

19.2 fb⁻¹ (8 TeV)

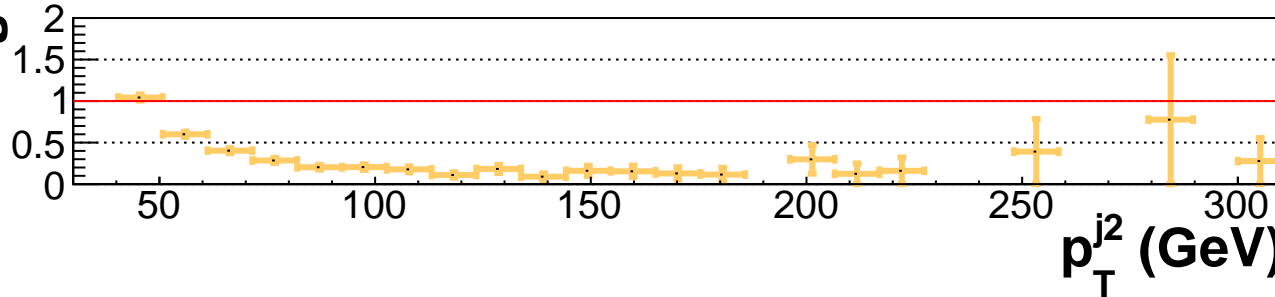
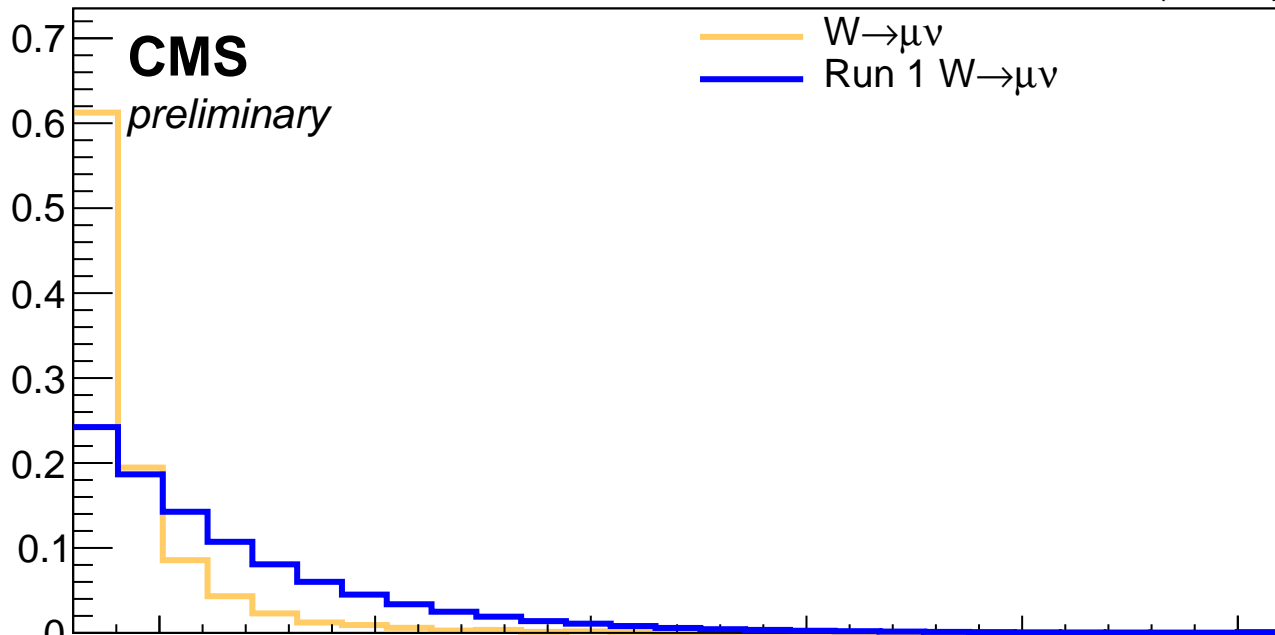
CMS

preliminary

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

Data/Bkg

p_T^{j2} (GeV)



19.2 fb⁻¹ (8 TeV)

CMS

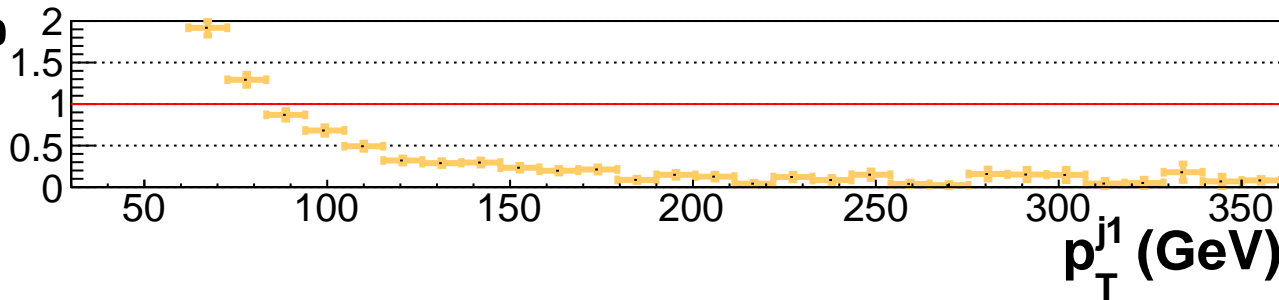
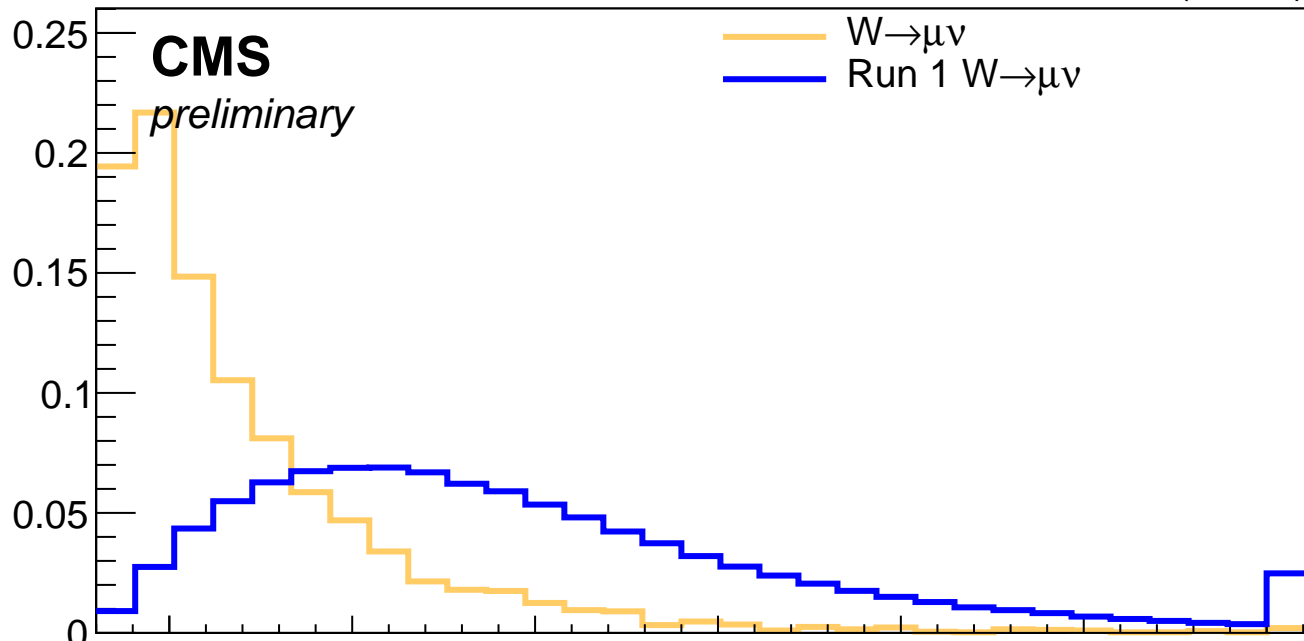
preliminary

— $W \rightarrow \mu \nu$

— Run 1 $W \rightarrow \mu \nu$

Data/Bkg

p_T^{j1} (GeV)



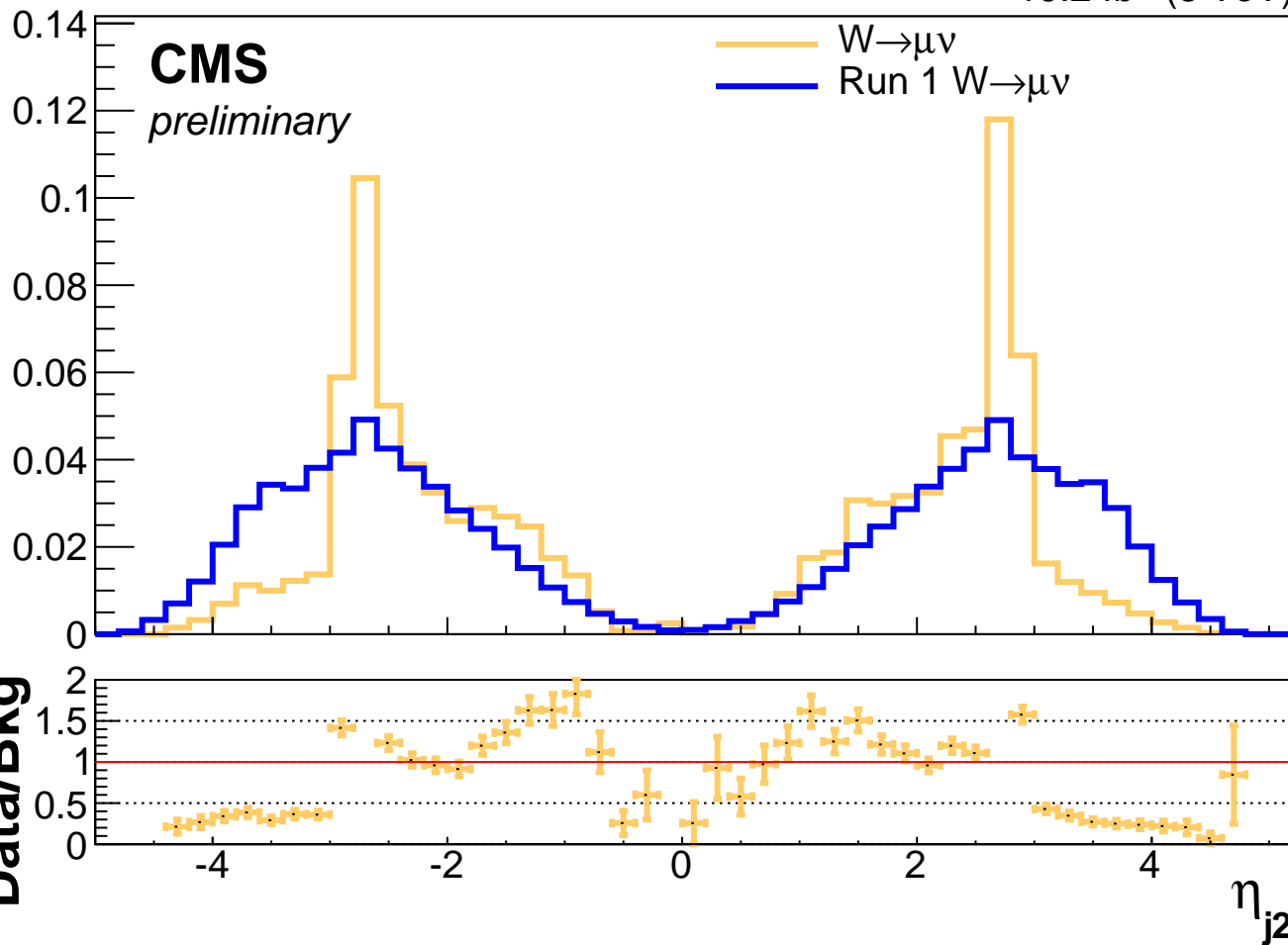
19.2 fb⁻¹ (8 TeV)

CMS
preliminary

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

Data/Bkg

η_{j2}



19.2 fb⁻¹ (8 TeV)

