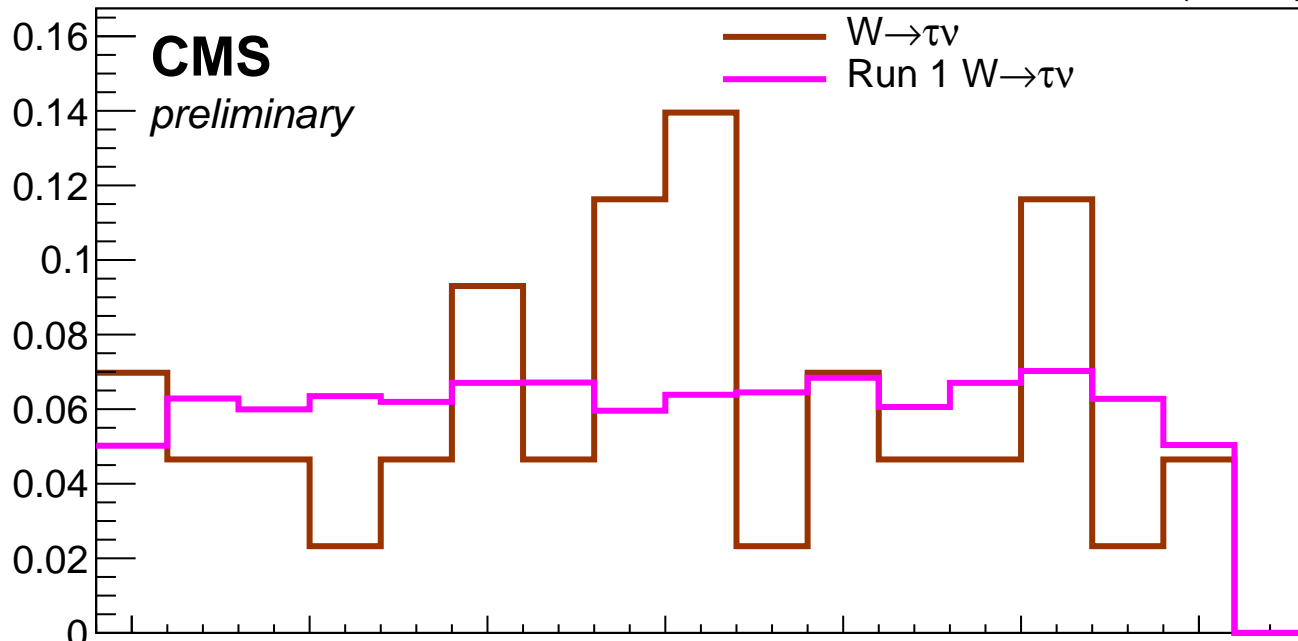
19.2 fb⁻¹ (8 TeV)

CMS
preliminary

— $W \rightarrow \tau \nu$
— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

ϕ_{j1}



19.2 fb⁻¹ (8 TeV)

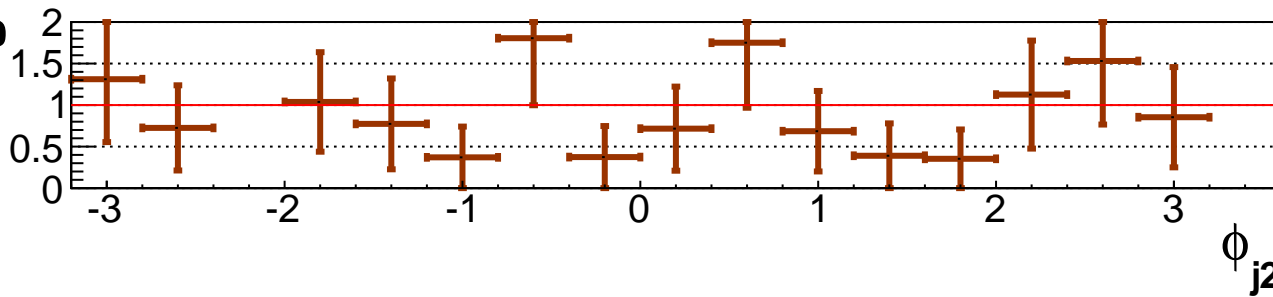
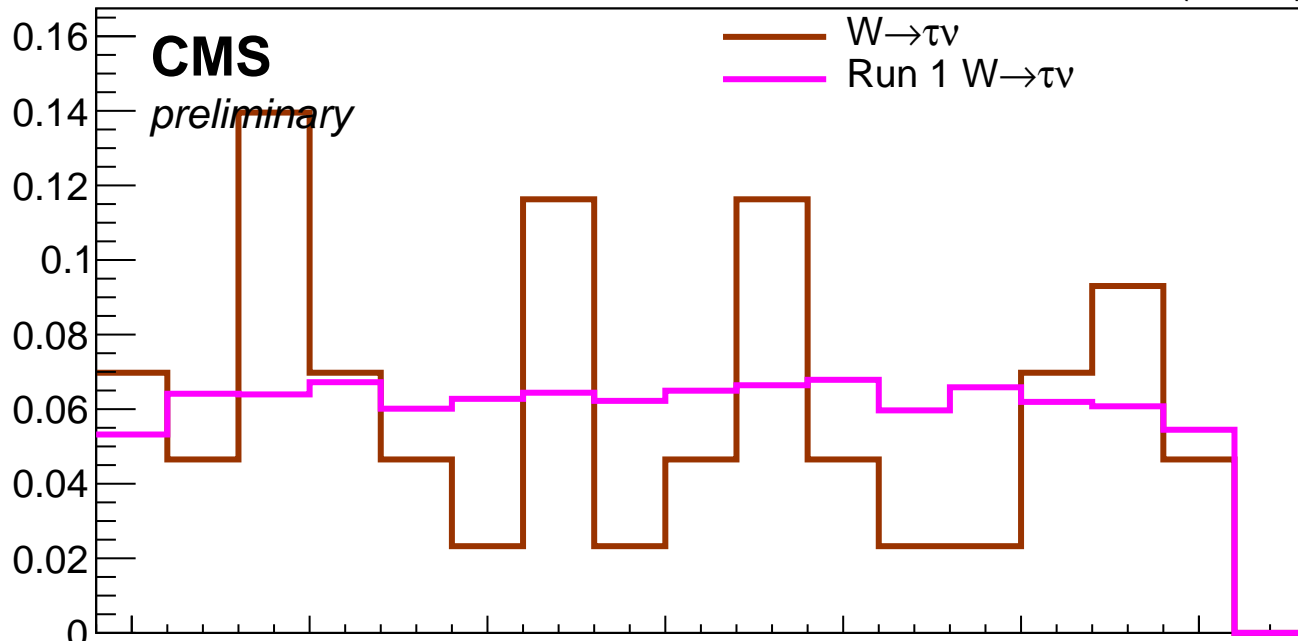
CMS

preliminary

— $W \rightarrow \tau \nu$
— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

ϕ_{j2}



19.2 fb⁻¹ (8 TeV)

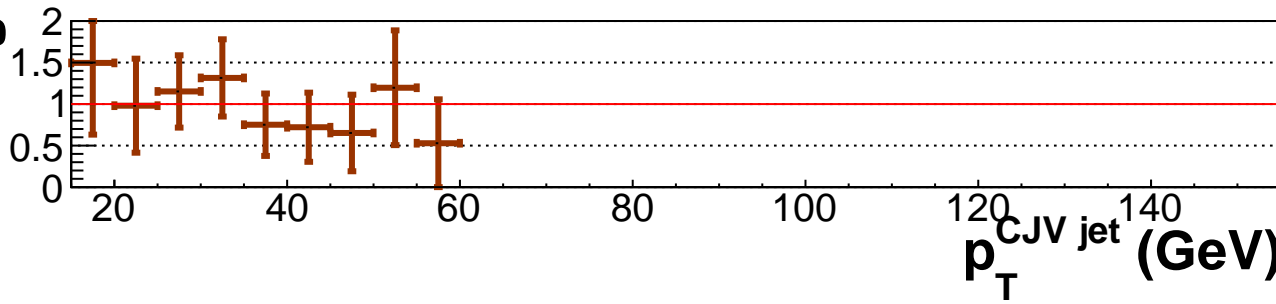
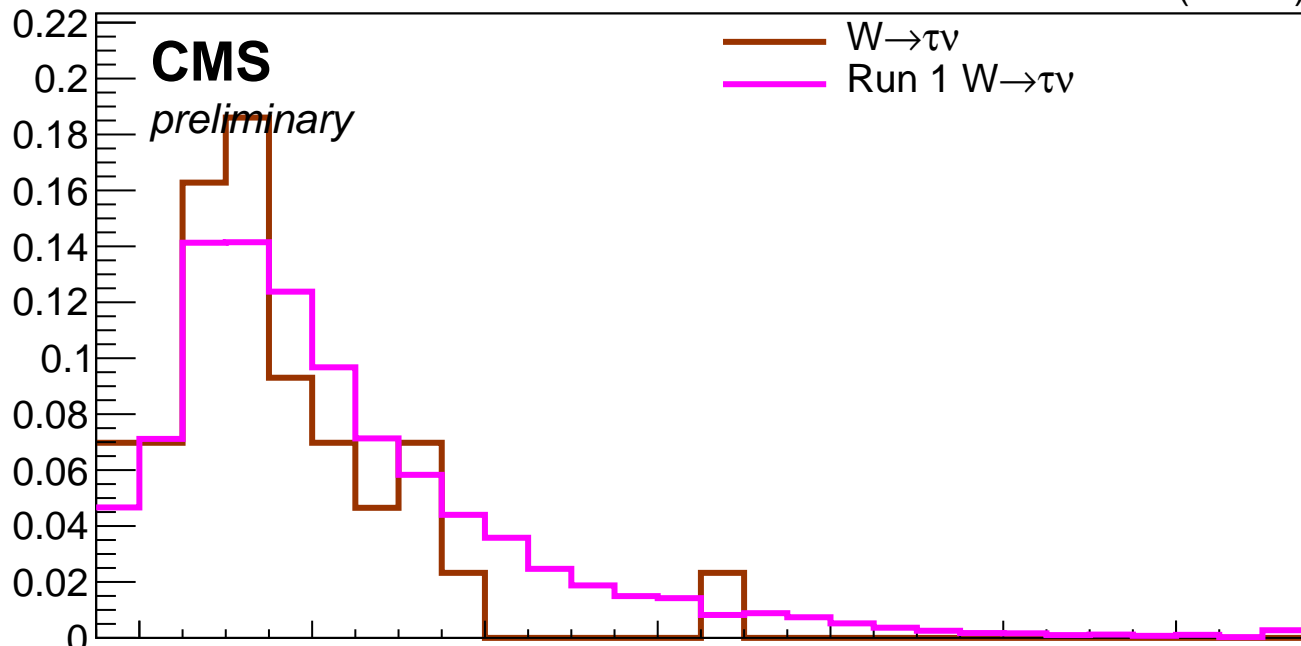
CMS

preliminary

— $W \rightarrow \tau \nu$
— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

$p_T^{\text{CJV jet}}$ (GeV)

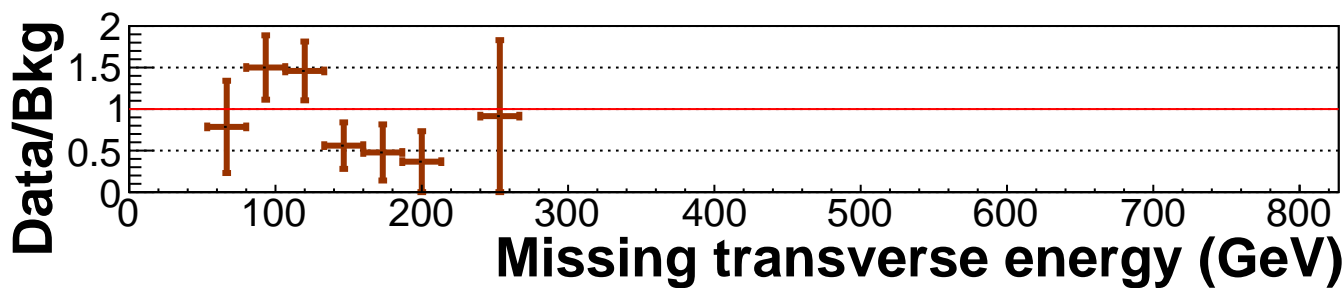


19.2 fb⁻¹ (8 TeV)

CMS

preliminary

— $W \rightarrow \tau \nu$
— Run 1 $W \rightarrow \tau \nu$



19.2 fb⁻¹ (8 TeV)