CMS

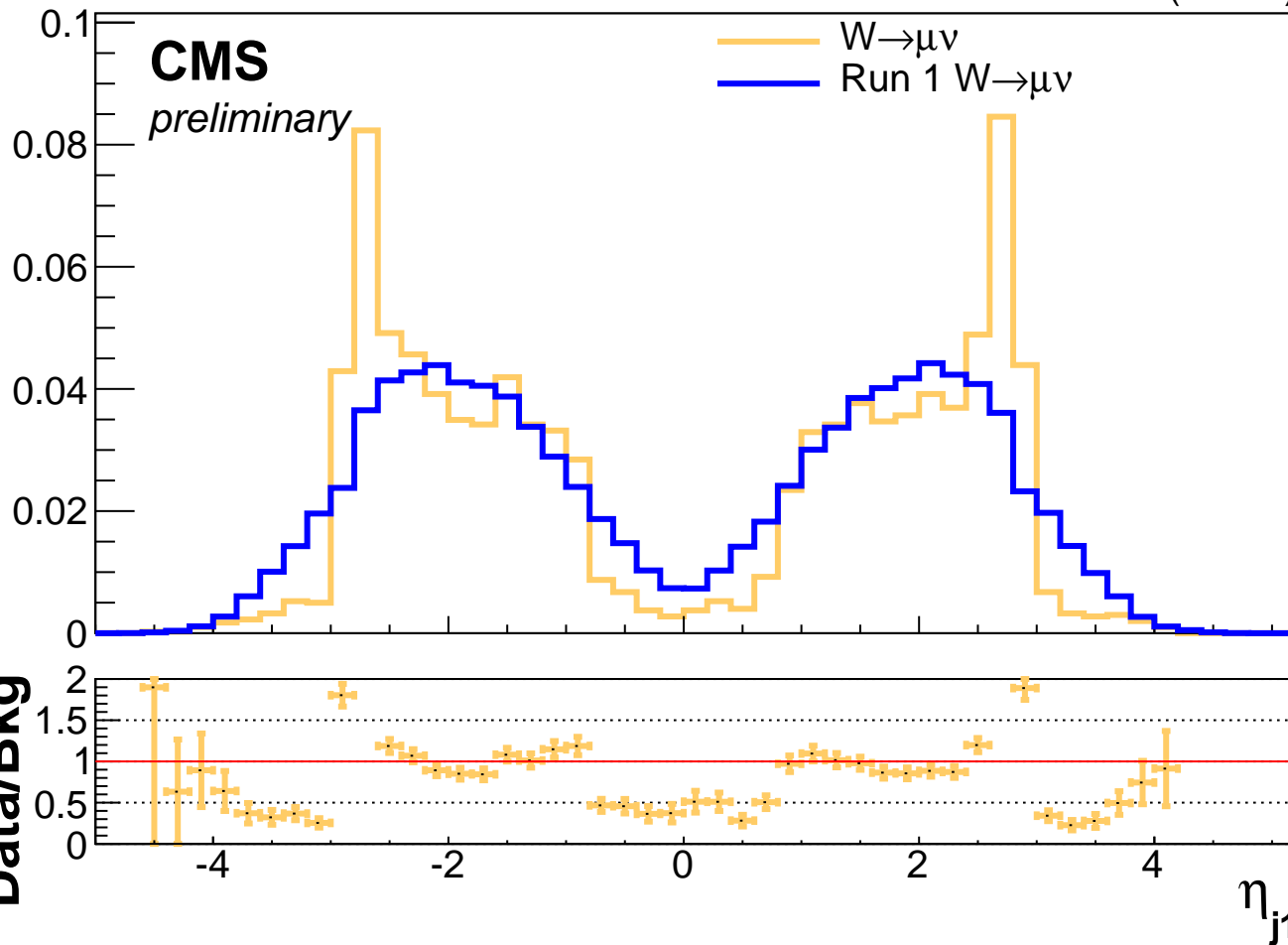
preliminary

W→μν

Run 1 W→μν

Data/Bkg

η_{j1}



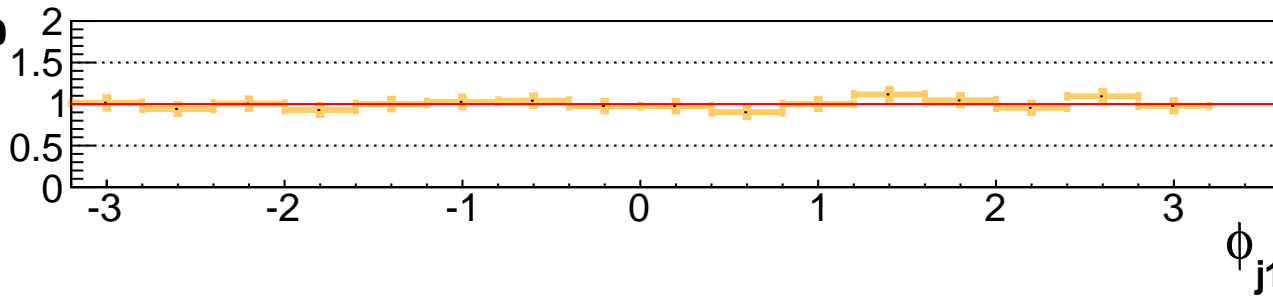
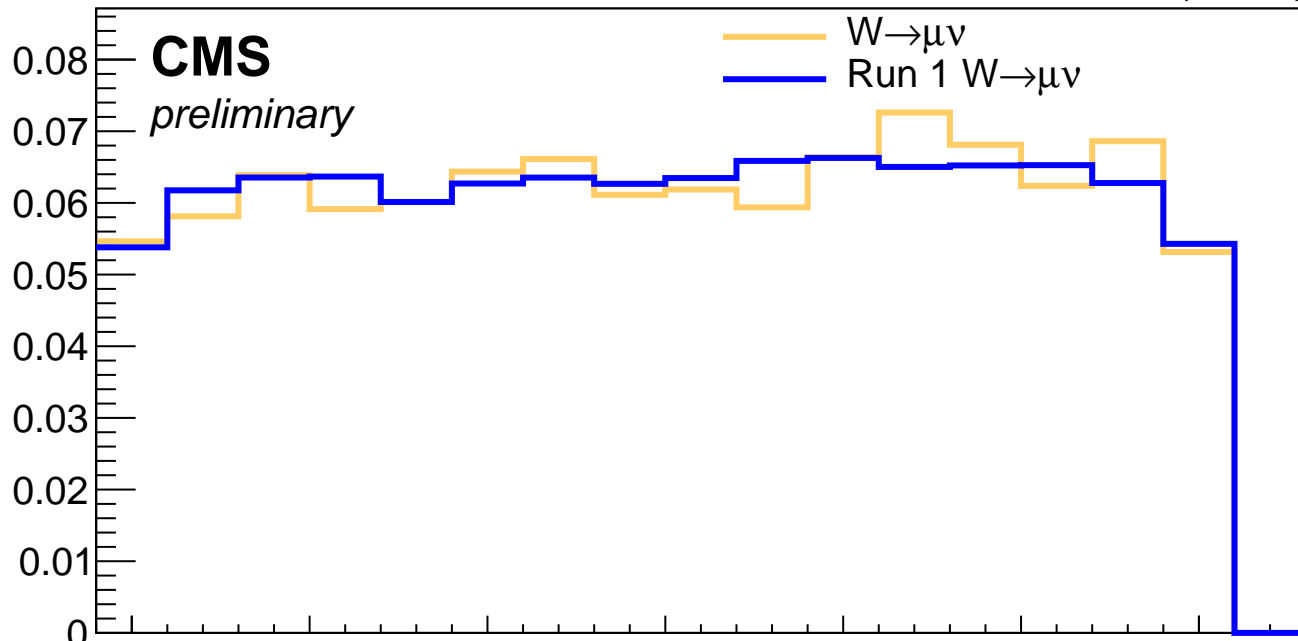
19.2 fb⁻¹ (8 TeV)

CMS
preliminary

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

Data/Bkg

ϕ_{j1}



19.2 fb⁻¹ (8 TeV)

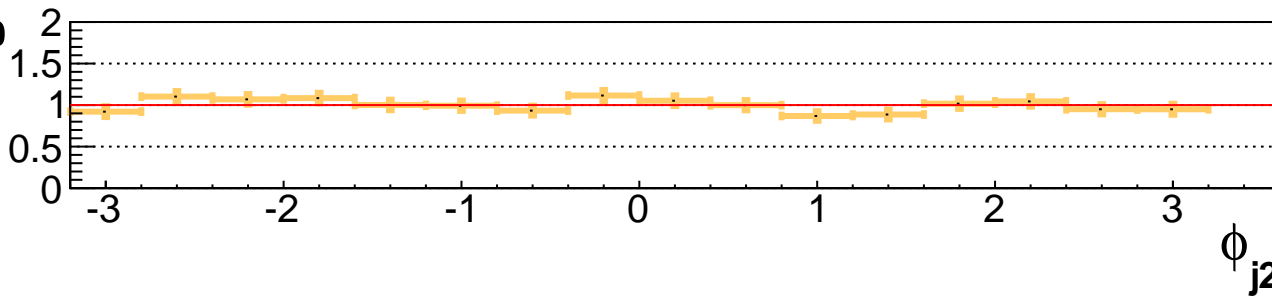
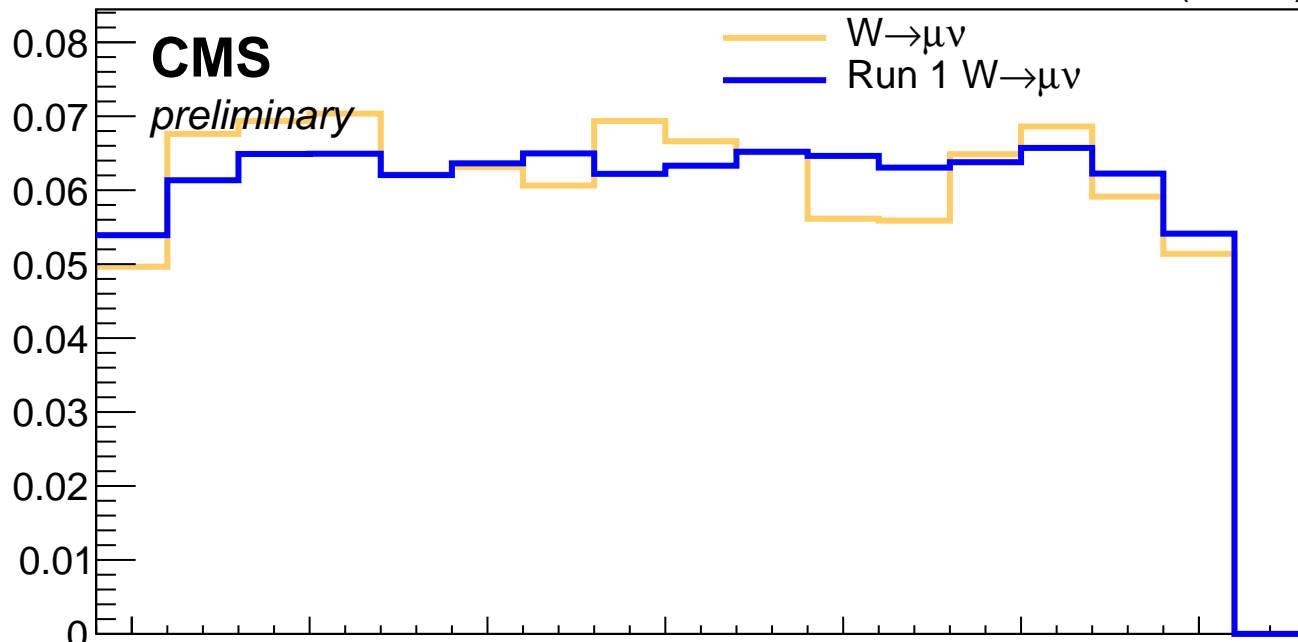
CMS

preliminary

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

Data/Bkg

ϕ_{j2}



19.2 fb⁻¹ (8 TeV)

CMS

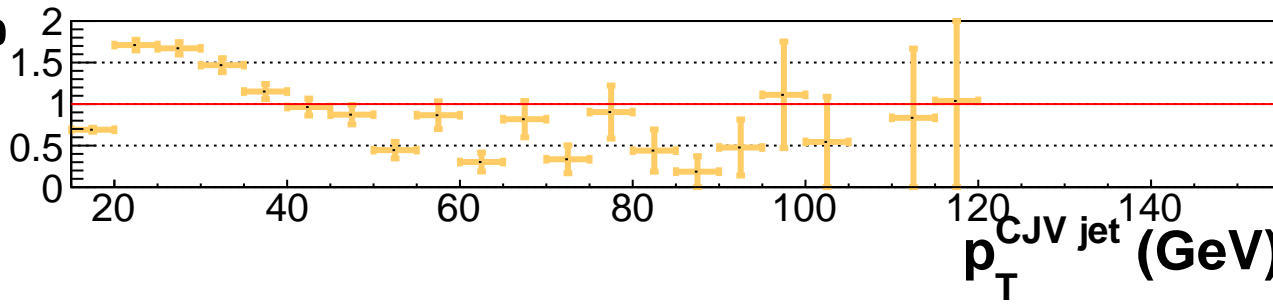
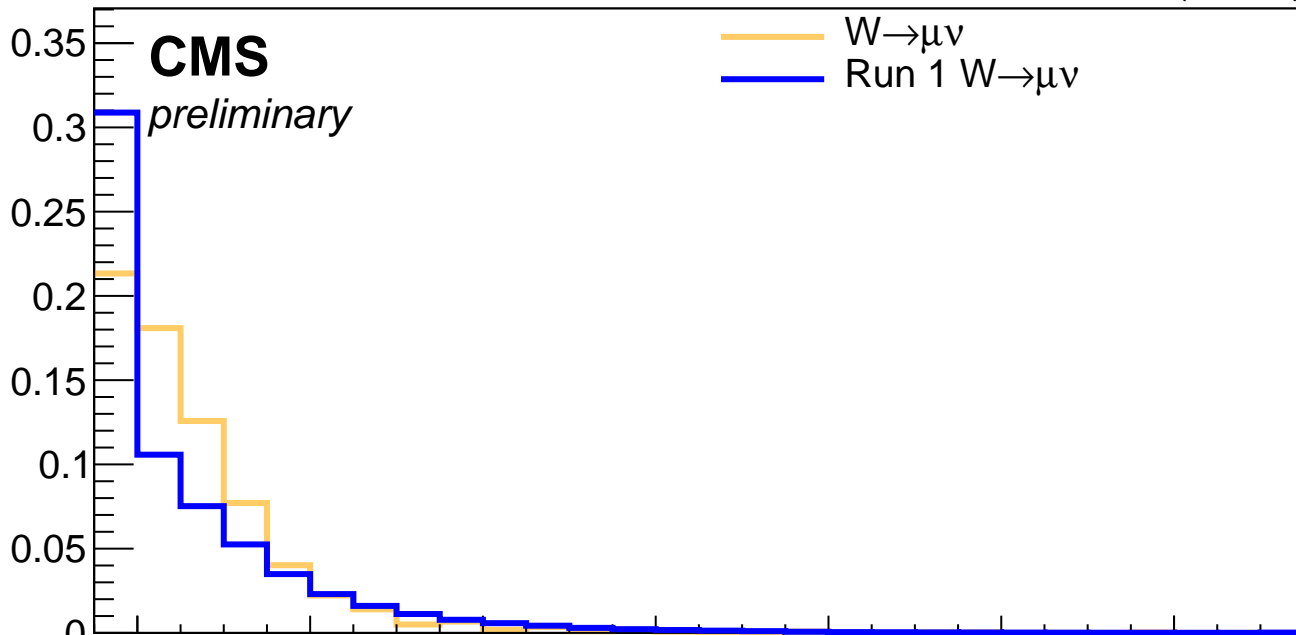
preliminary

W→μν

Run 1 W→μν

Data/Bkg

p_T^{CJV jet} (GeV)

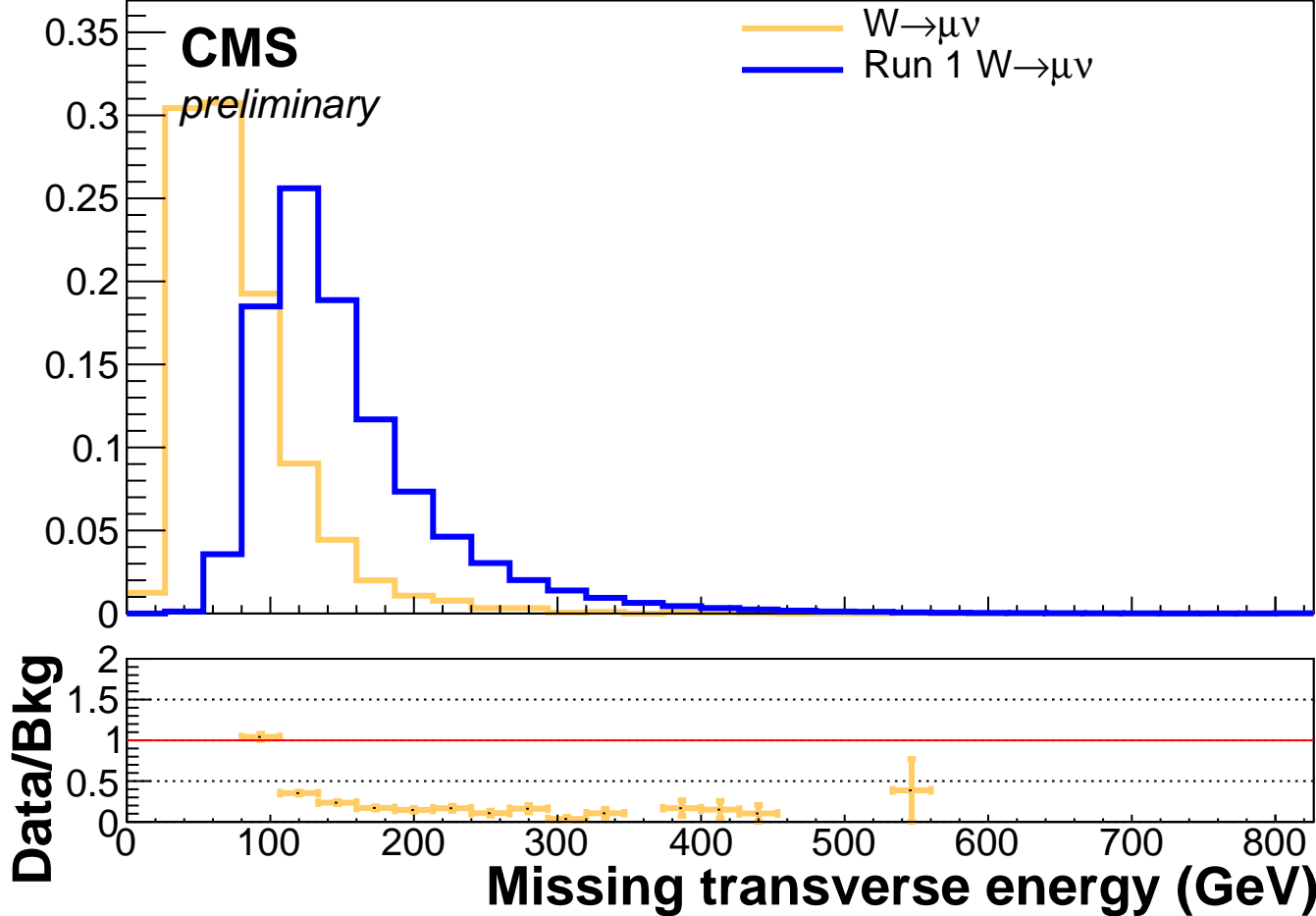


19.2 fb⁻¹ (8 TeV)

CMS

preliminary

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



19.2 fb⁻¹ (8 TeV)

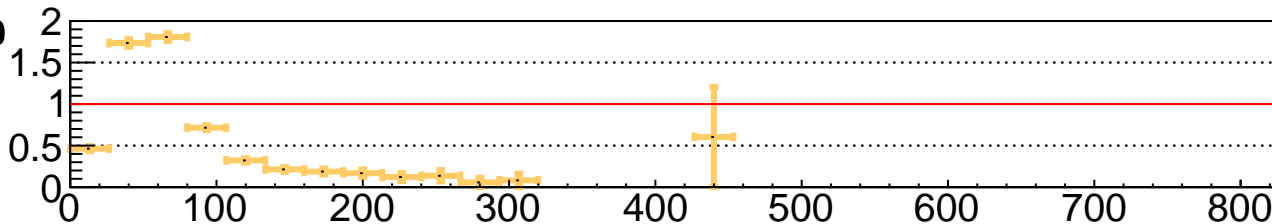
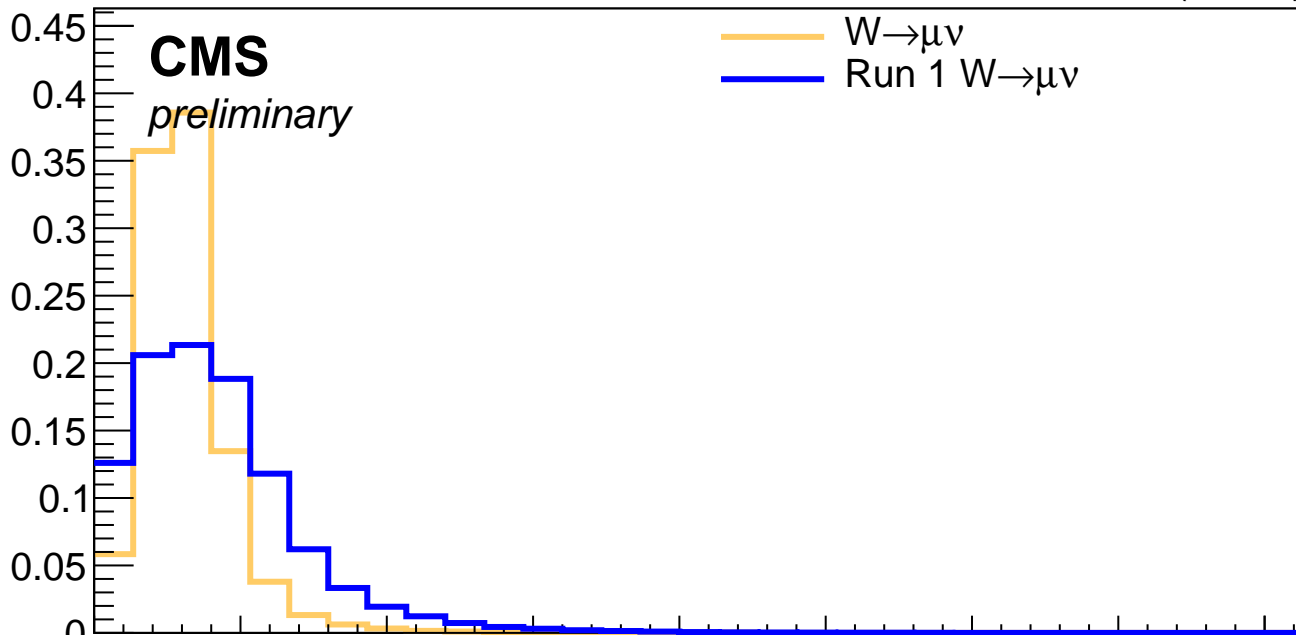
CMS

preliminary

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

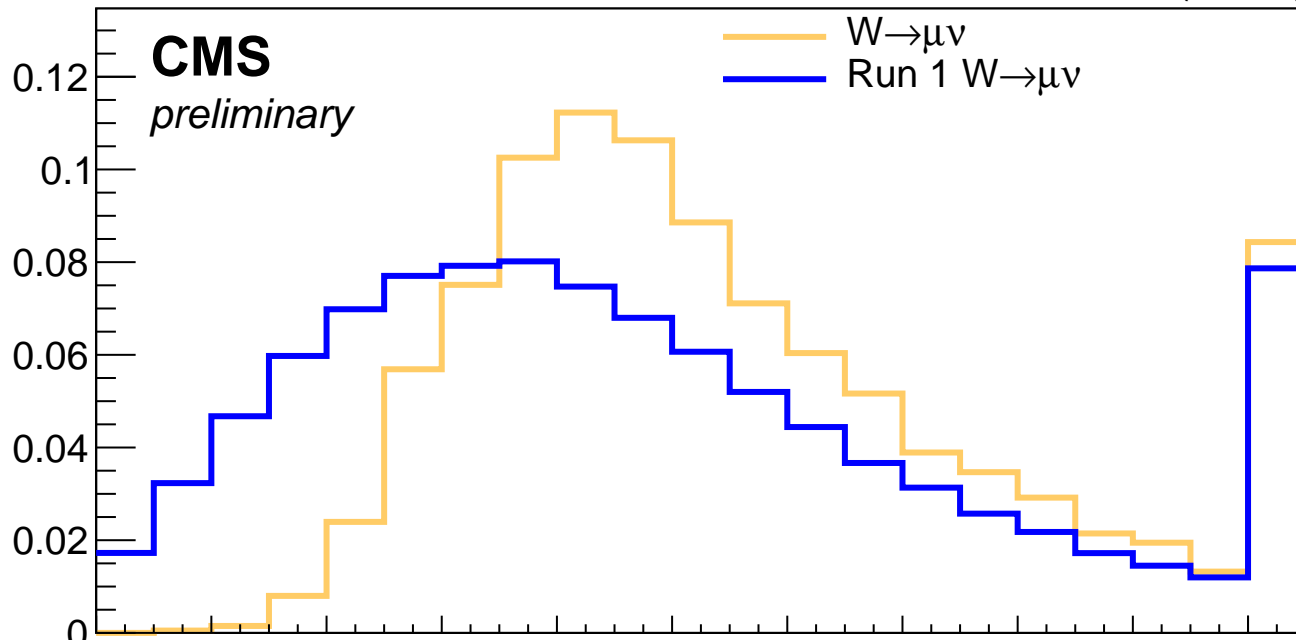
Data/Bkg

MET (GeV)

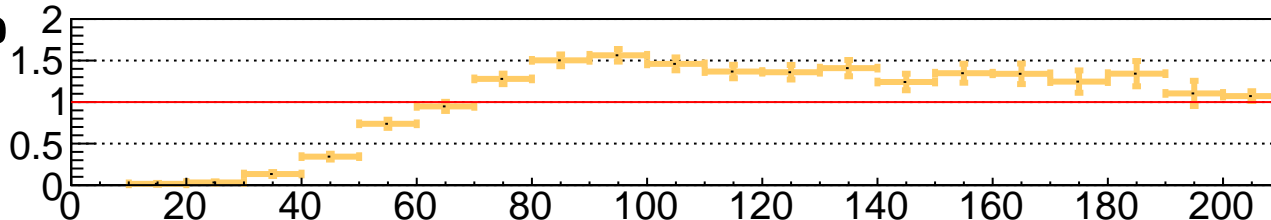


19.2 fb⁻¹ (8 TeV)

CMS
preliminary



Data/Bkg



L1MET (GeV)

19.2 fb⁻¹ (8 TeV)

CMS

preliminary

W→μν

Run 1 W→μν

0.25

0.2

0.15

0.1

0.05

0

Data/Bkg

2

1.5

1

0.5

0

M_{jj} (GeV)