CMS

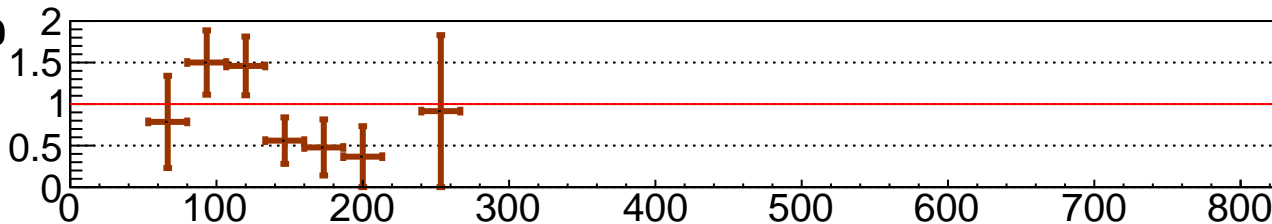
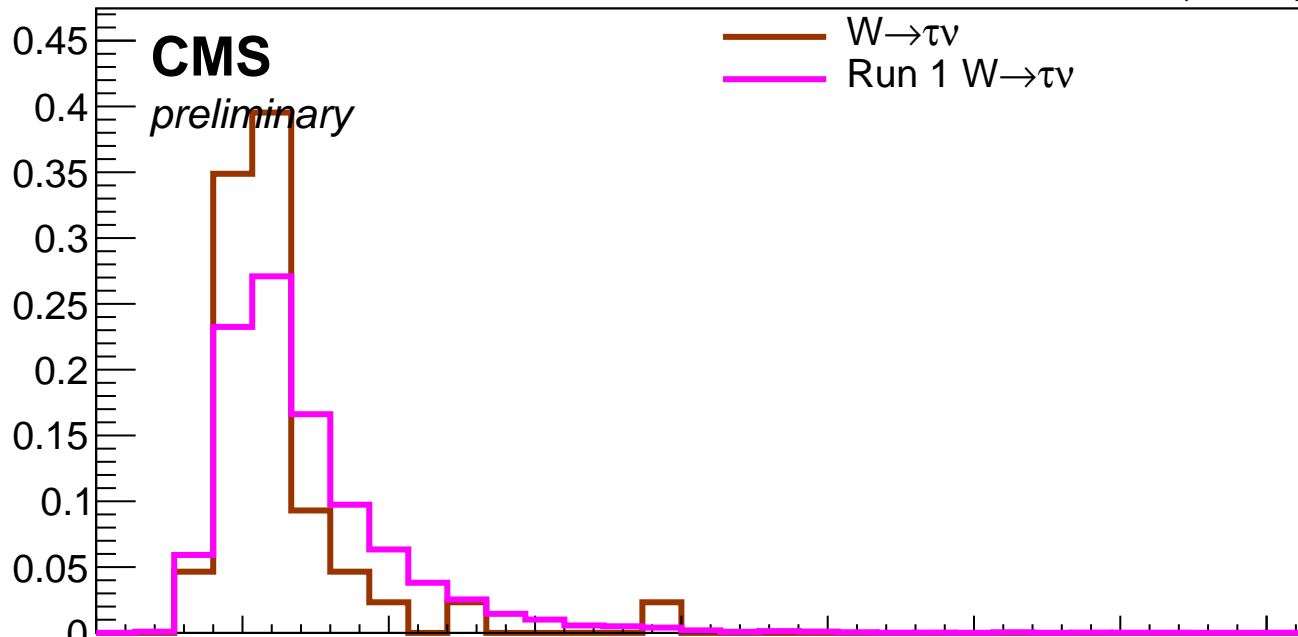
preliminary

— $W \rightarrow \tau \nu$

— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

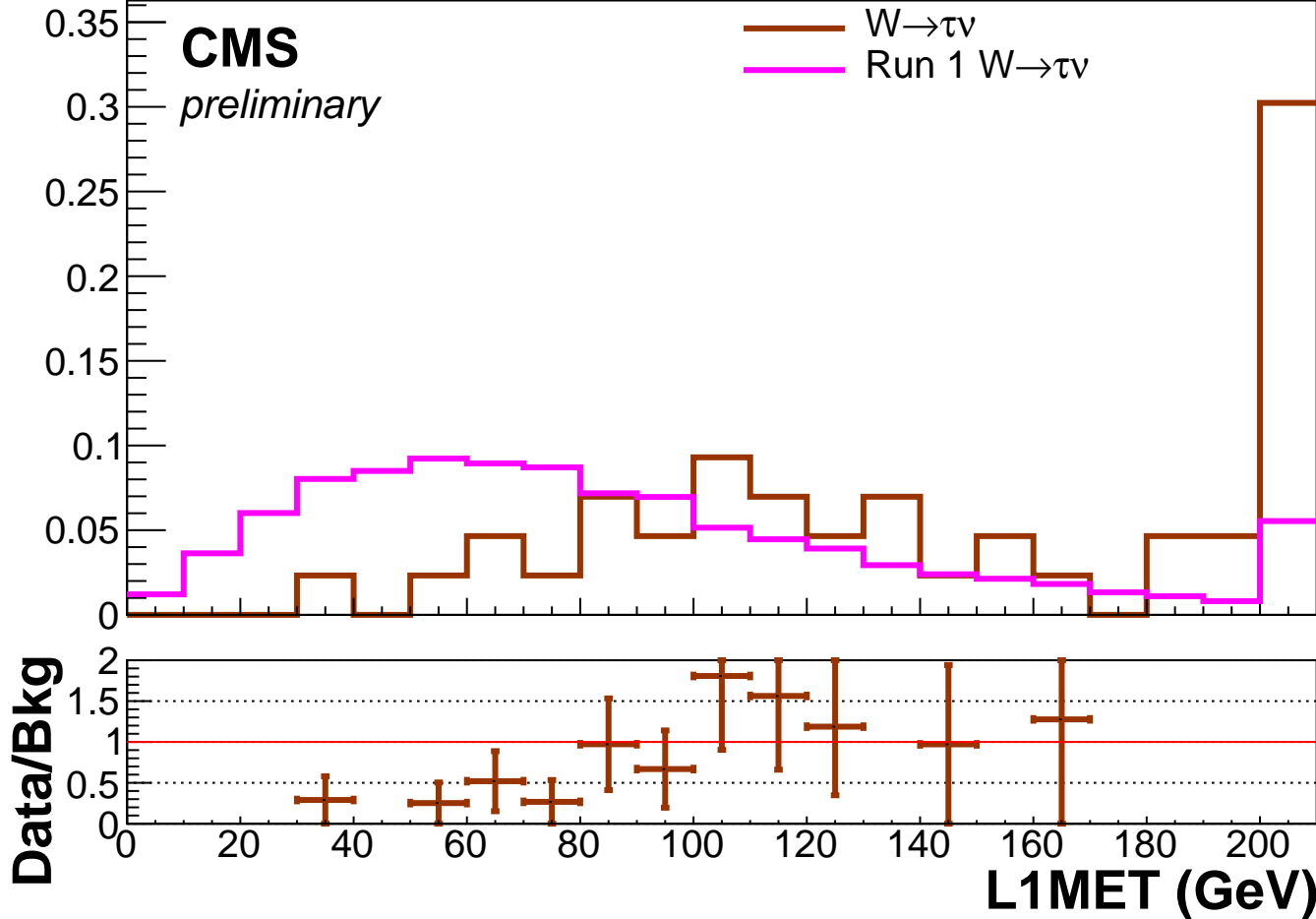
MET (GeV)



19.2 fb⁻¹ (8 TeV)

CMS
preliminary

— $W \rightarrow \tau \nu$
— Run 1 $W \rightarrow \tau \nu$



19.2 fb⁻¹ (8 TeV)

CMS

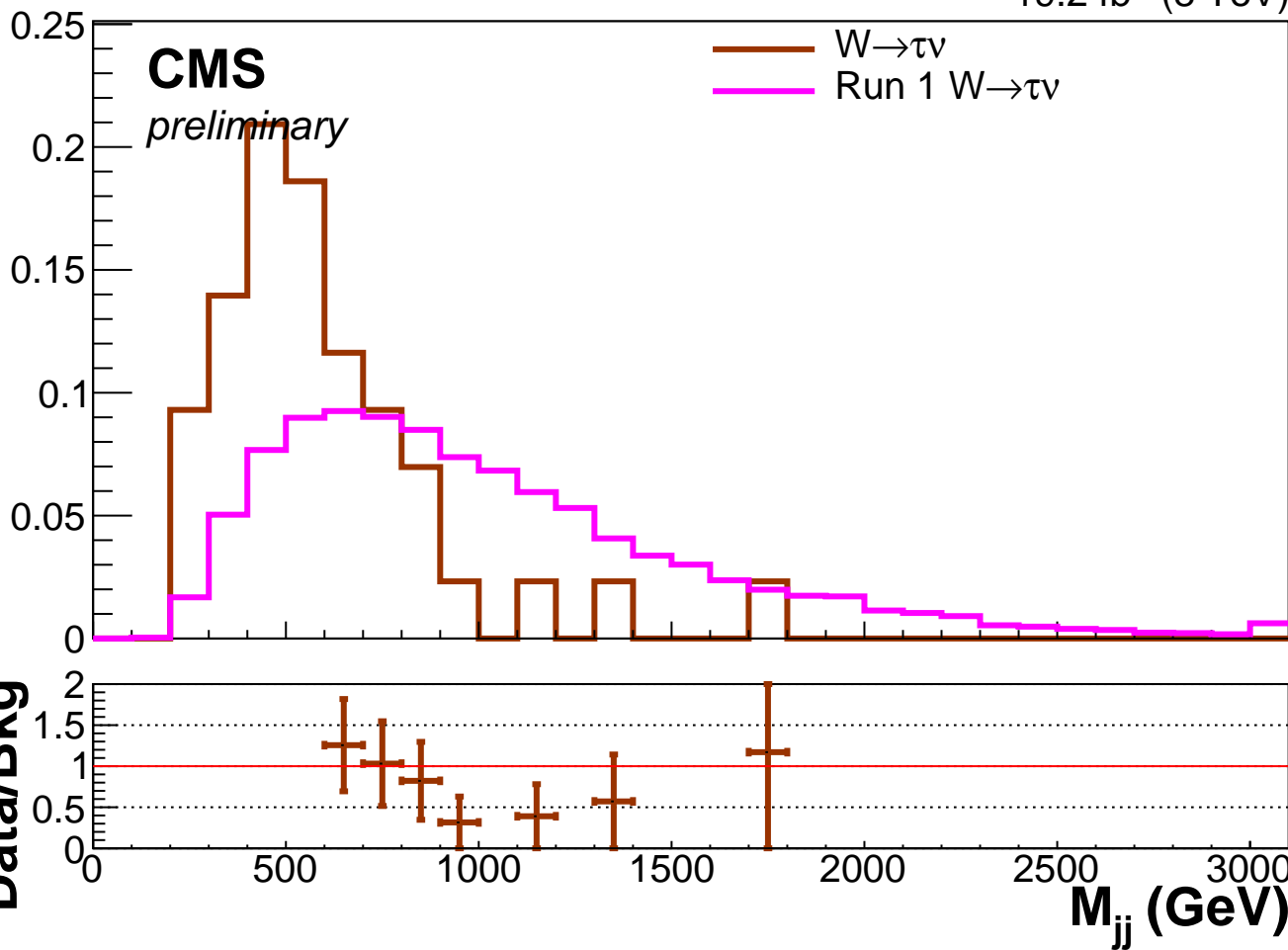
preliminary

— $W \rightarrow \tau \nu$

— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

M_{jj} (GeV)



19.2 fb⁻¹ (8 TeV)

CMS

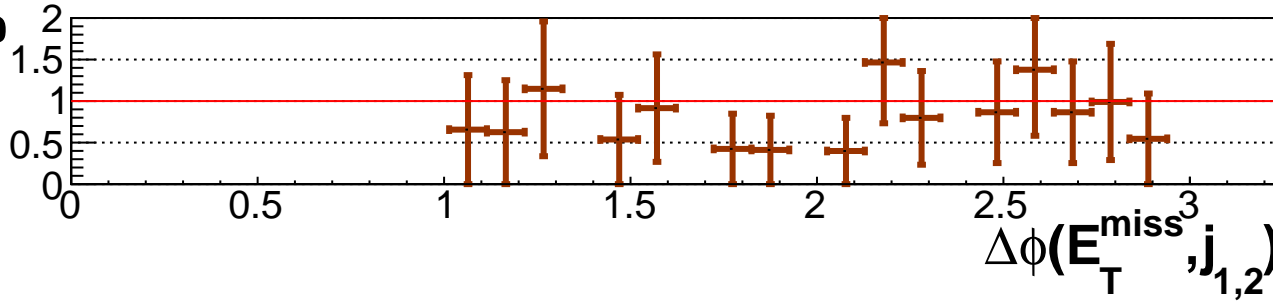
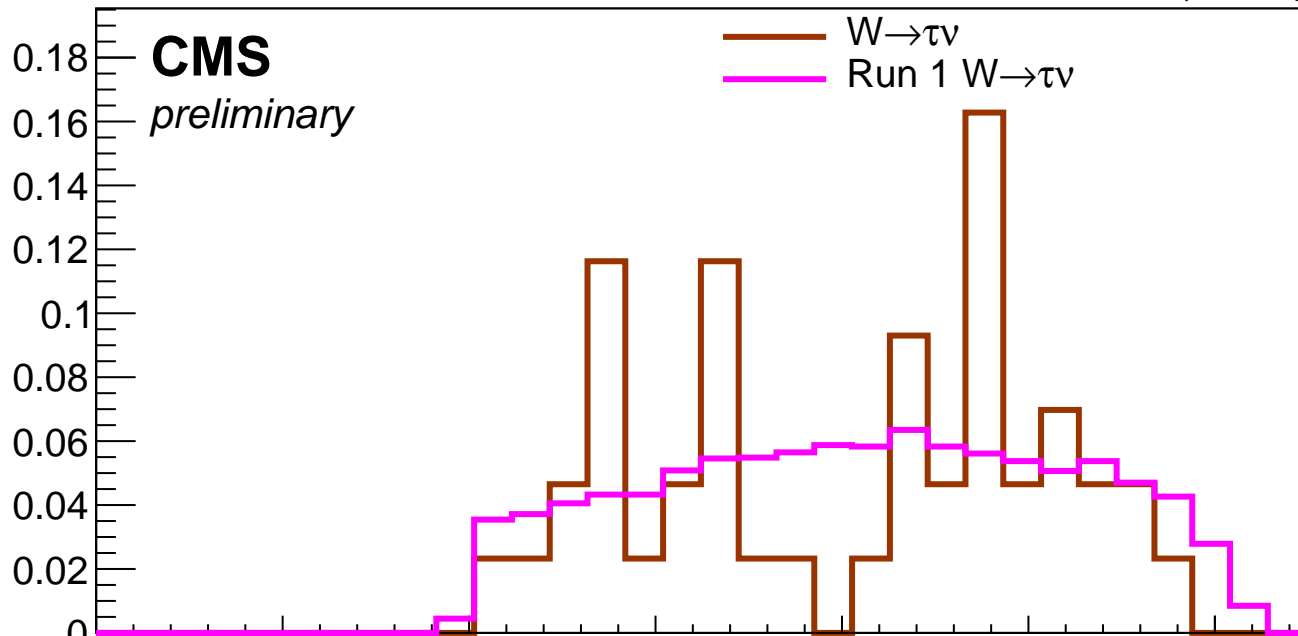
preliminary

— $W \rightarrow \tau \nu$

— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

$\Delta\phi(E_T^{\text{miss}}, j_{1,2})$

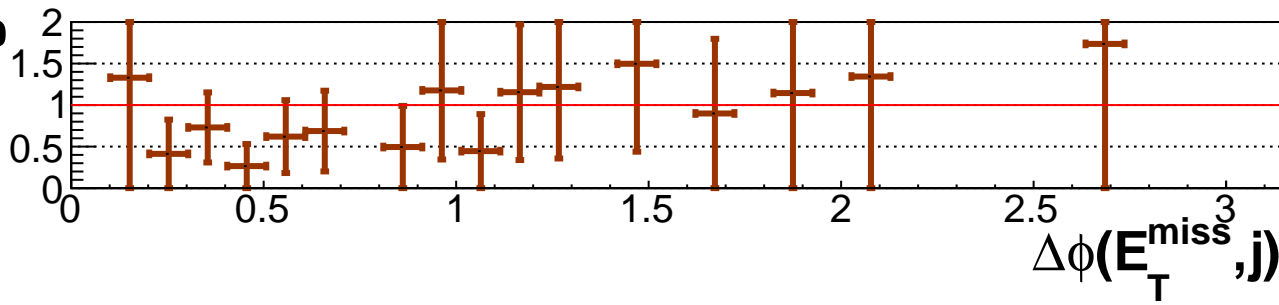
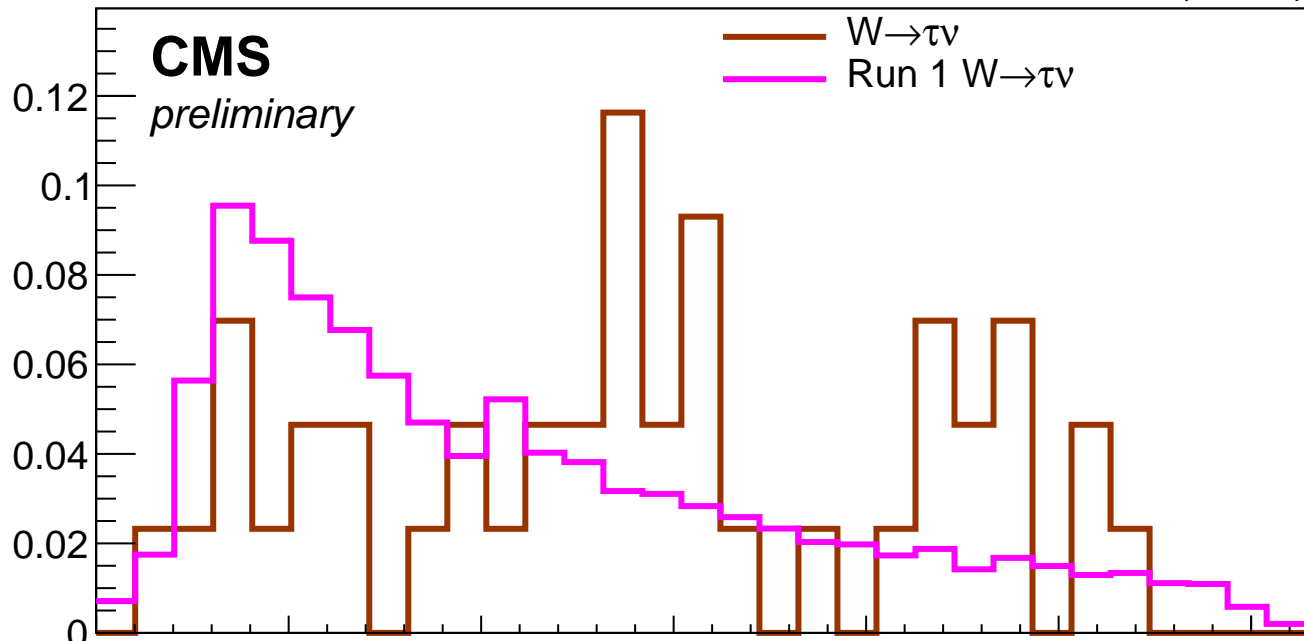


19.2 fb⁻¹ (8 TeV)

CMS
preliminary

— $W \rightarrow \tau \nu$
— Run 1 $W \rightarrow \tau \nu$

Data/Bkg



19.2 fb⁻¹ (8 TeV)

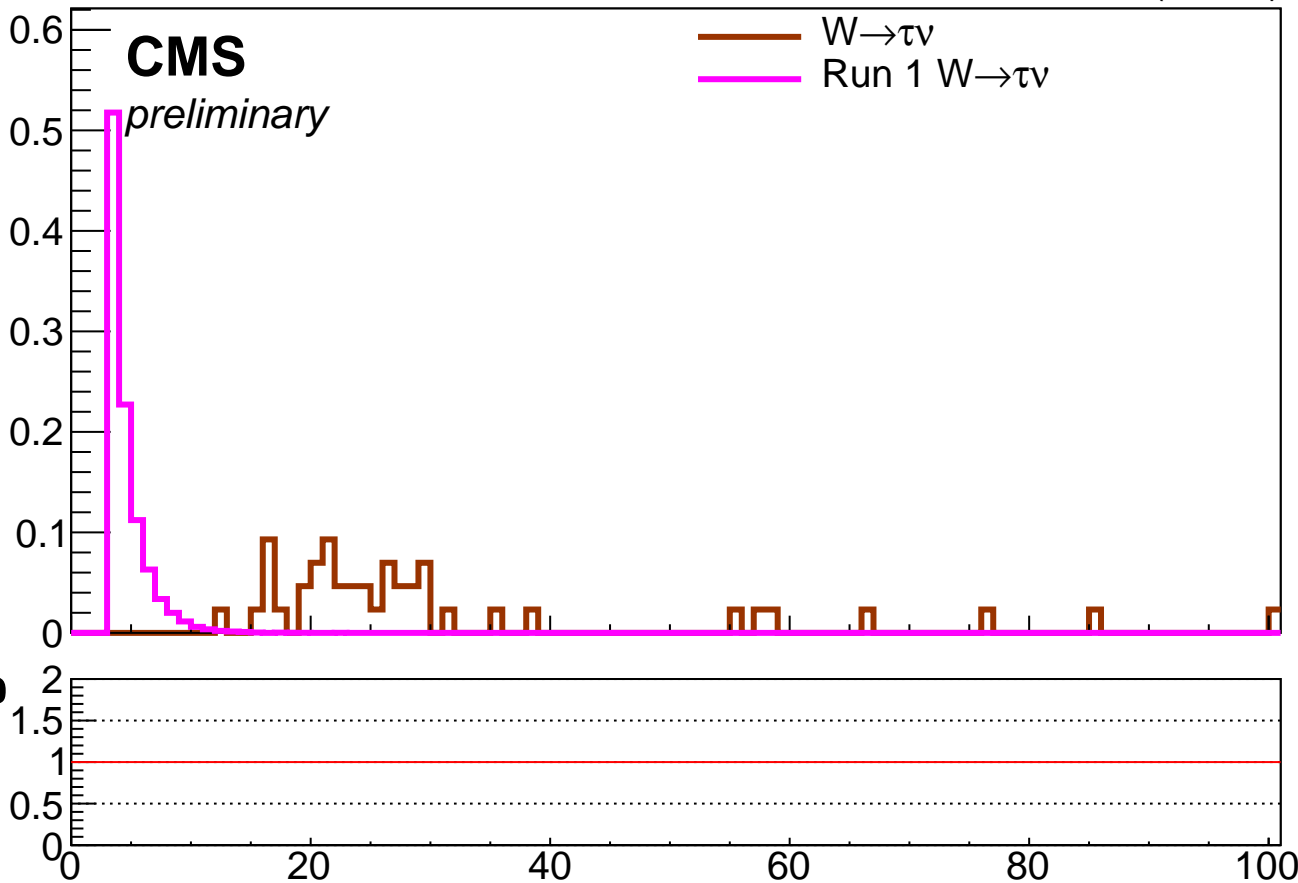
CMS

preliminary

— $W \rightarrow \tau \nu$
— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

S



19.2 fb⁻¹ (8 TeV)

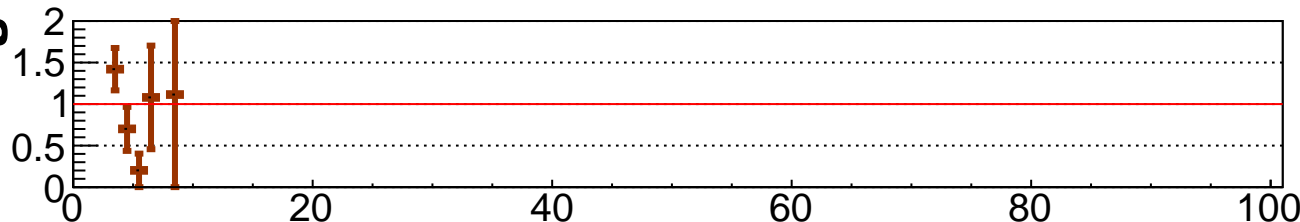
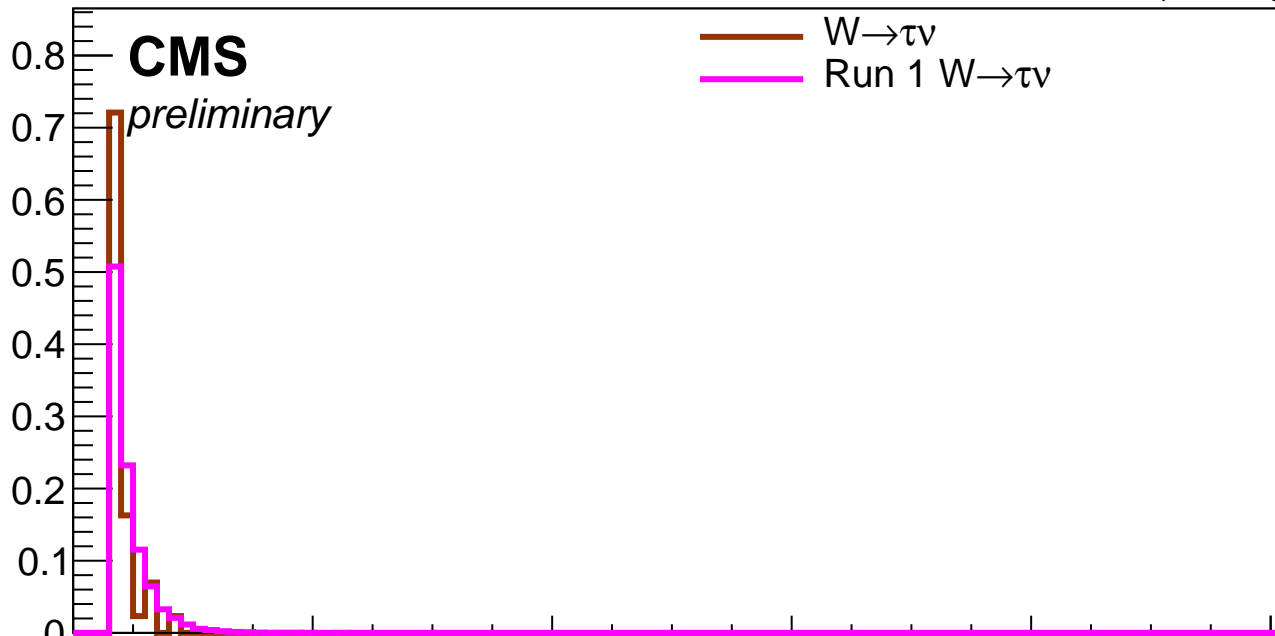
CMS

preliminary

— $W \rightarrow \tau \nu$
— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