0

500

1000

1500

2000

2500

3000

0

0.5

1

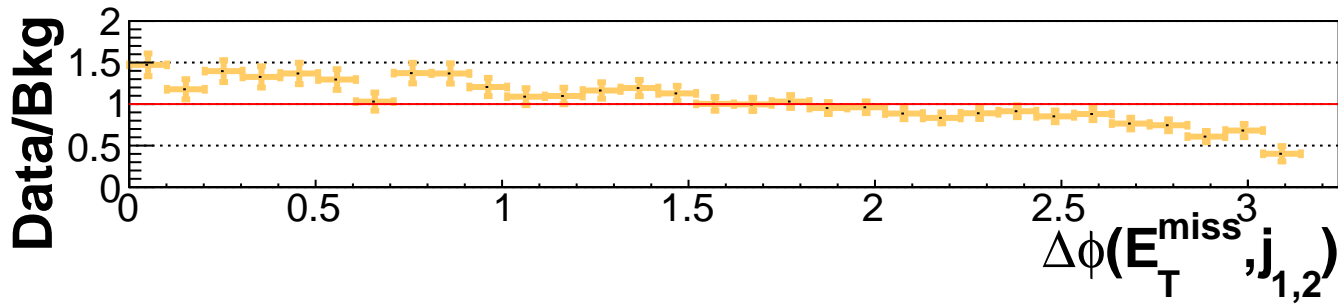
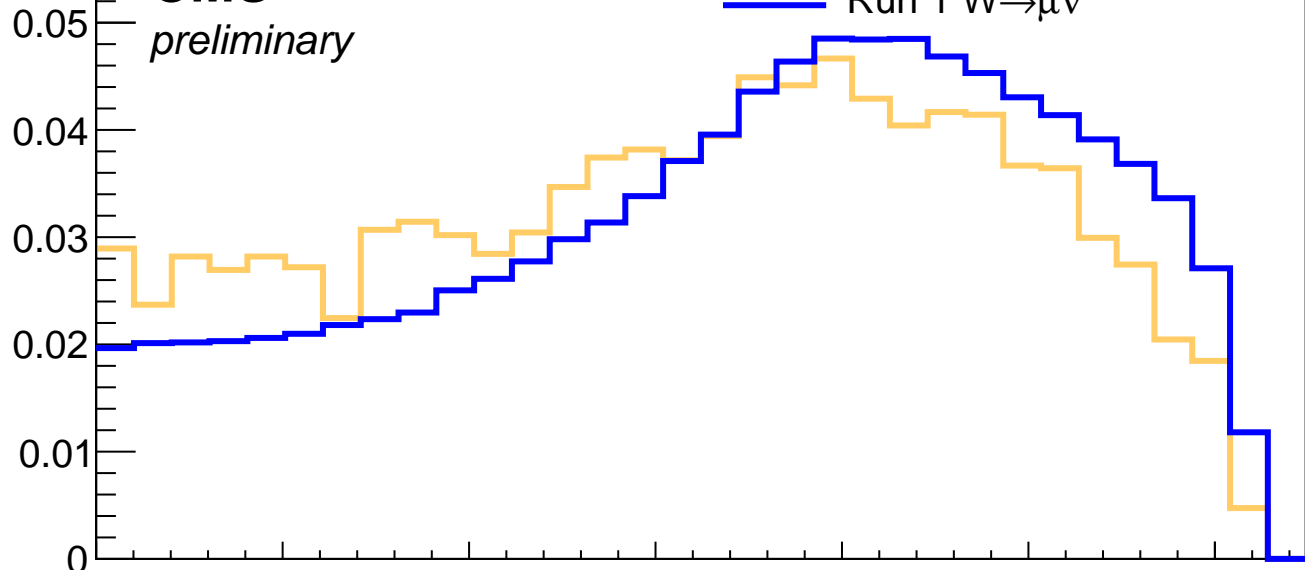
1.5

2

19.2 fb⁻¹ (8 TeV)

CMS
preliminary

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

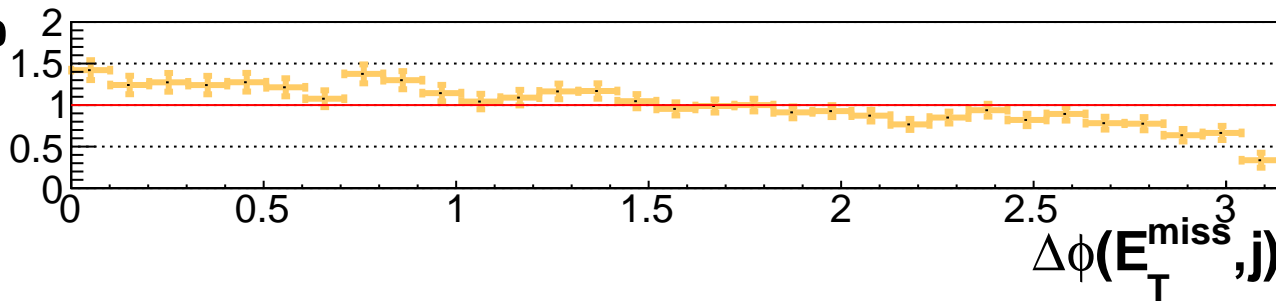
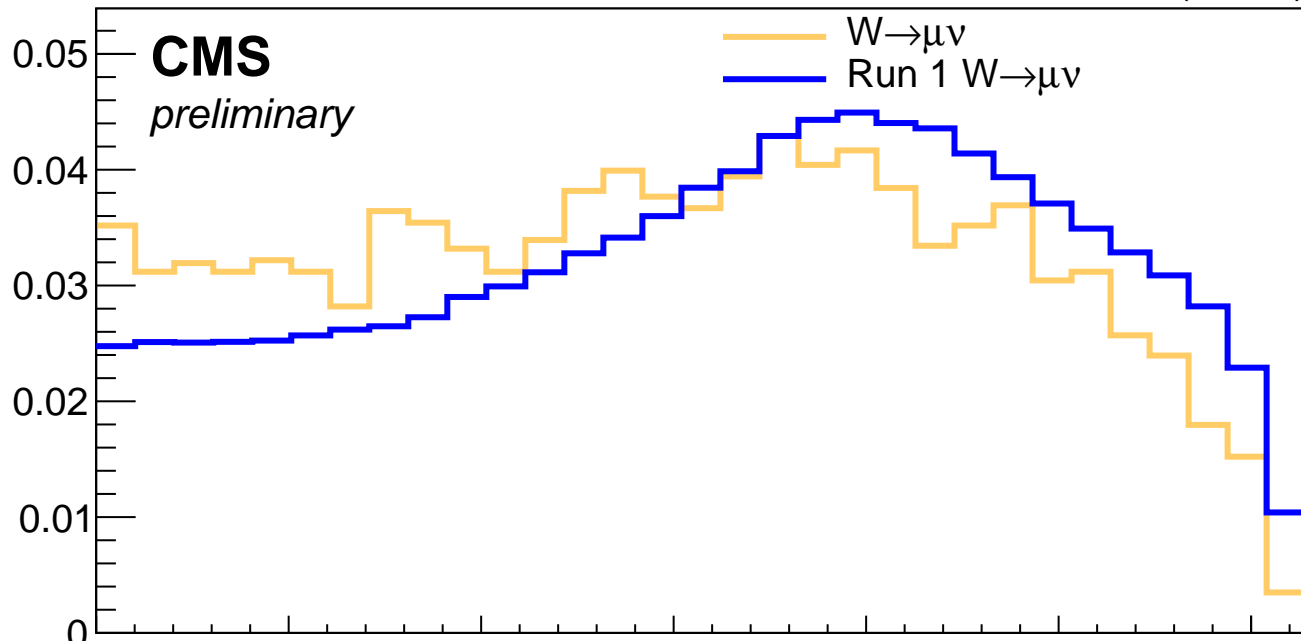


19.2 fb⁻¹ (8 TeV)

CMS
preliminary

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

Data/Bkg



19.2 fb⁻¹ (8 TeV)

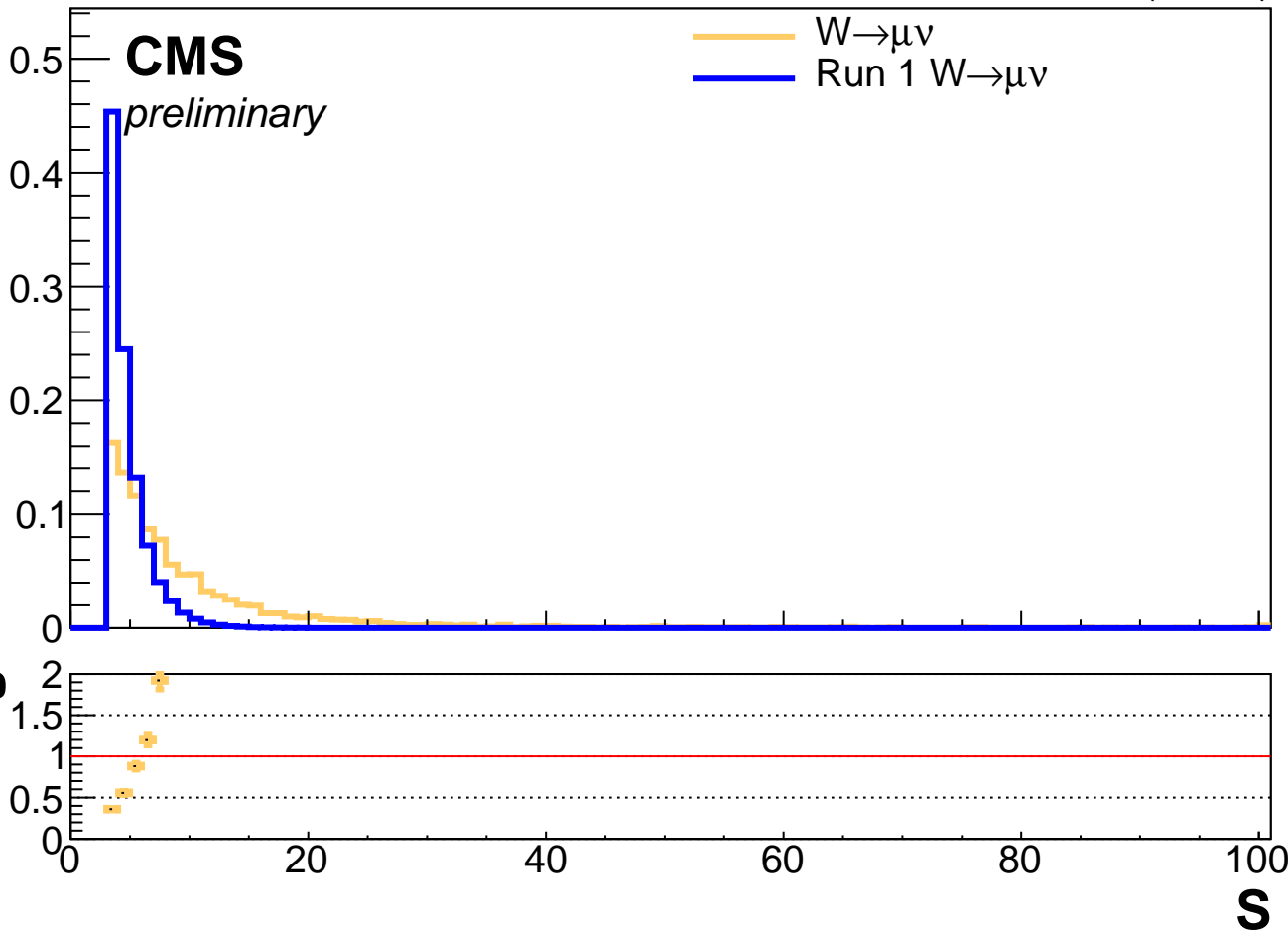
CMS

preliminary

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

Data/Bkg

S



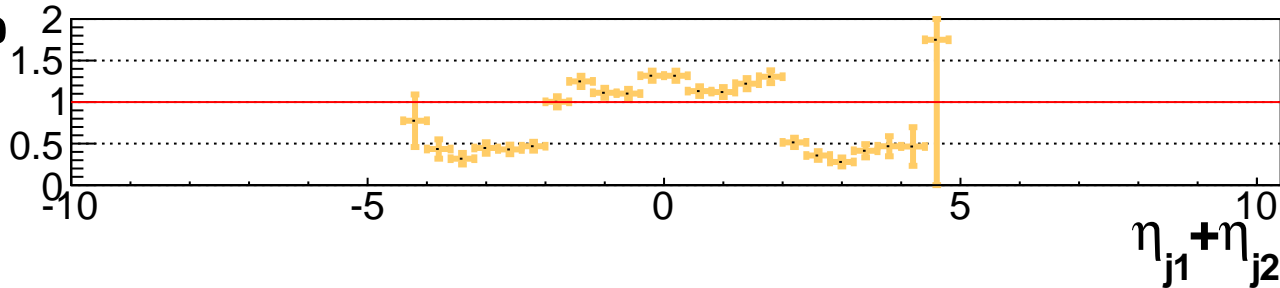
19.2 fb⁻¹ (8 TeV)

CMS
preliminary

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

0.12
0.1
0.08
0.06
0.04
0.02
0

Data/Bkg



19.2 fb⁻¹ (8 TeV)