Run 1 S



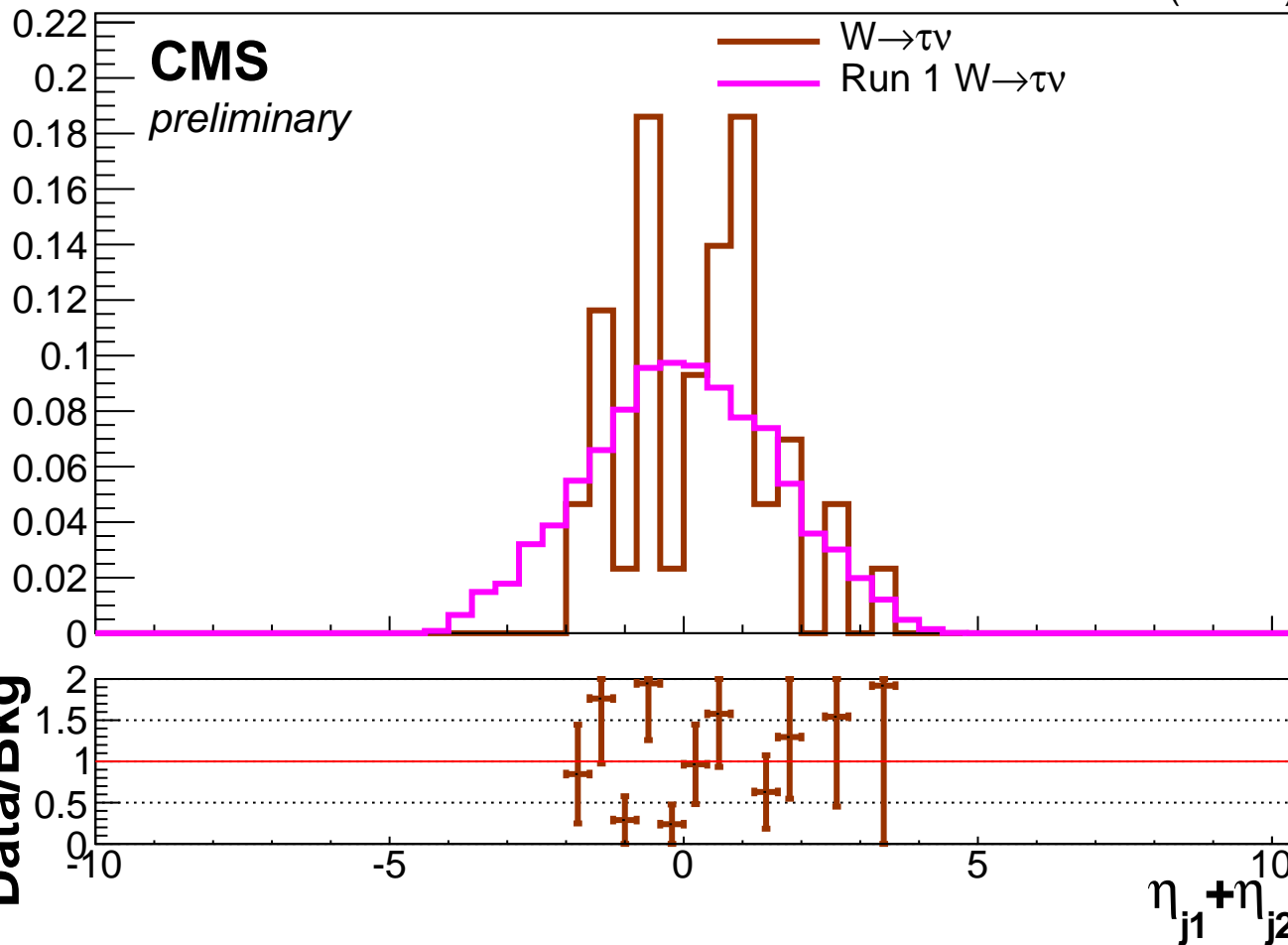
19.2 fb⁻¹ (8 TeV)

CMS
preliminary

— $W \rightarrow \tau \nu$
— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

$\eta_{j1} + \eta_{j2}$



19.2 fb⁻¹ (8 TeV)

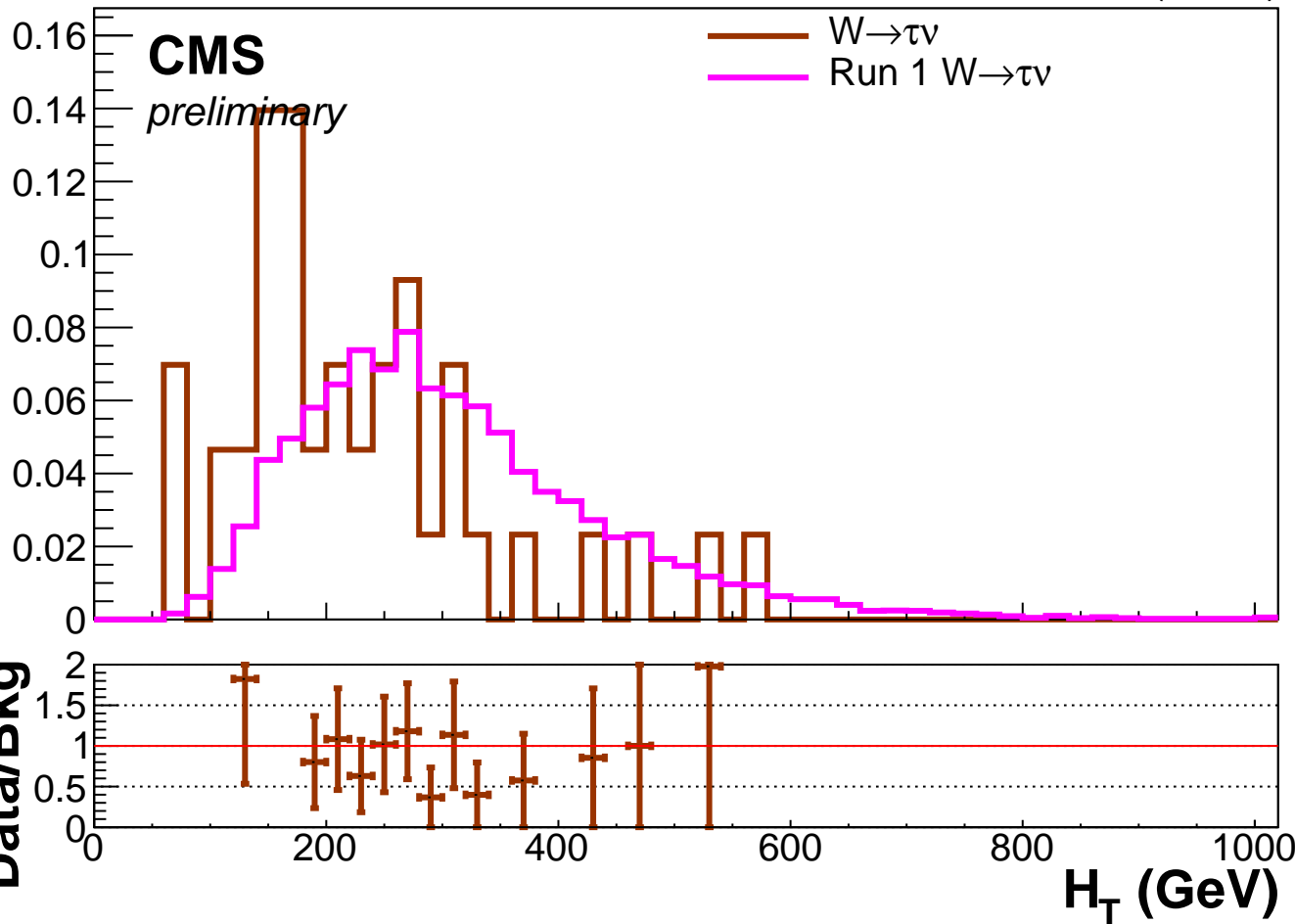
CMS

preliminary

— $W \rightarrow \tau \nu$
— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

H_T (GeV)



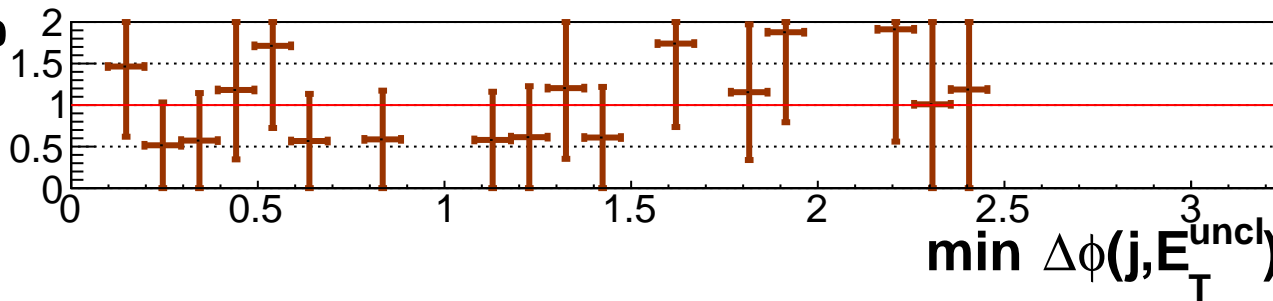
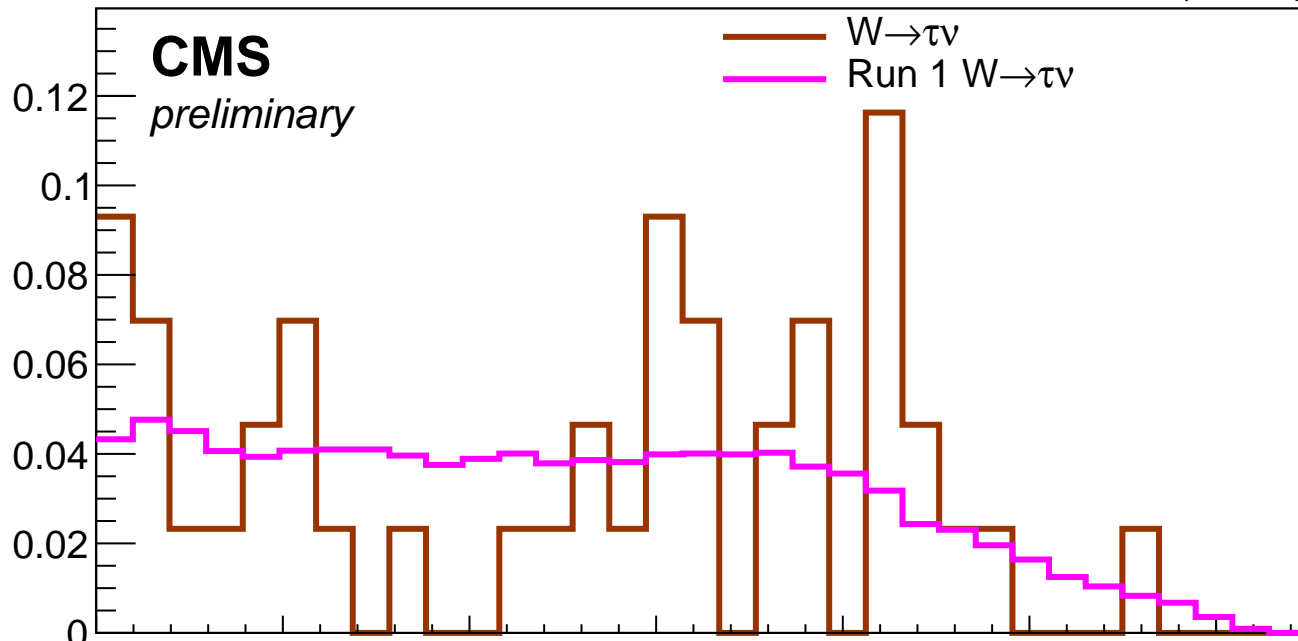
19.2 fb⁻¹ (8 TeV)

CMS
preliminary

— $W \rightarrow \tau \nu$
— Run 1 $W \rightarrow \tau \nu$

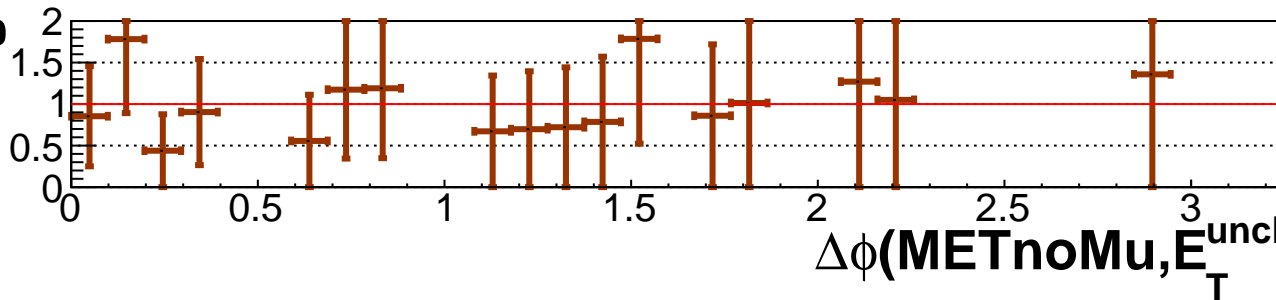
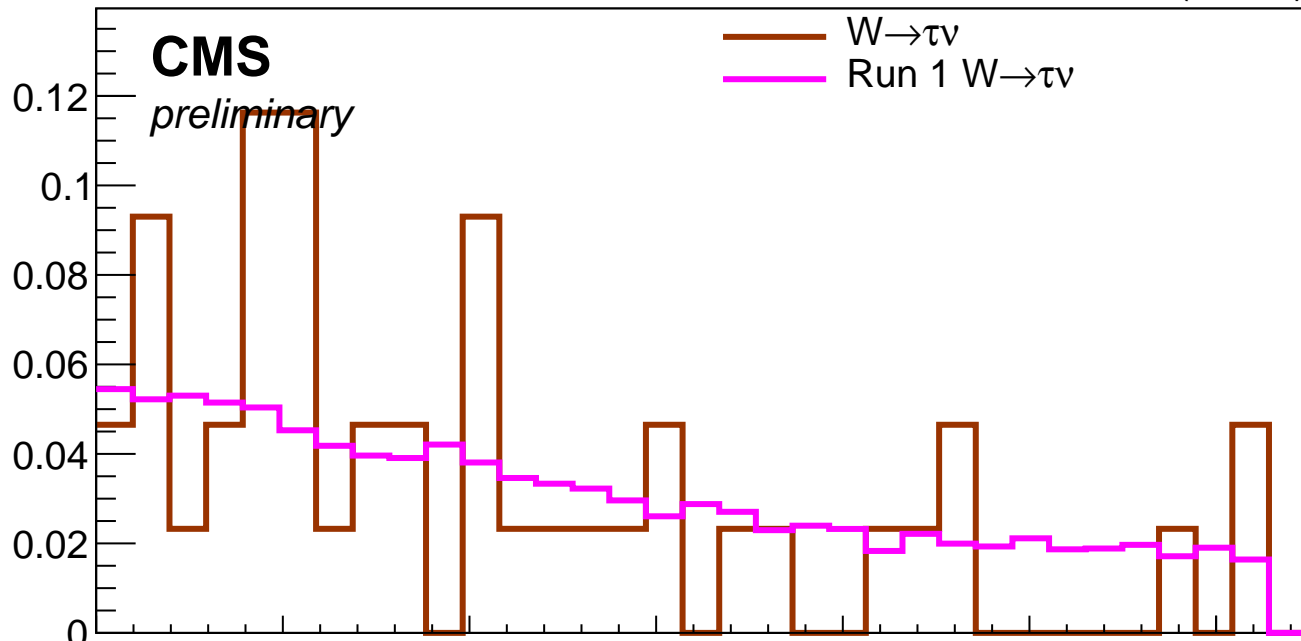
Data/Bkg