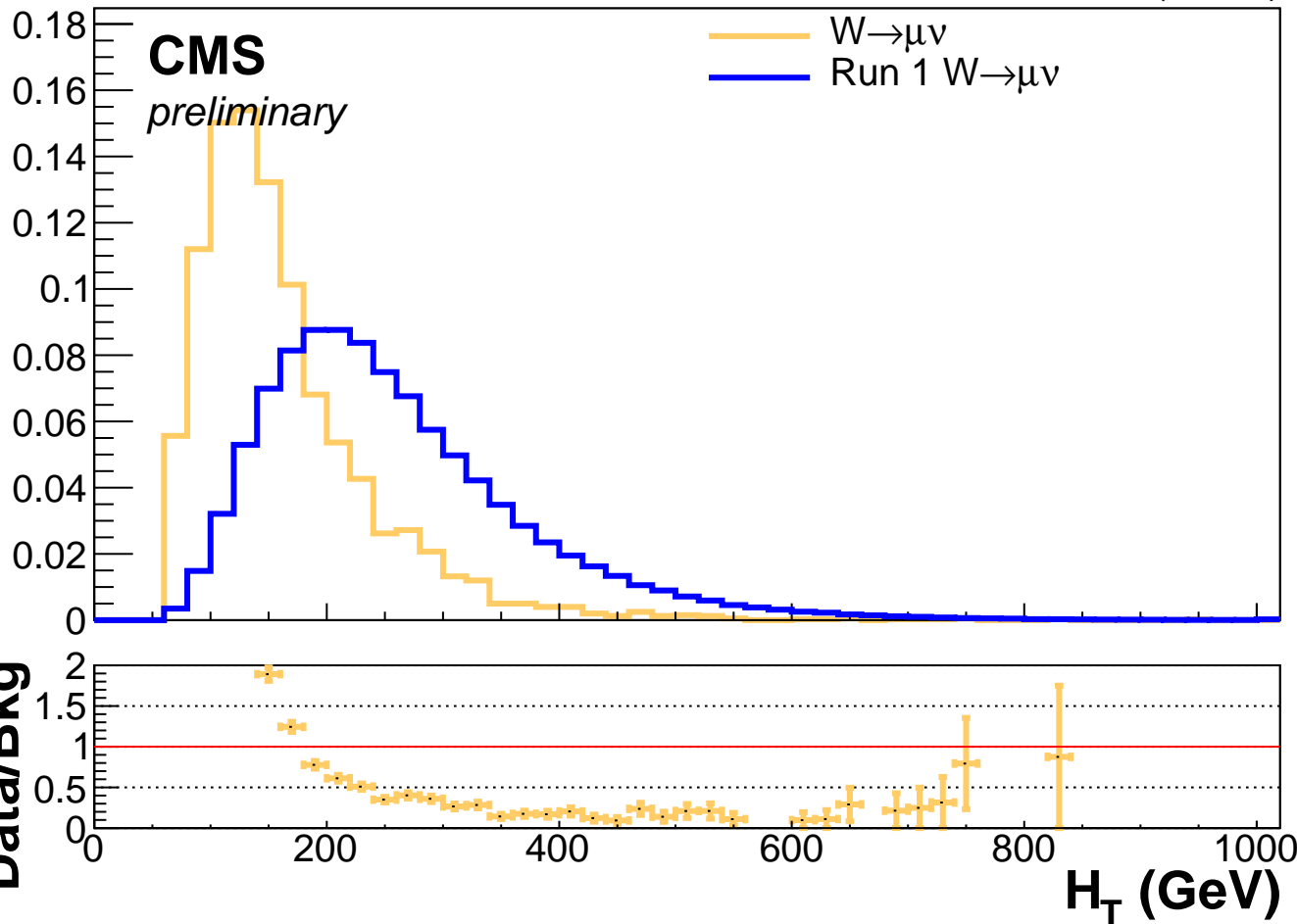
CMS

preliminary

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

Data/Bkg

H_T (GeV)



19.2 fb⁻¹ (8 TeV)

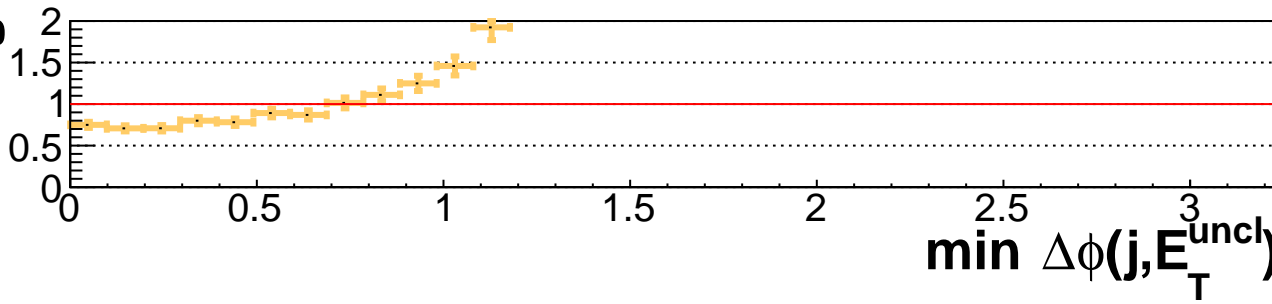
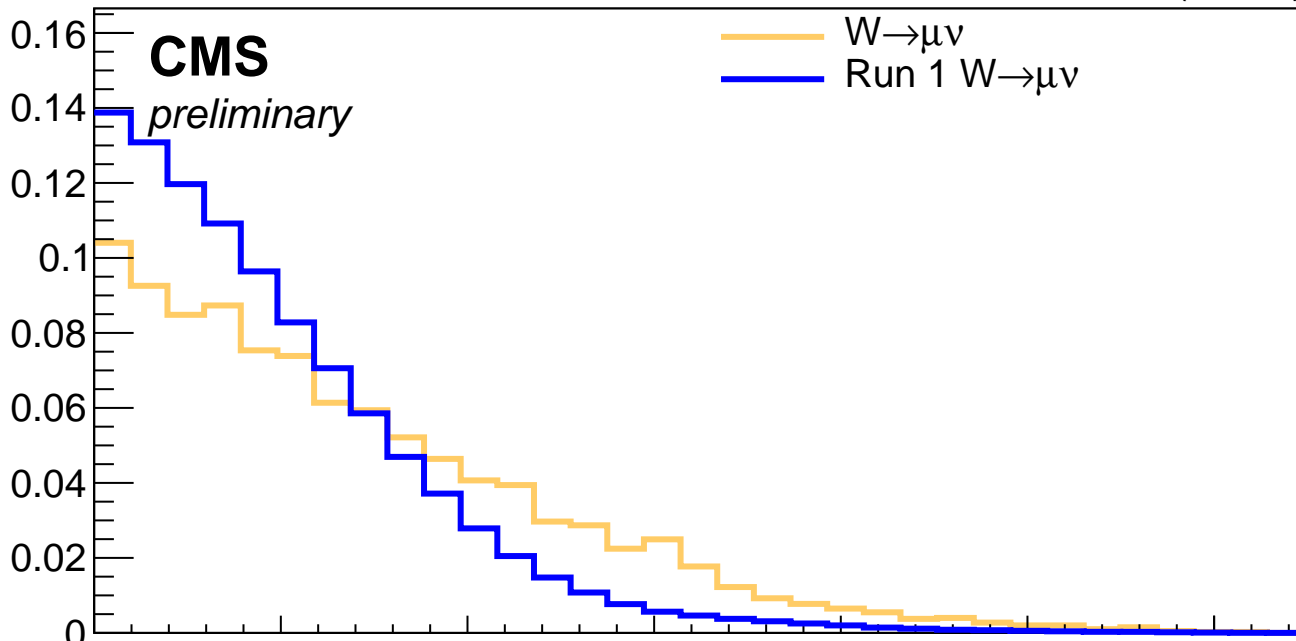
CMS

preliminary

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

Data/Bkg

min $\Delta\phi(j, E_T^{3\text{uncl}})$



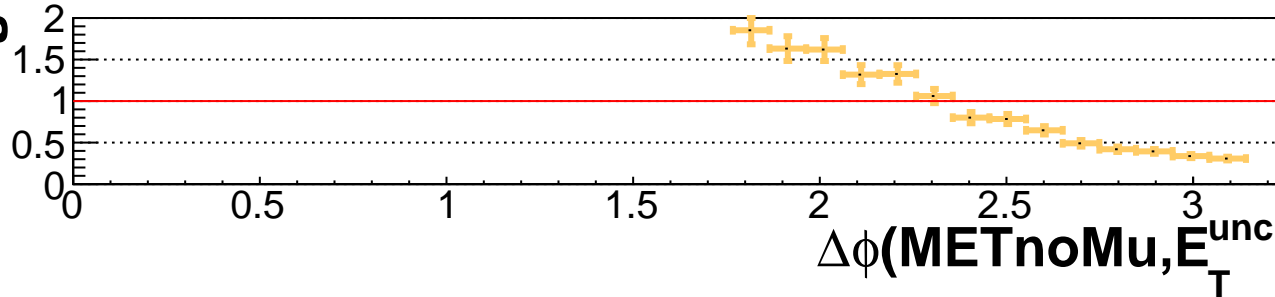
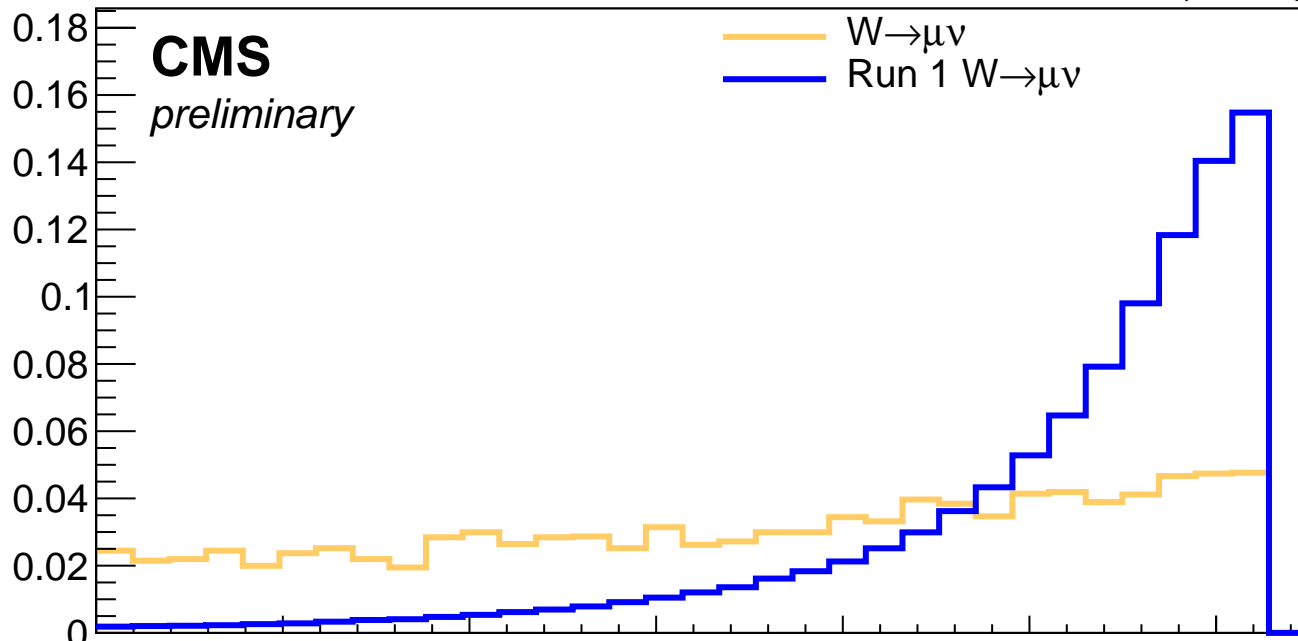
19.2 fb⁻¹ (8 TeV)

CMS
preliminary

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

Data/Bkg

$\Delta\phi(\text{METnoMu}, E_{\text{T}}^{\text{uncl}})$



19.2 fb⁻¹ (8 TeV)

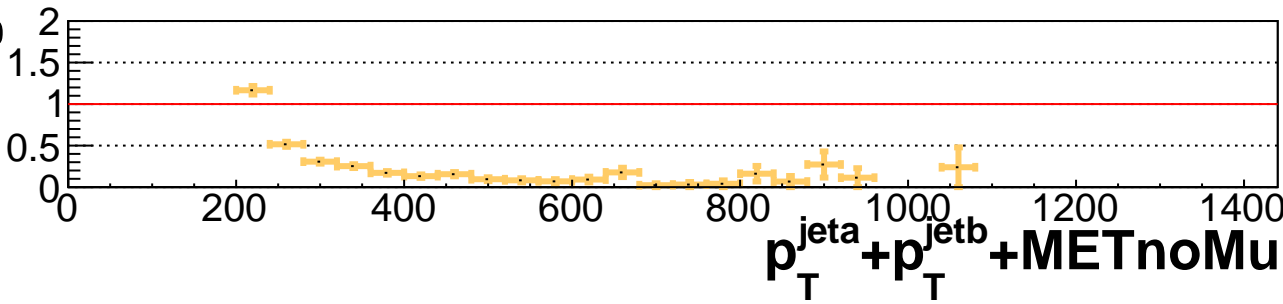
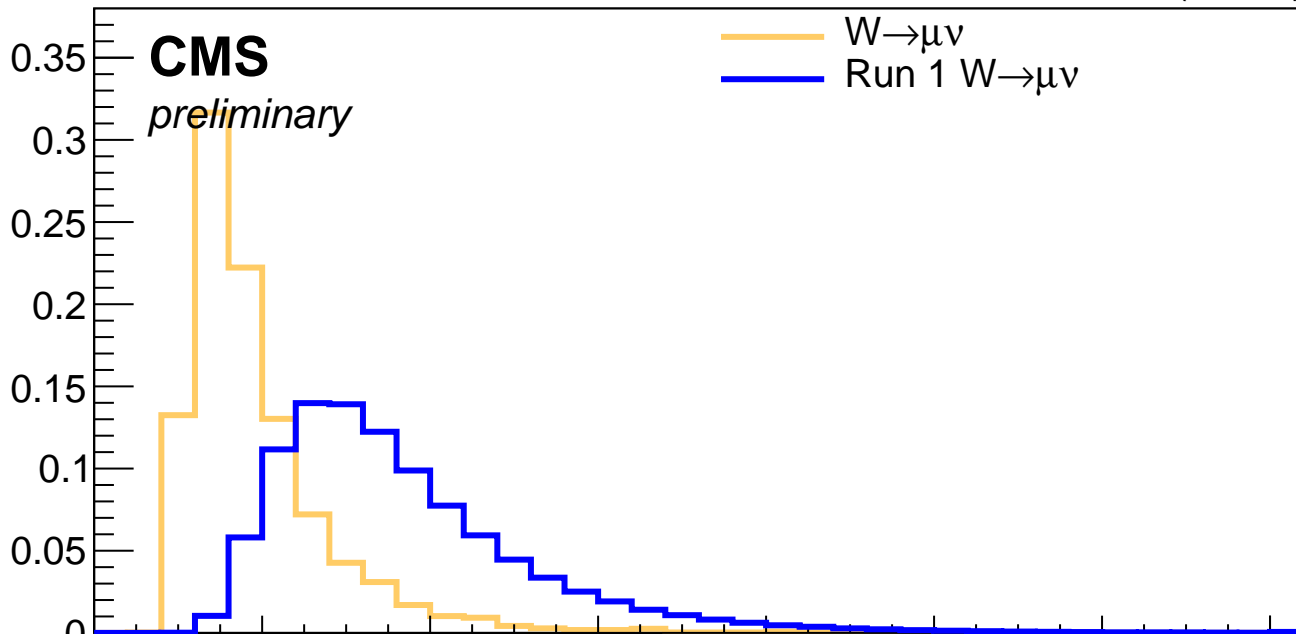
CMS

preliminary

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

Data/Bkg

$p_T^{\text{jeta}} + p_T^{\text{jetb}} + \text{MET}_{\text{noMu}}$



19.2 fb⁻¹ (8 TeV)