min $\Delta\phi(j, E_T^{\text{uncl}})$



19.2 fb⁻¹ (8 TeV)**CMS***preliminary*

— $W \rightarrow \tau \nu$
— Run 1 $W \rightarrow \tau \nu$

Data/Bkg $\Delta\phi(\text{MET no Mu}, E_T^{\text{uncl}})$ 

19.2 fb⁻¹ (8 TeV)

CMS

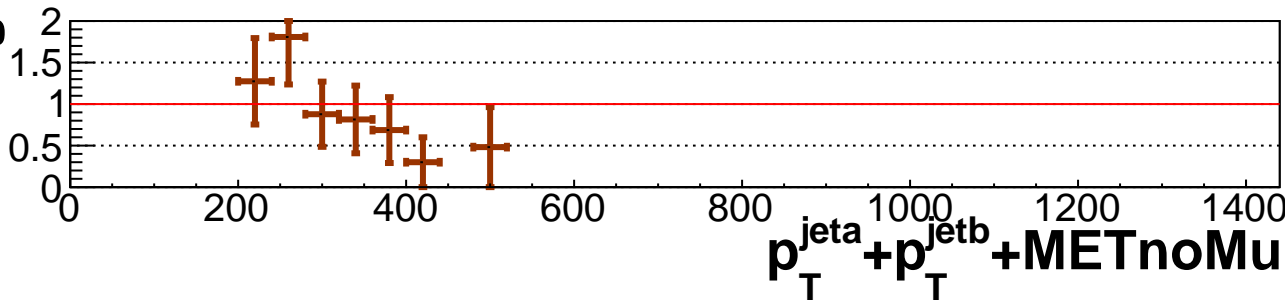
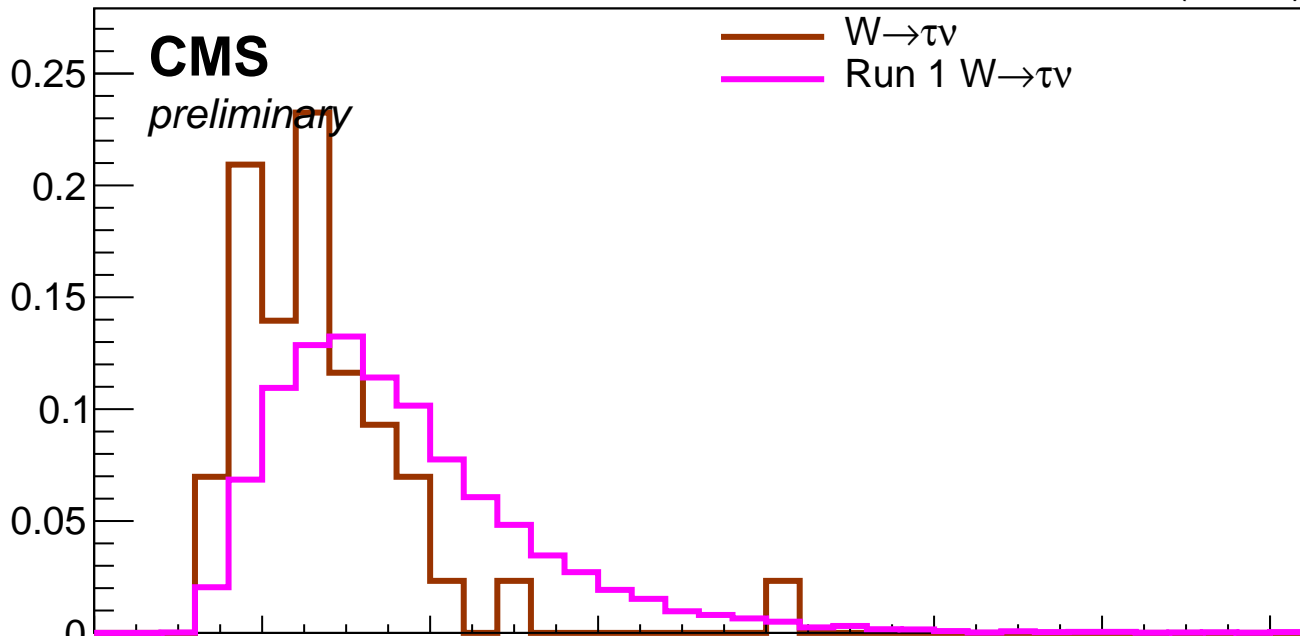
preliminary

— $W \rightarrow \tau \nu$

— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

$p_T^{\text{jeta}} + p_T^{\text{jetb}} + \text{METnoMu}$



19.2 fb⁻¹ (8 TeV)

CMS

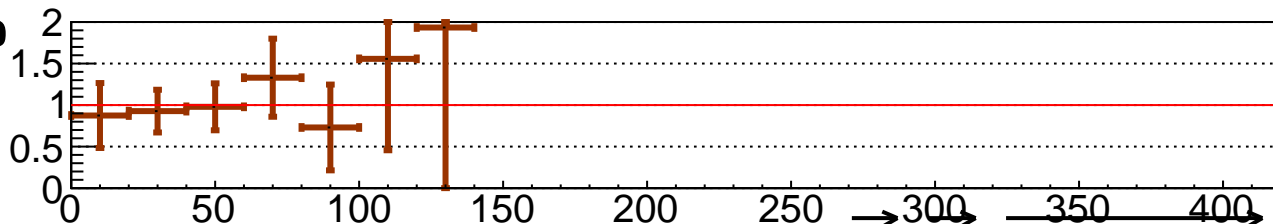
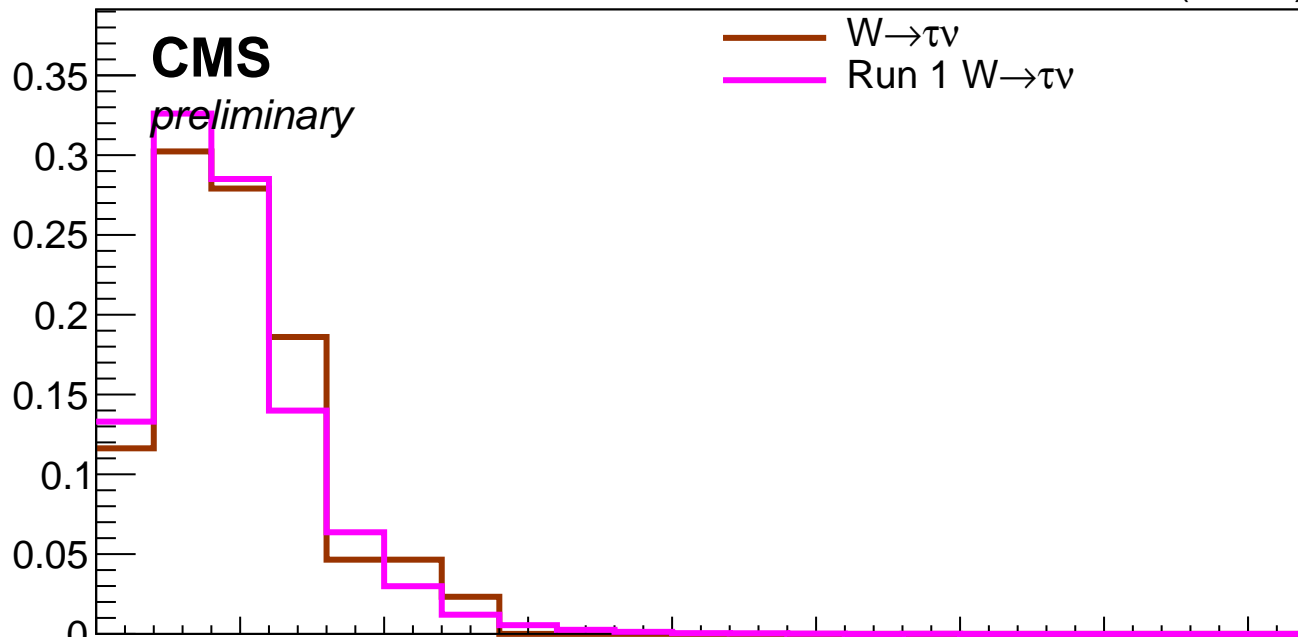
preliminary

— $W \rightarrow \tau \nu$

— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

$p_T(ja+jb+METnoMu)$



19.2 fb⁻¹ (8 TeV)

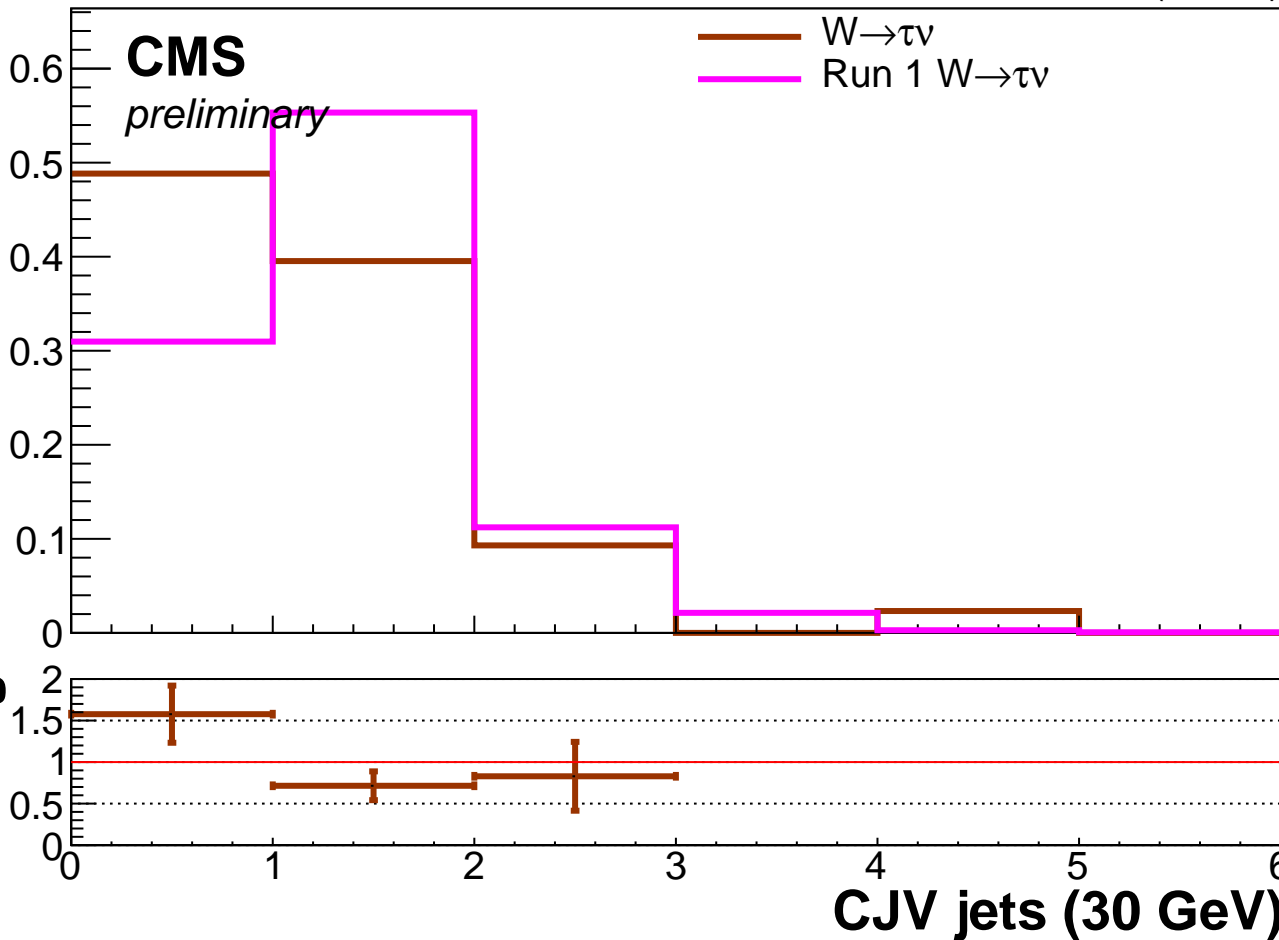
CMS

preliminary

— $W \rightarrow \tau \nu$
— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

CJV jets (30 GeV)



19.2 fb⁻¹ (8 TeV)

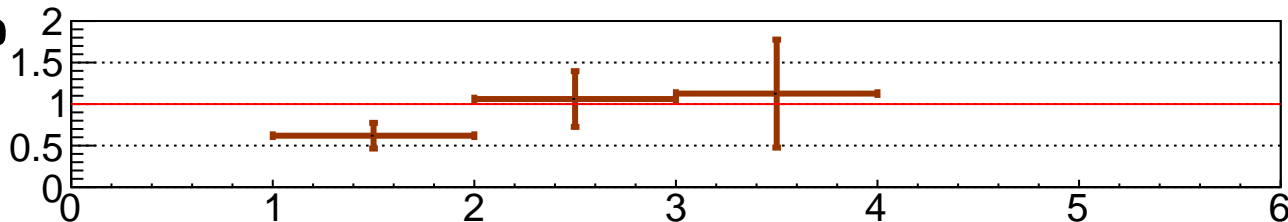
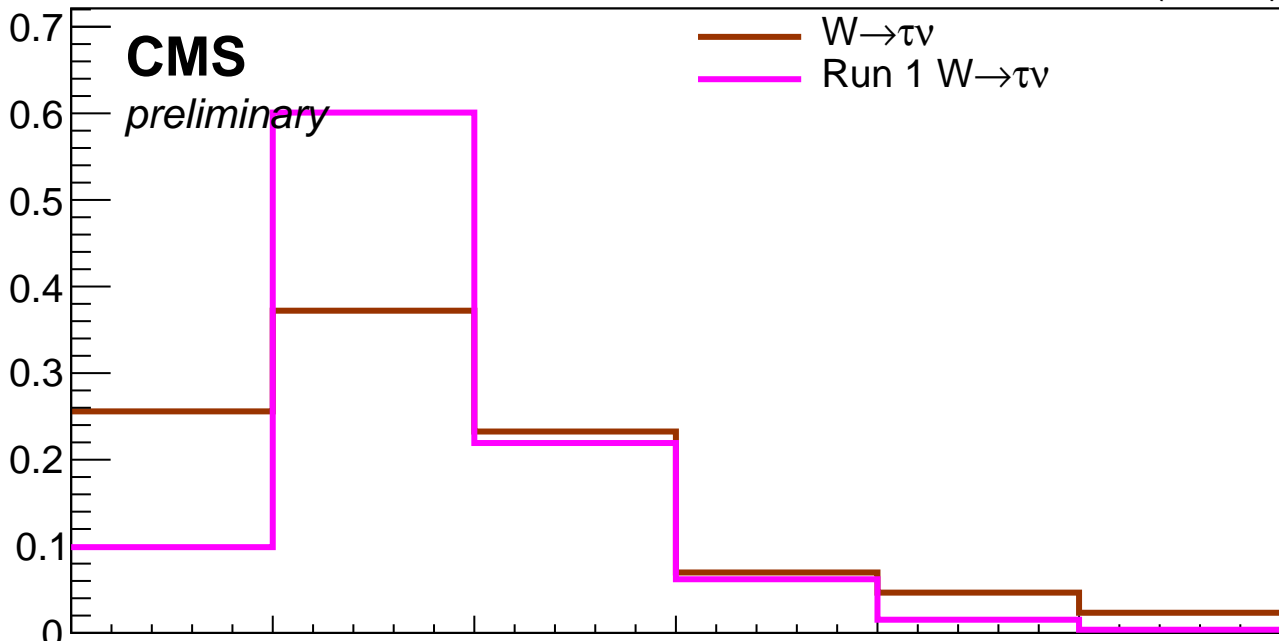
CMS

preliminary

— $W \rightarrow \tau \nu$
— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

CJV jets (20 GeV EB, 30 GeV EE)



19.2 fb⁻¹ (8 TeV)

CMS

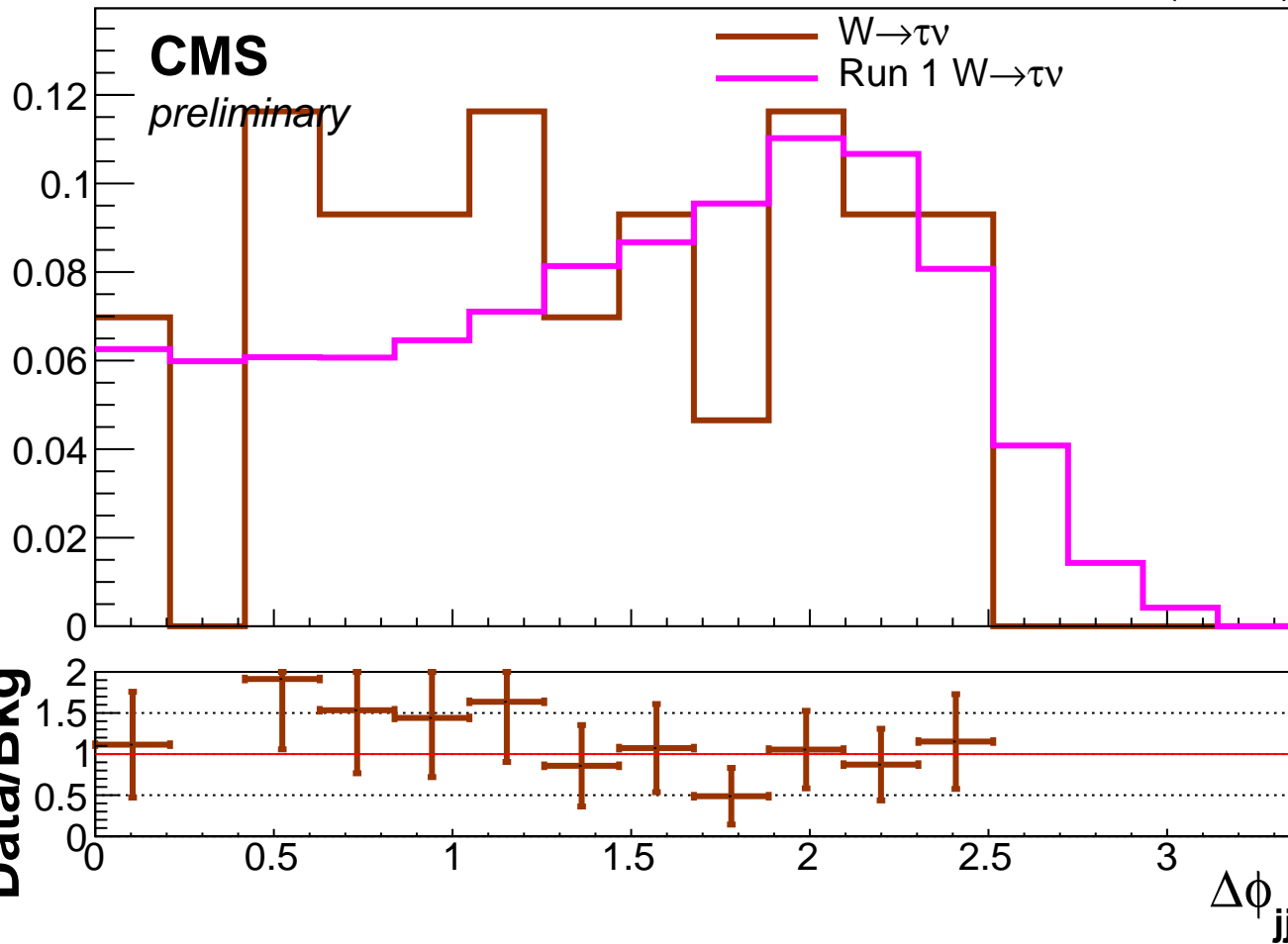
preliminary

— $W \rightarrow \tau \nu$

— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

$\Delta\phi_{jj}$



19.2 fb⁻¹ (8 TeV)

CMS

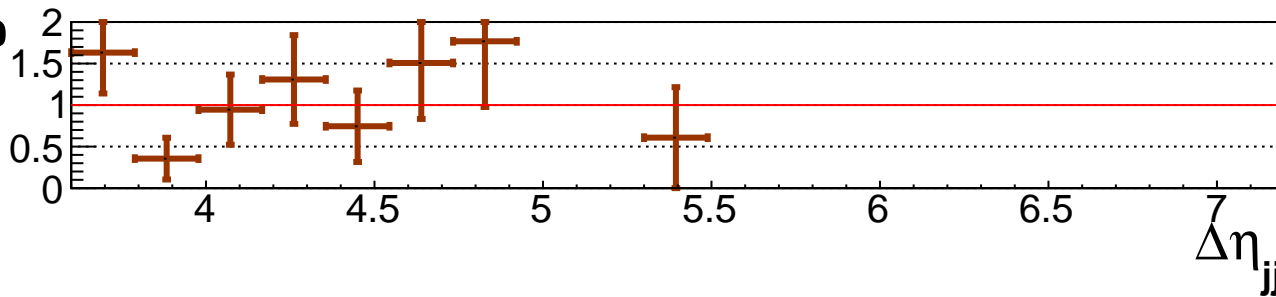
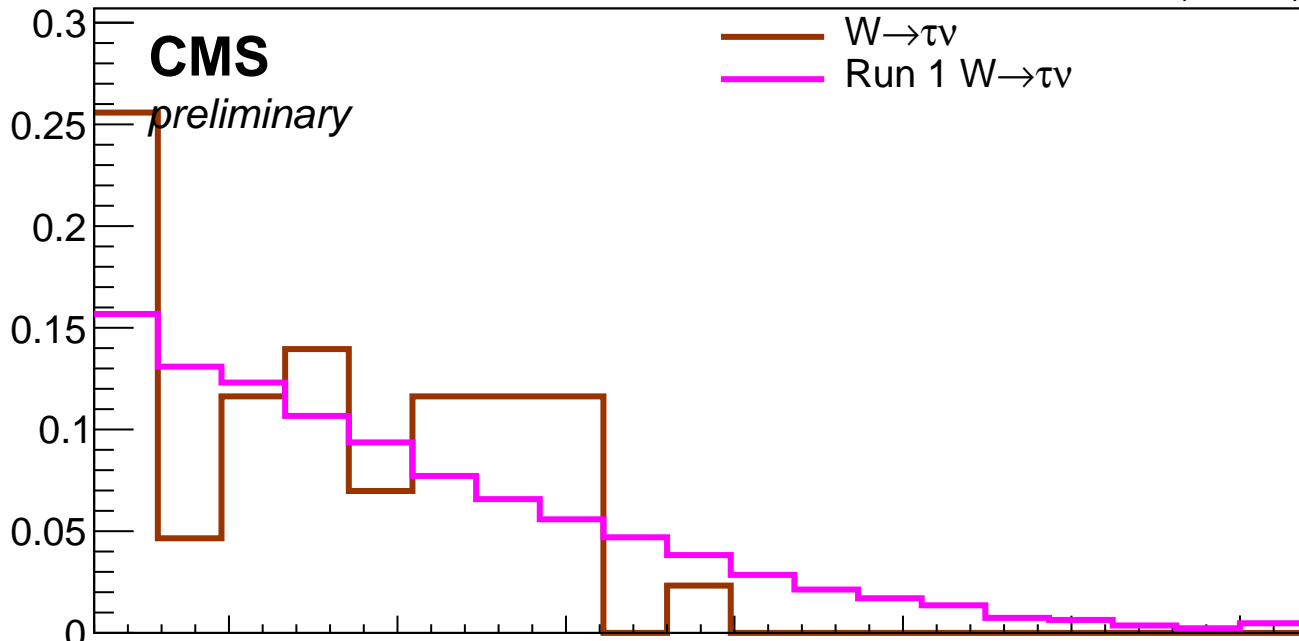
preliminary

— $W \rightarrow \tau \nu$

— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

$\Delta\eta_{jj}$



19.2 fb⁻¹ (8 TeV)