CMS

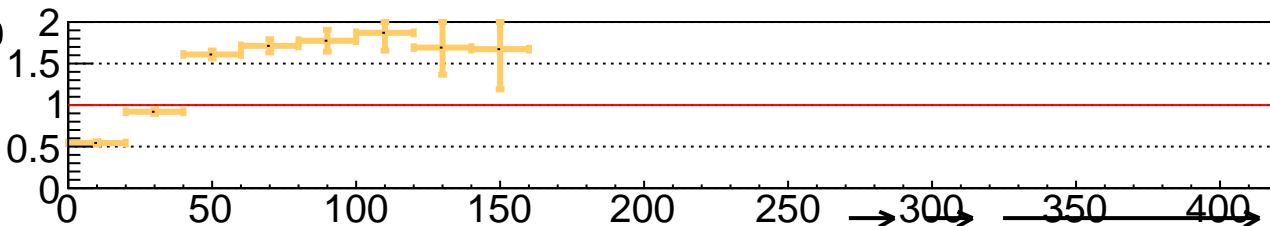
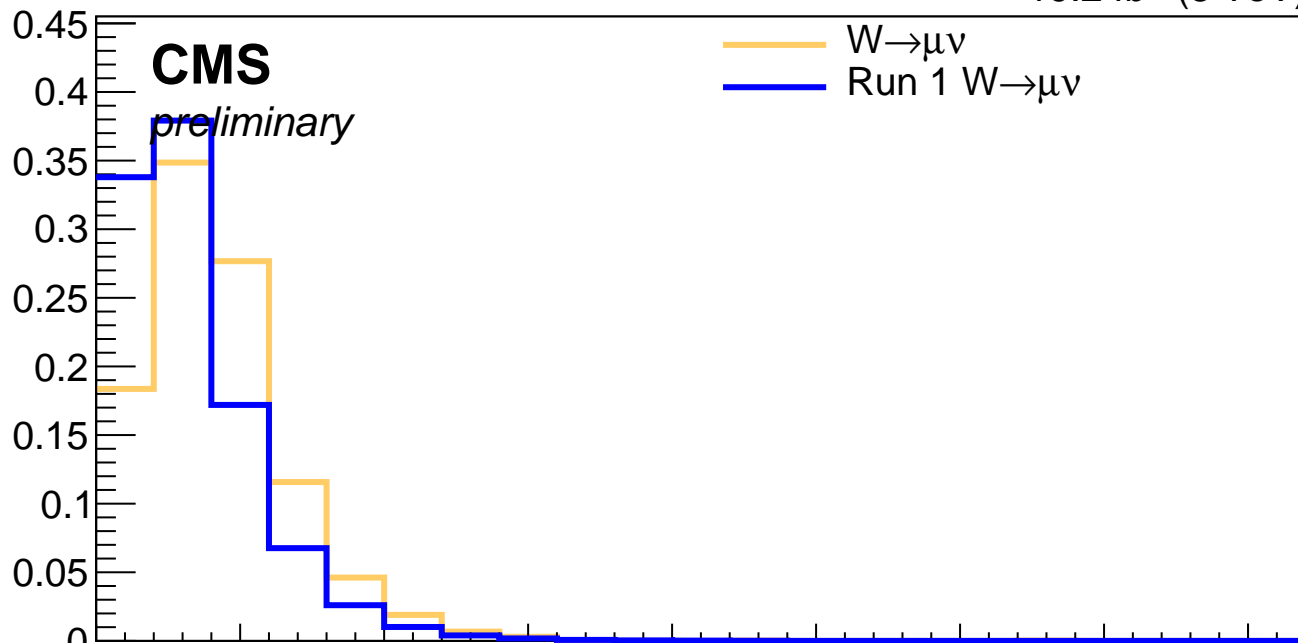
preliminary

W→μν

Run 1 W→μν

Data/Bkg

p_T (j_a+j_b+METnoMu)



19.2 fb⁻¹ (8 TeV)

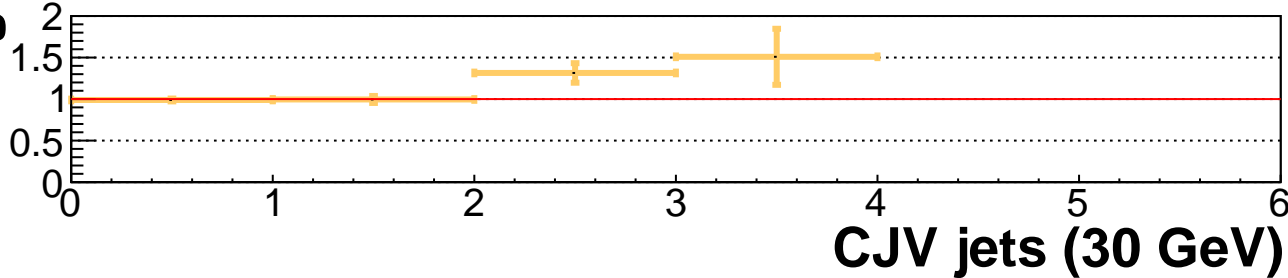
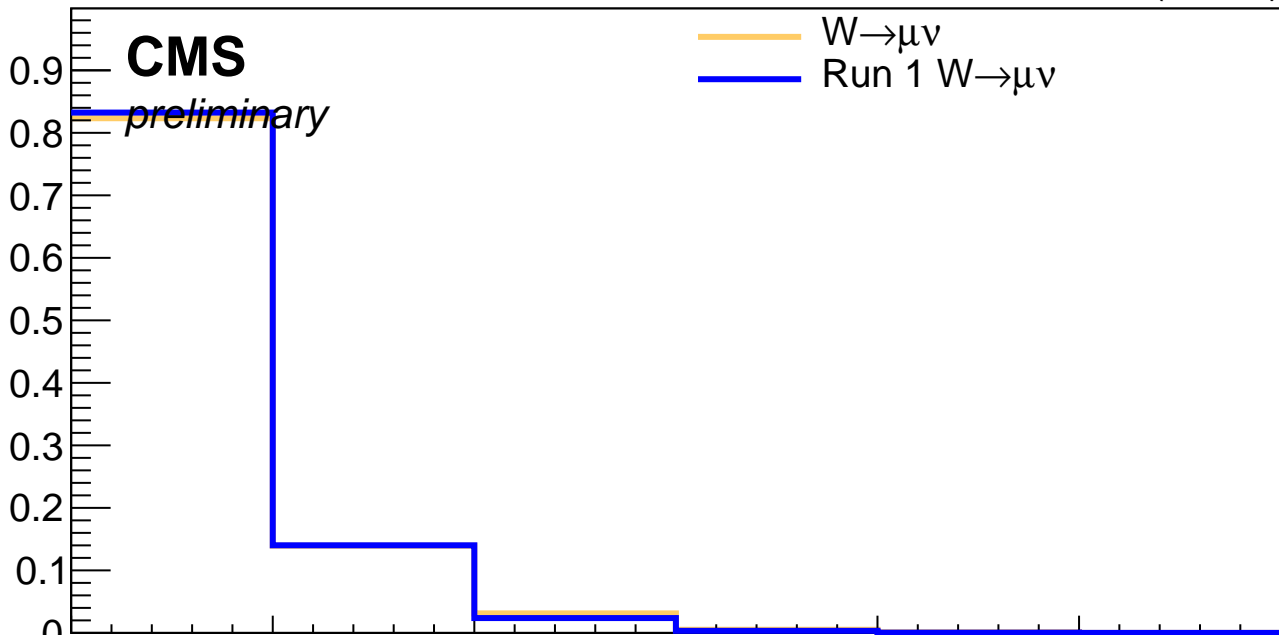
CMS

preliminary

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

Data/Bkg

CJV jets (30 GeV)



19.2 fb⁻¹ (8 TeV)

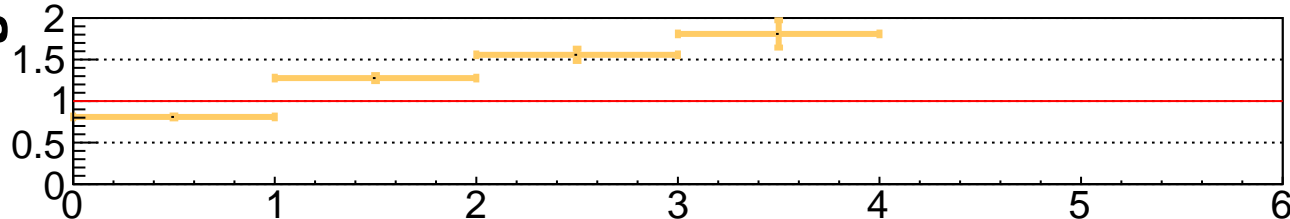
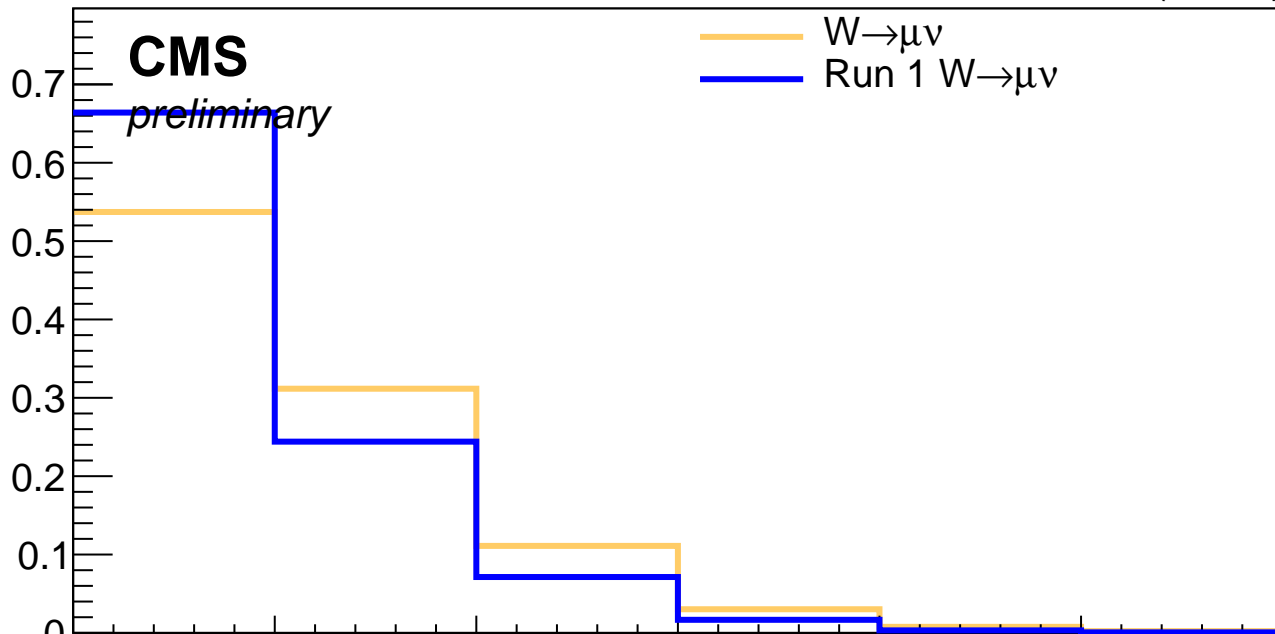
CMS

preliminary

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

Data/Bkg

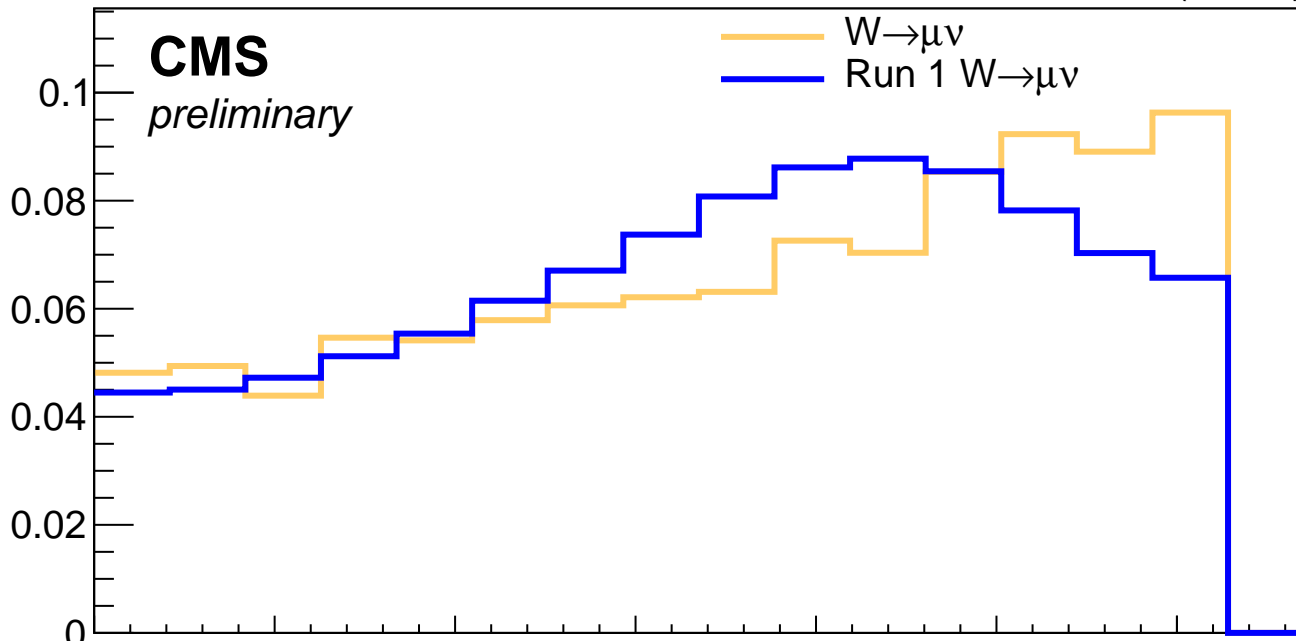
CJV jets (20 GeV EB, 30 GeV EE)



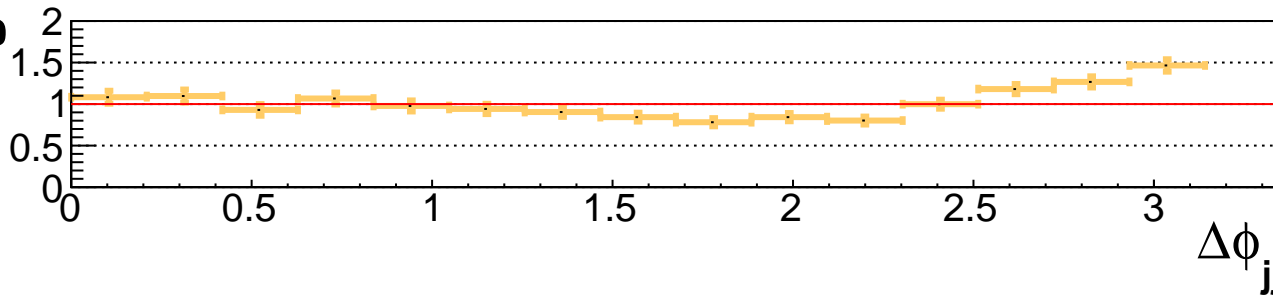
19.2 fb⁻¹ (8 TeV)

CMS
preliminary

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



Data/Bkg



19.2 fb⁻¹ (8 TeV)

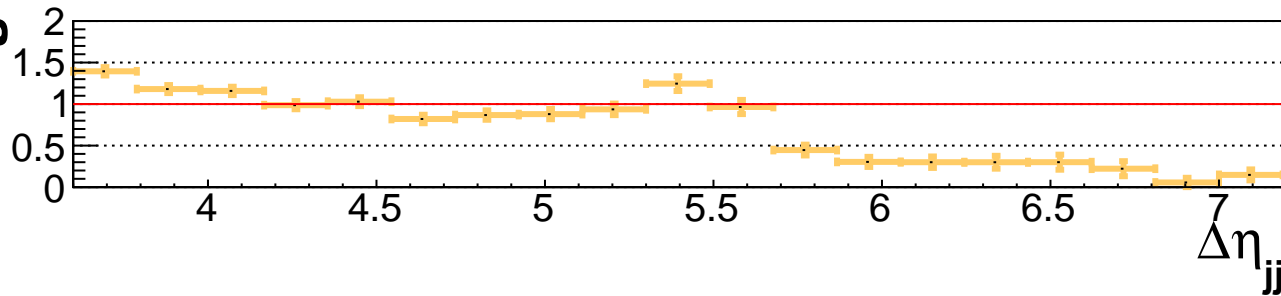
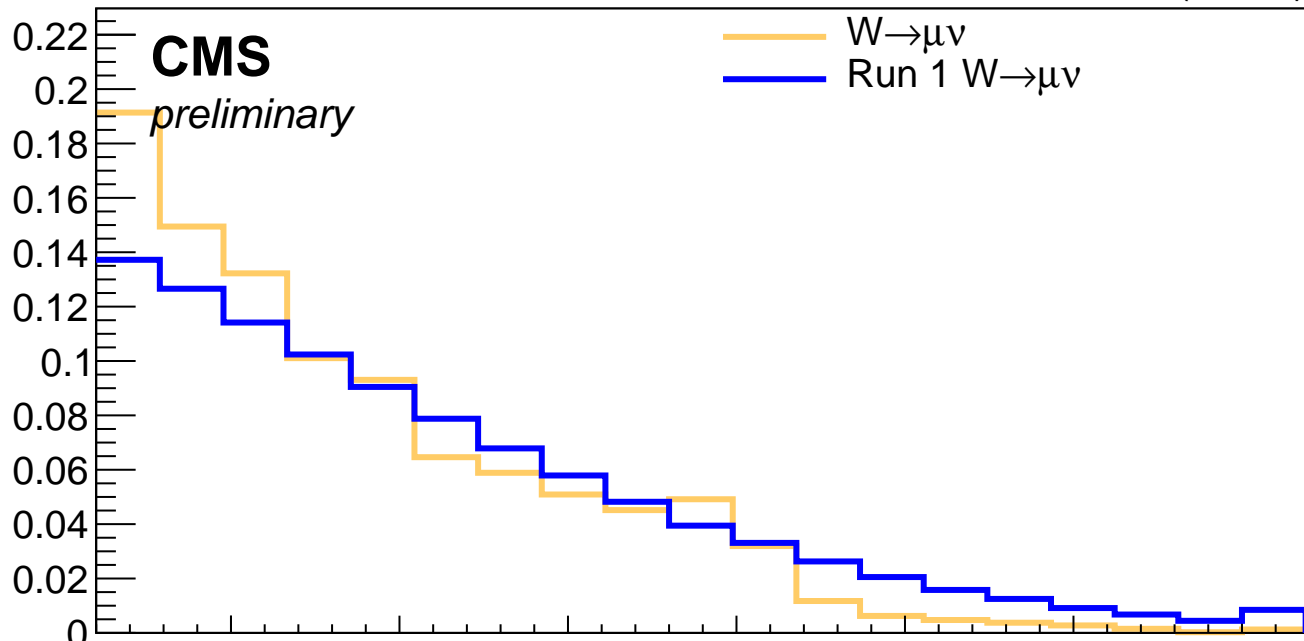
CMS

preliminary

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

Data/Bkg

$\Delta\eta_{jj}$



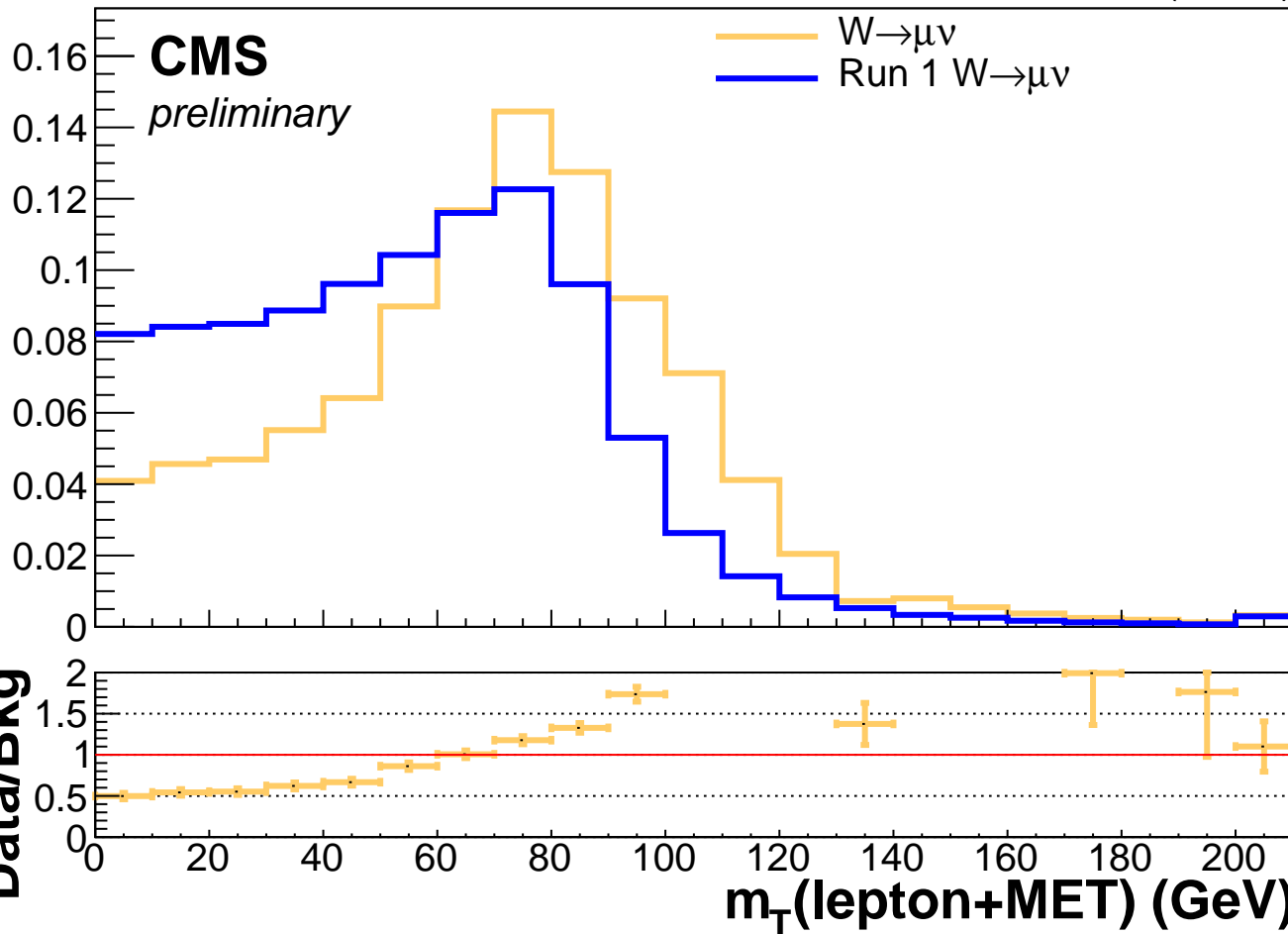
19.2 fb⁻¹ (8 TeV)

CMS
preliminary

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

Data/Bkg

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



19.2 fb⁻¹ (8 TeV)

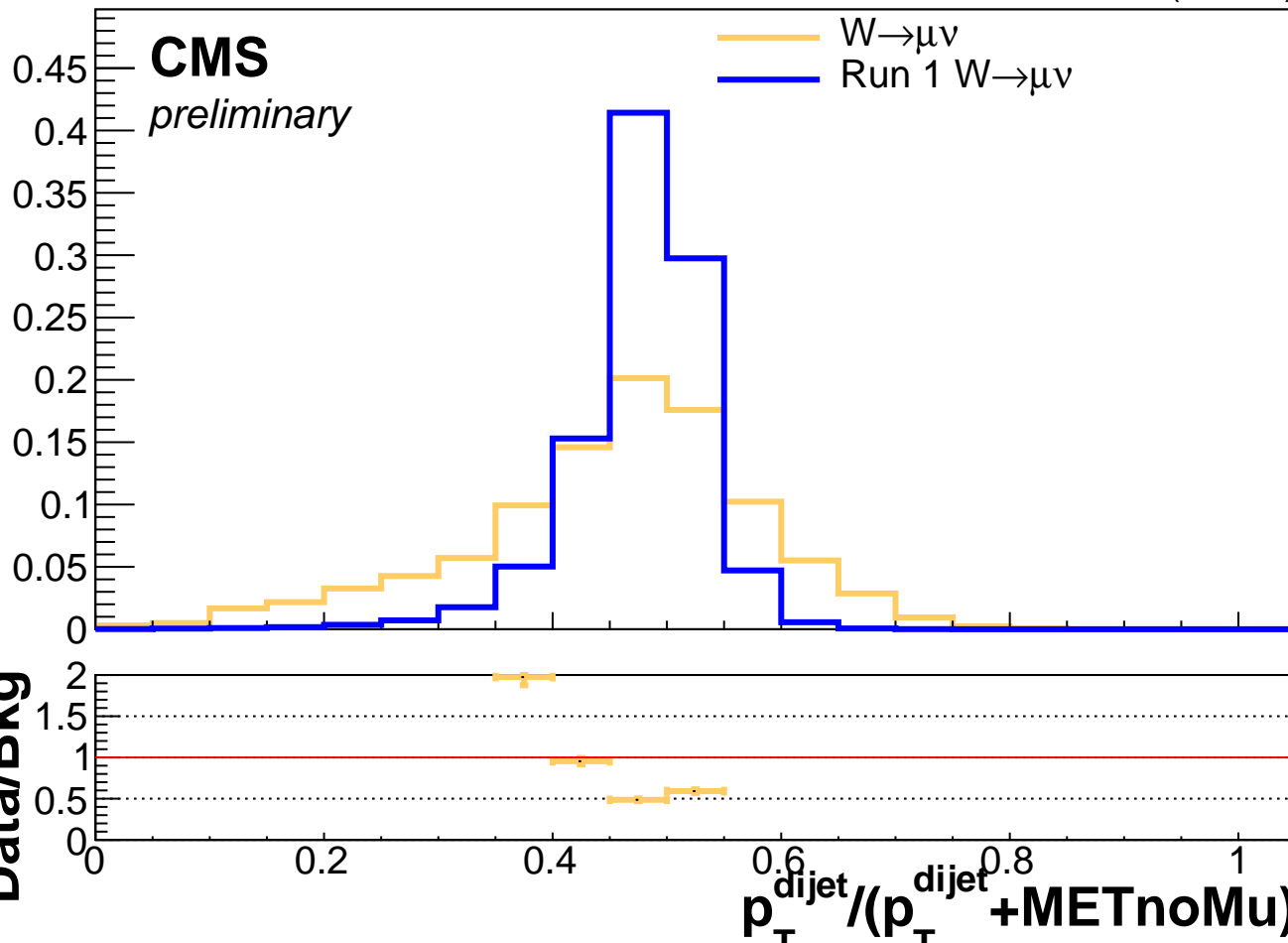
CMS

preliminary

W→μν

Run 1 W→μν

Data/Bkg



19.2 fb⁻¹ (8 TeV)