CMS

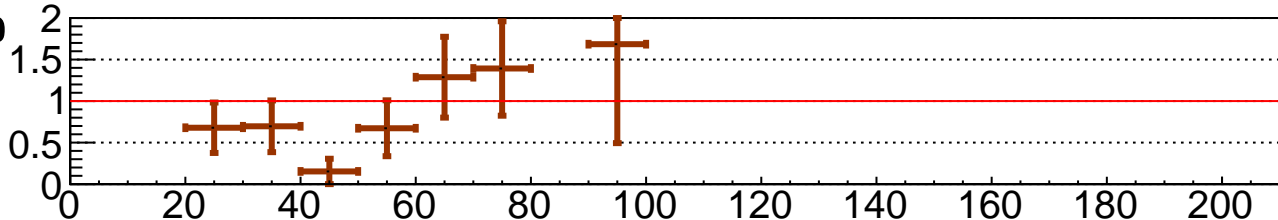
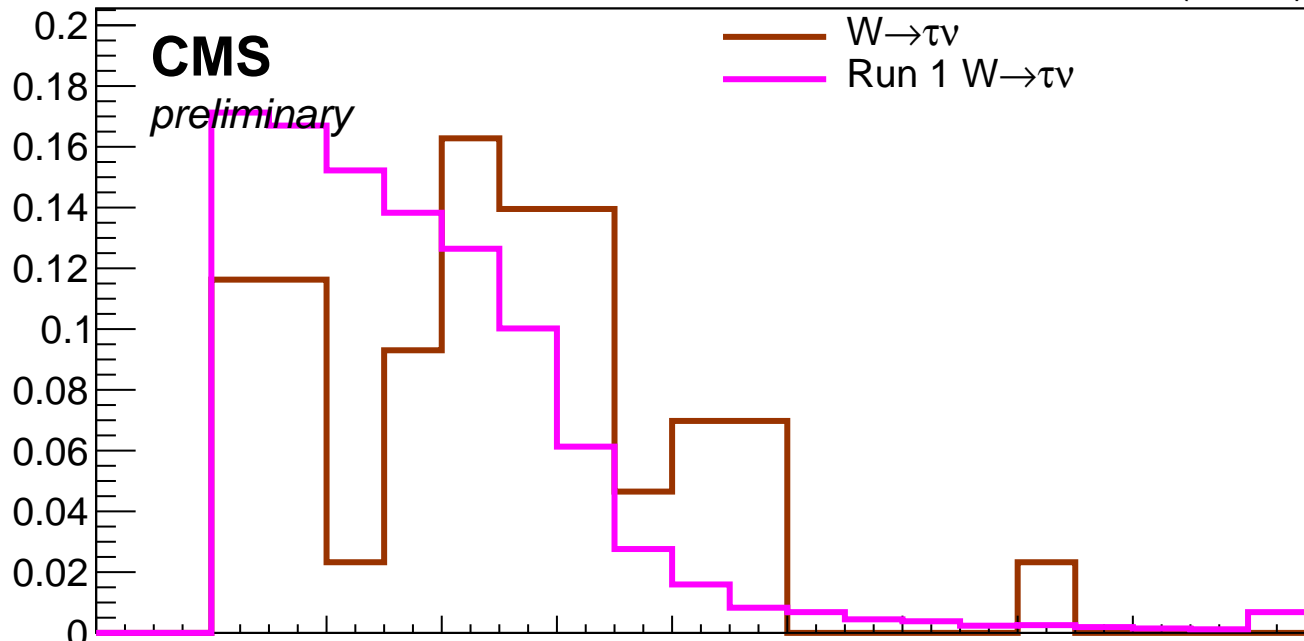
preliminary

— $W \rightarrow \tau \nu$

— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

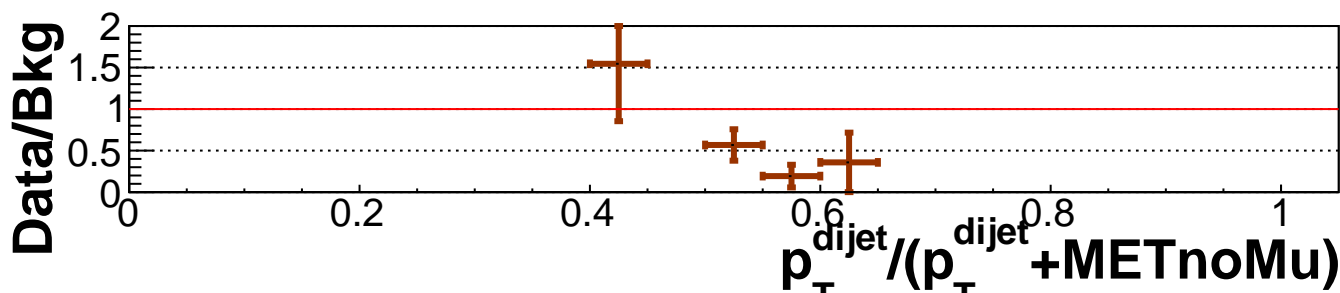
$m_T(\text{lepton}+\text{MET})$ (GeV)



19.2 fb⁻¹ (8 TeV)

CMS
preliminary

— $W \rightarrow \tau \nu$
— Run 1 $W \rightarrow \tau \nu$



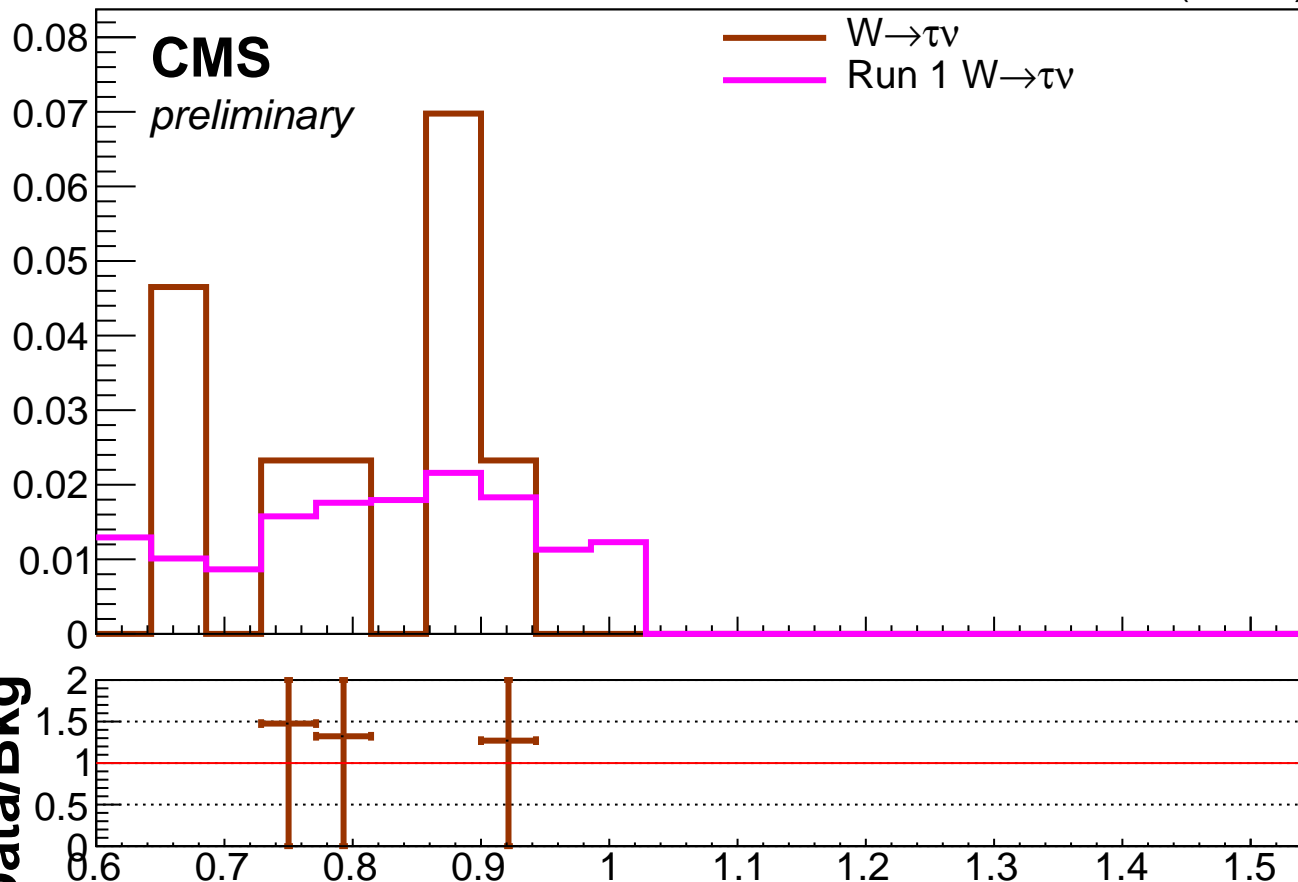
19.2 fb⁻¹ (8 TeV)

CMS
preliminary

— $W \rightarrow \tau \nu$
— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

Jet 1 CSV

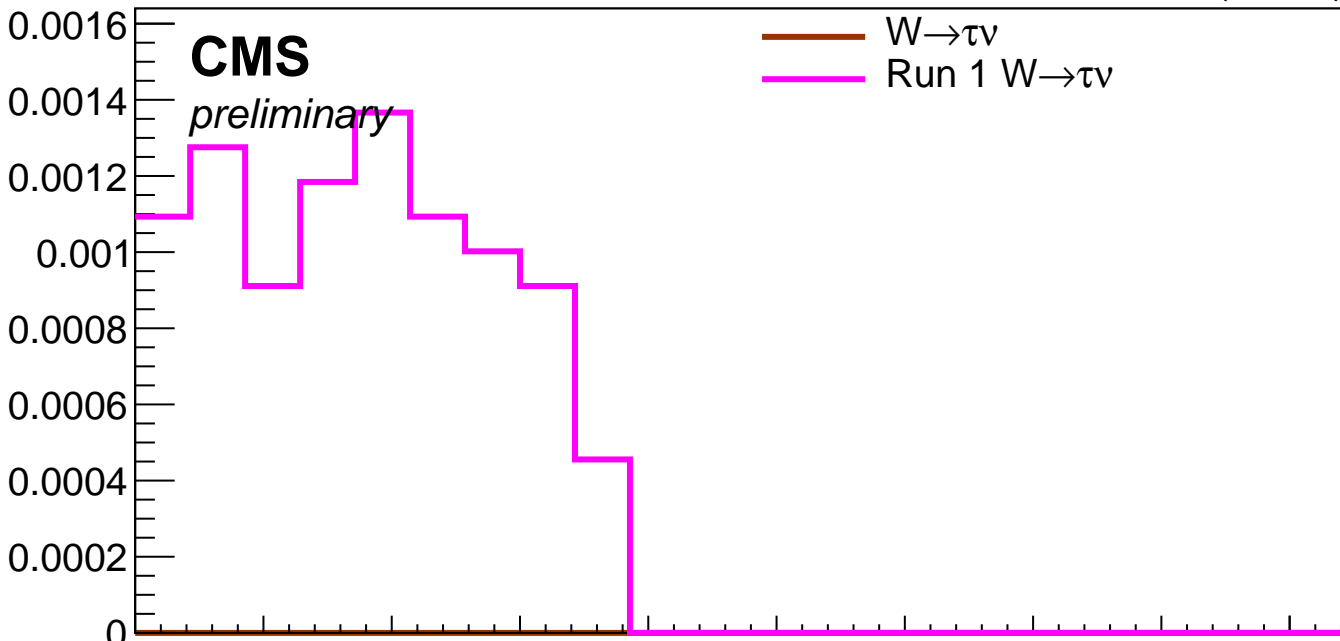


19.2 fb⁻¹ (8 TeV)

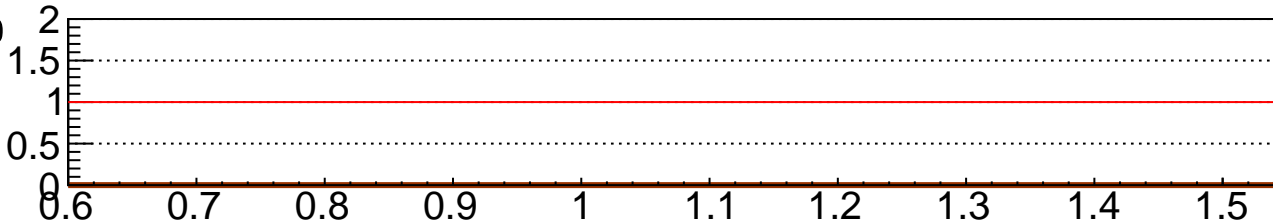
CMS

preliminary

— $W \rightarrow \tau \nu$
— Run 1 $W \rightarrow \tau \nu$



Data/Bkg



Jet 2 CSV

19.2 fb⁻¹ (8 TeV)

CMS

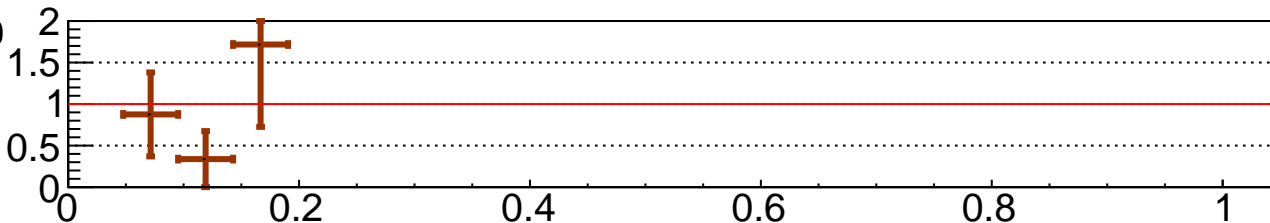
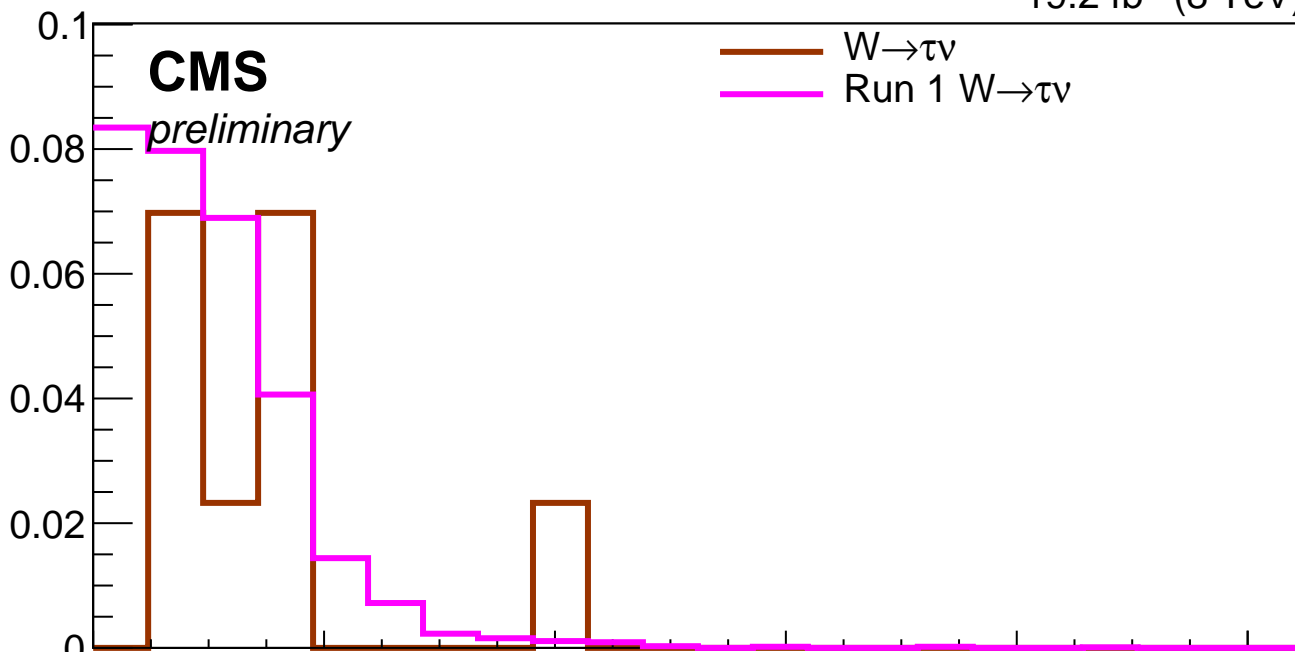
preliminary

— $W \rightarrow \tau \nu$

— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

Jet 3 CSV



19.2 fb⁻¹ (8 TeV)

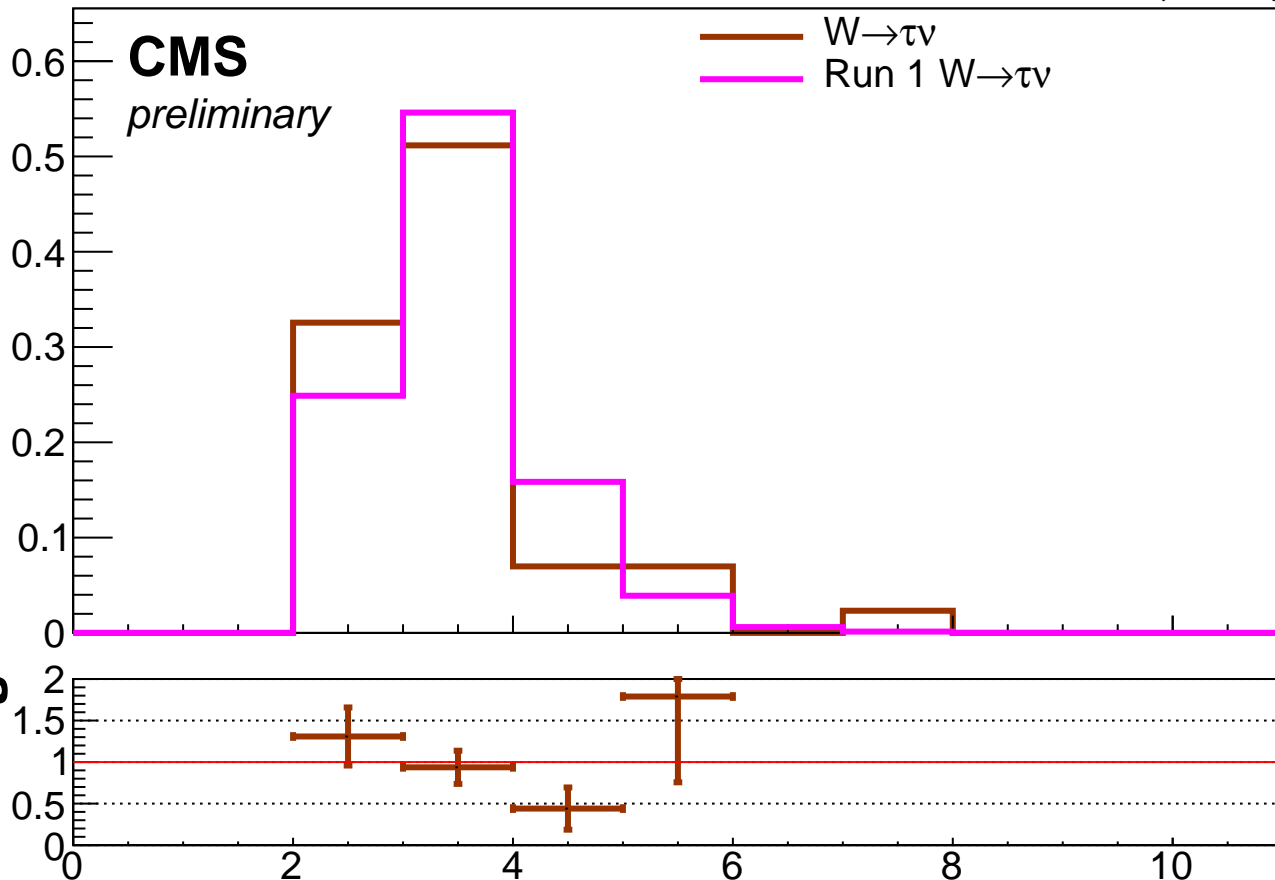
CMS

preliminary

— $W \rightarrow \tau \nu$
— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

N jets pt>30 GeV



19.2 fb⁻¹ (8 TeV)

CMS

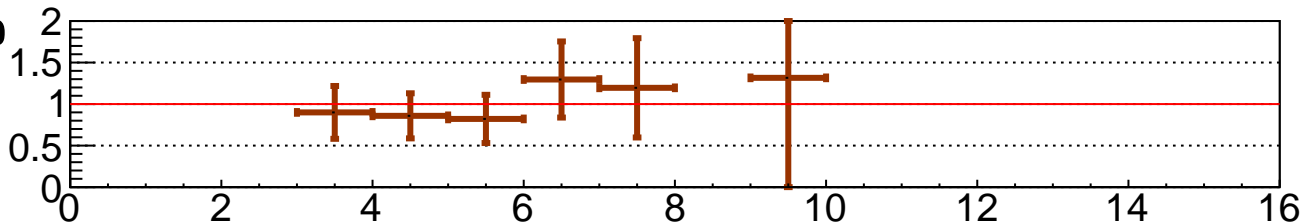
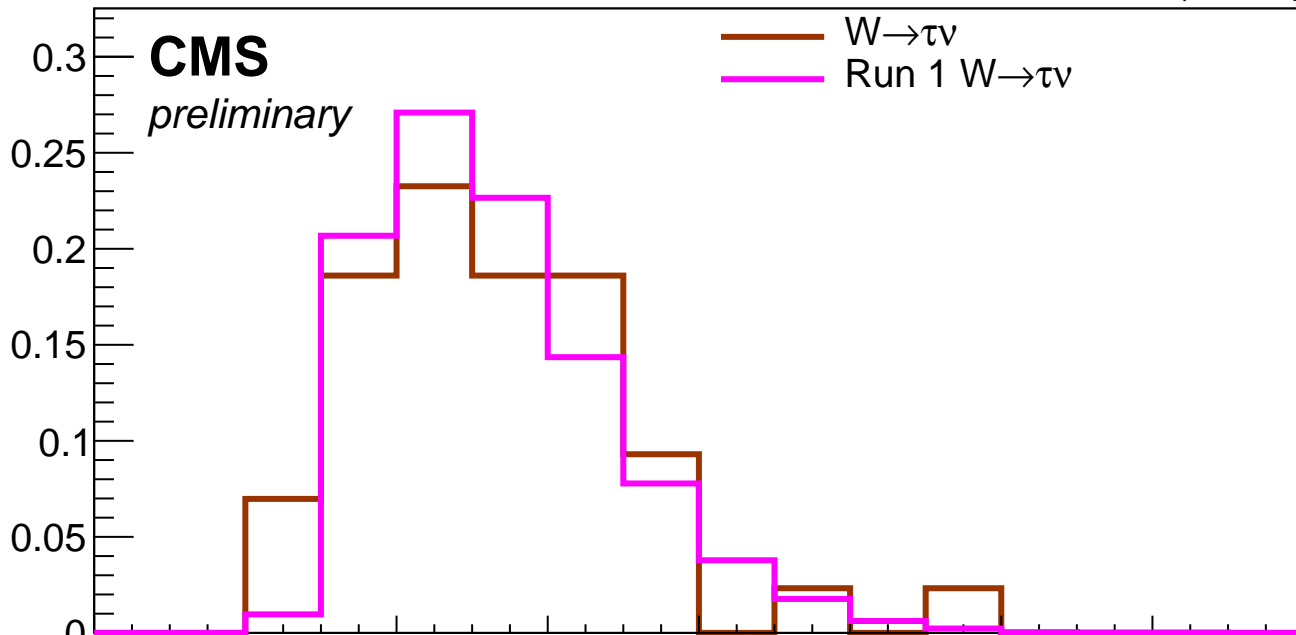
preliminary

— $W \rightarrow \tau \nu$

— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

N jets pt>15 GeV



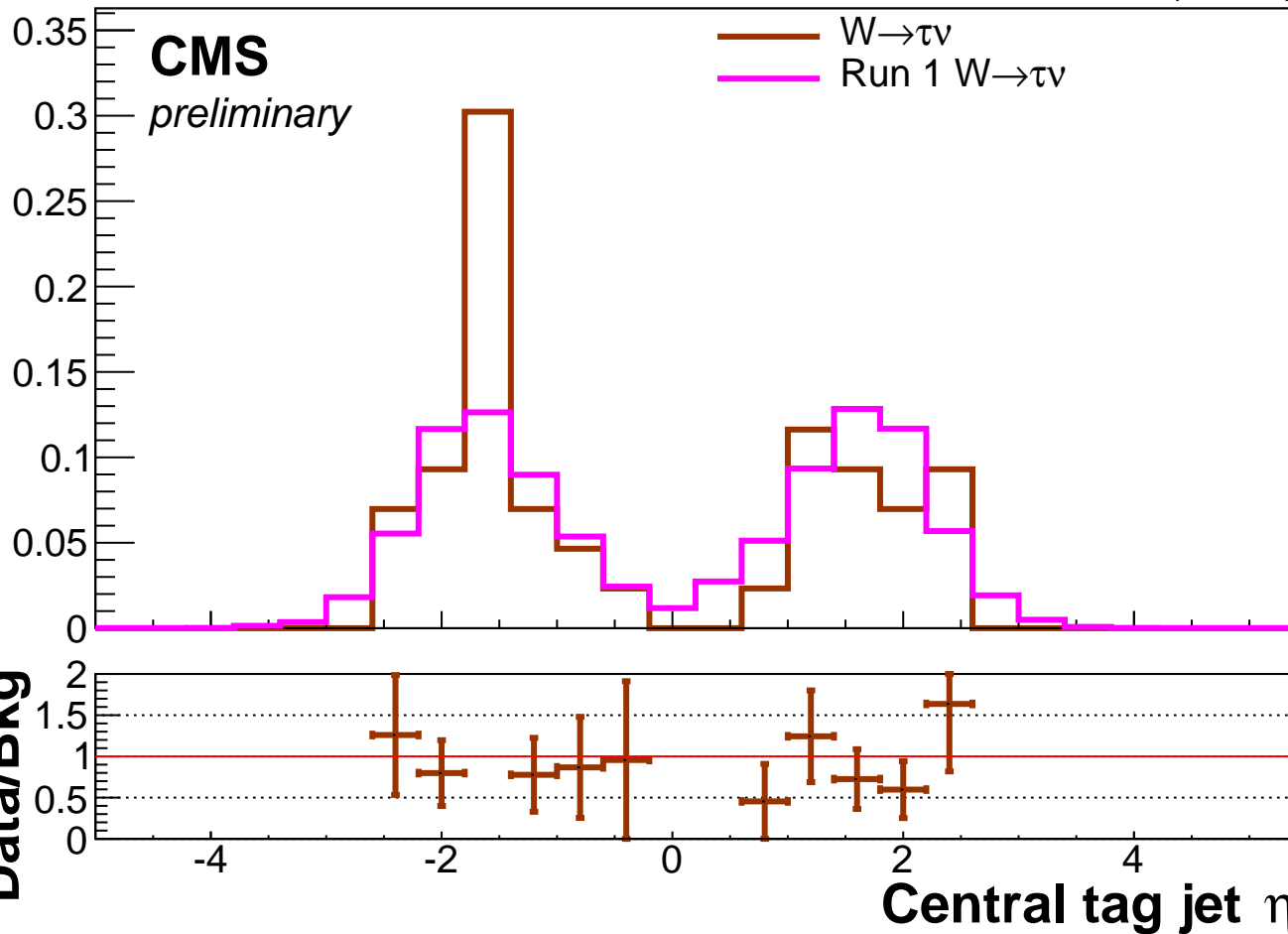
19.2 fb⁻¹ (8 TeV)

CMS
preliminary

— $W \rightarrow \tau \nu$
— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

Central tag jet η



19.2 fb⁻¹ (8 TeV)

CMS

preliminary

— $W \rightarrow \tau \nu$
— Run 1 $W \rightarrow \tau \nu$

Data/Bkg

Forward tag jet η