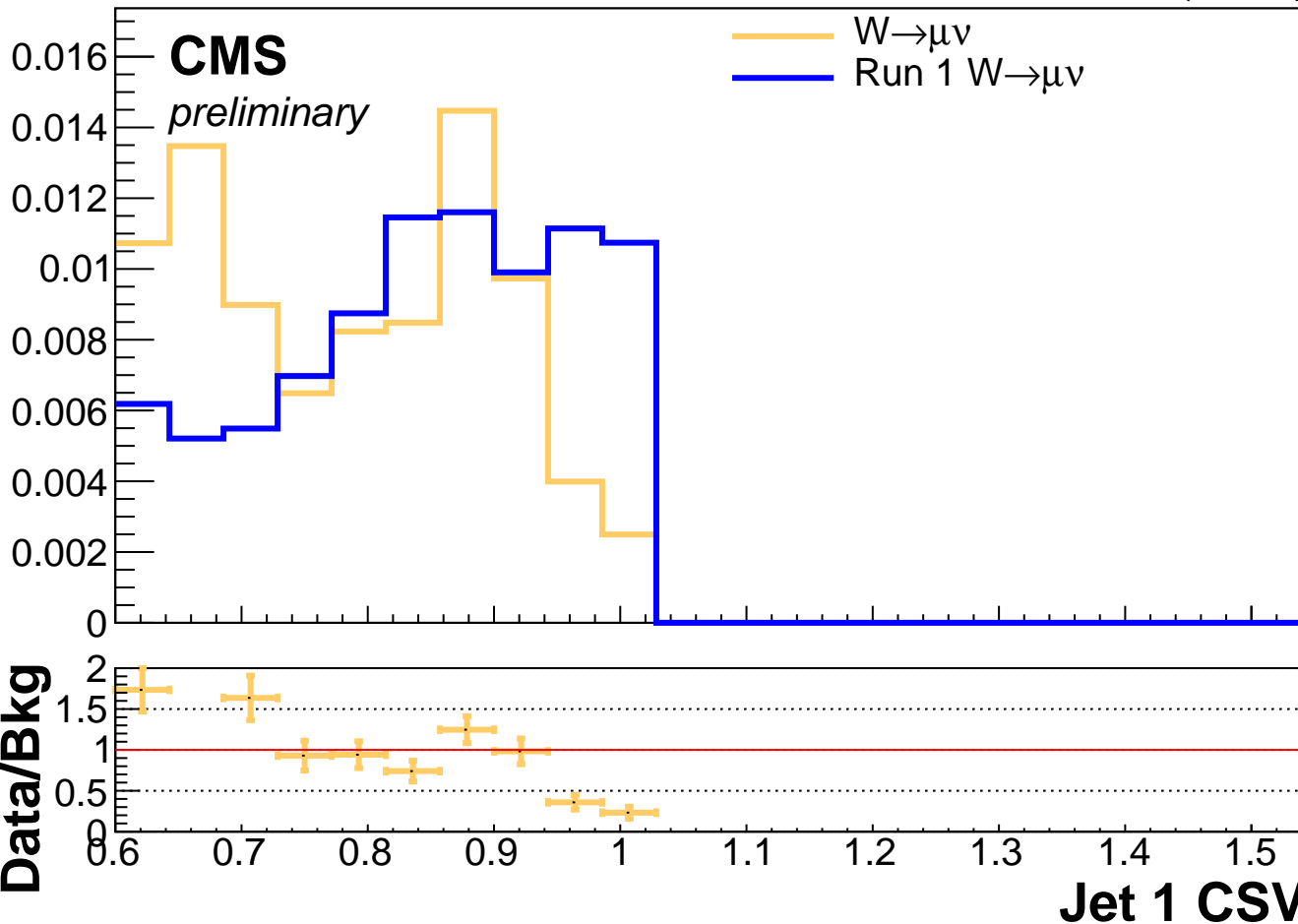
CMS

preliminary

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

Data/Bkg

Jet 1 CSV

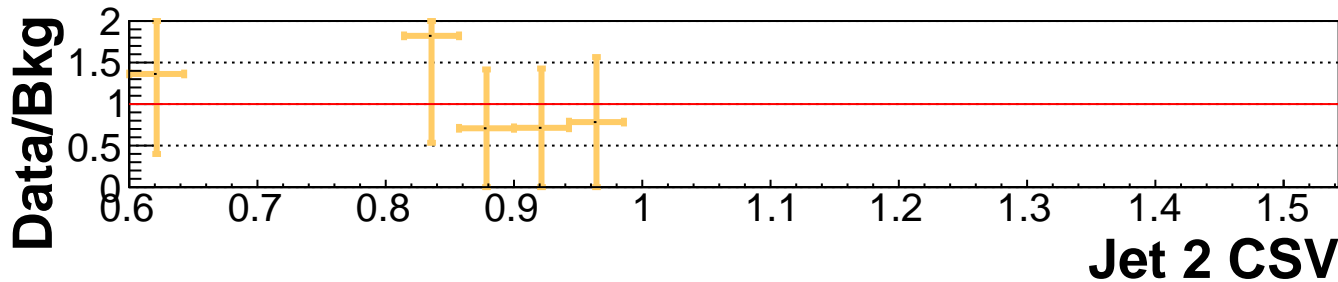
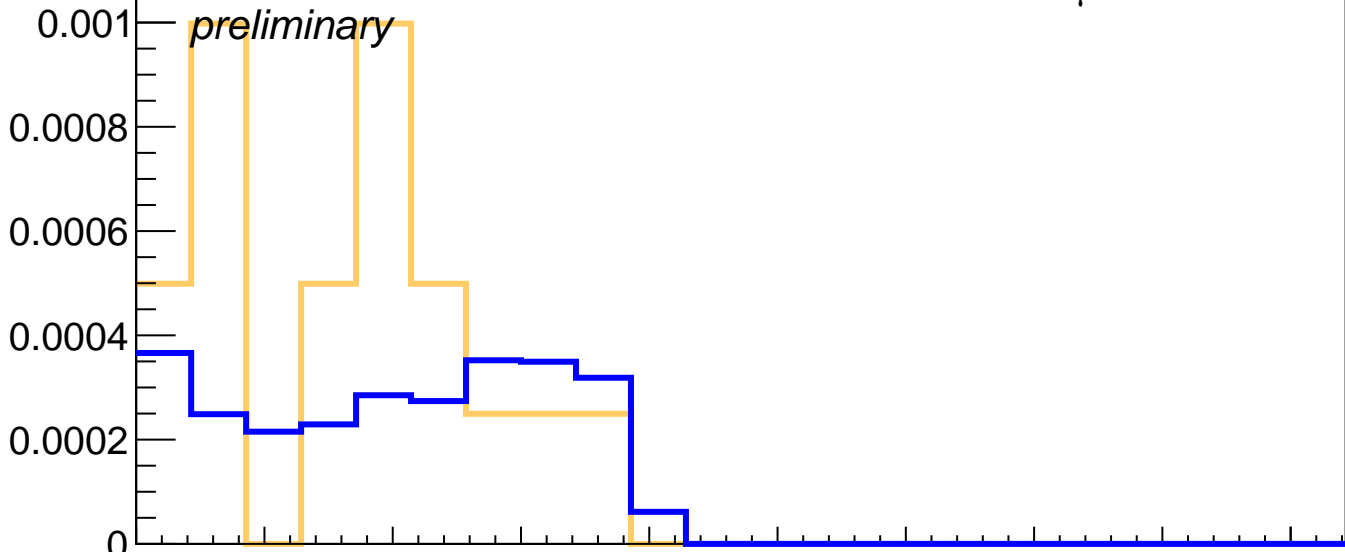


19.2 fb⁻¹ (8 TeV)

CMS

preliminary

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



19.2 fb⁻¹ (8 TeV)

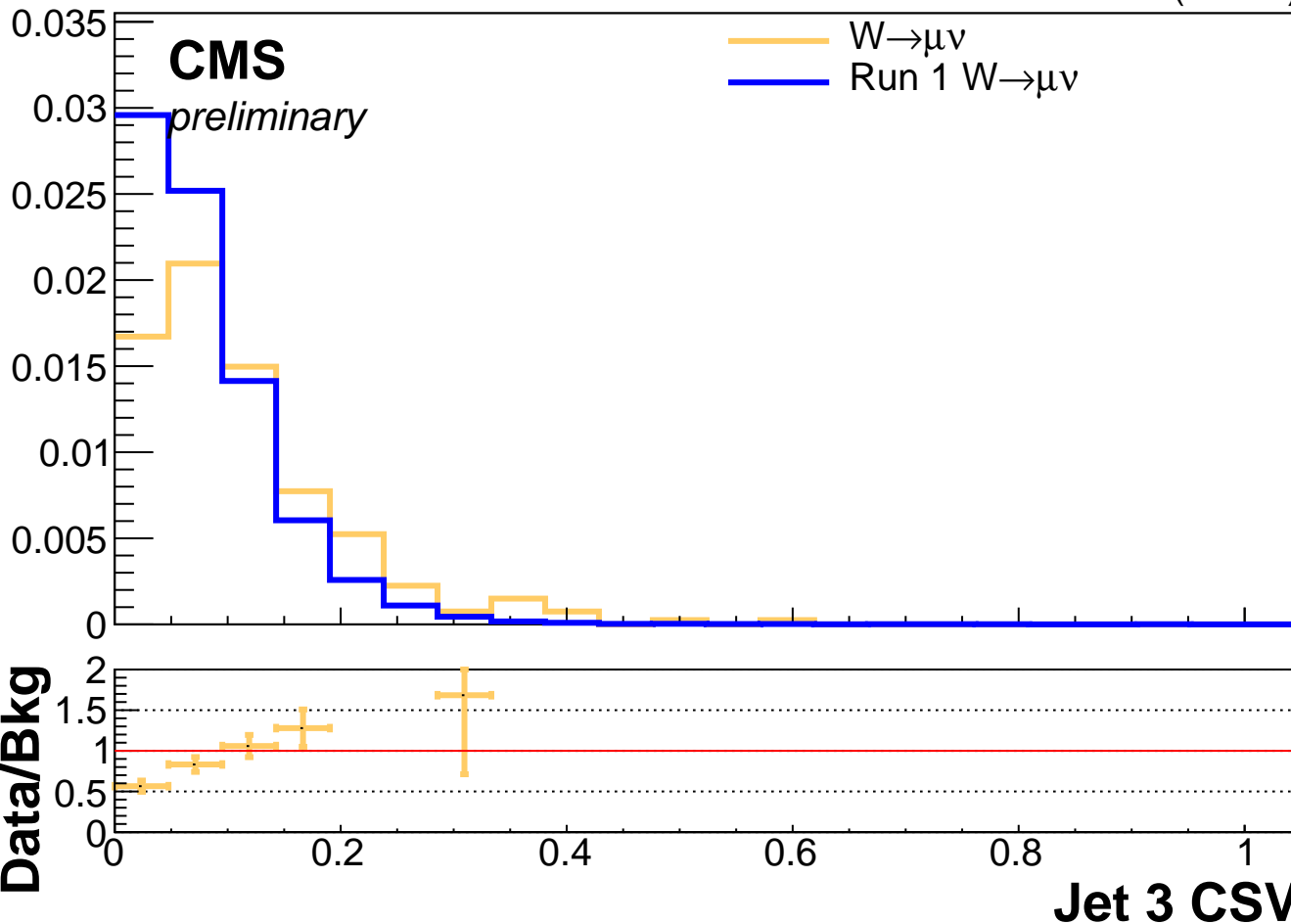
CMS

preliminary

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

Data/Bkg

Jet 3 CSV



19.2 fb⁻¹ (8 TeV)

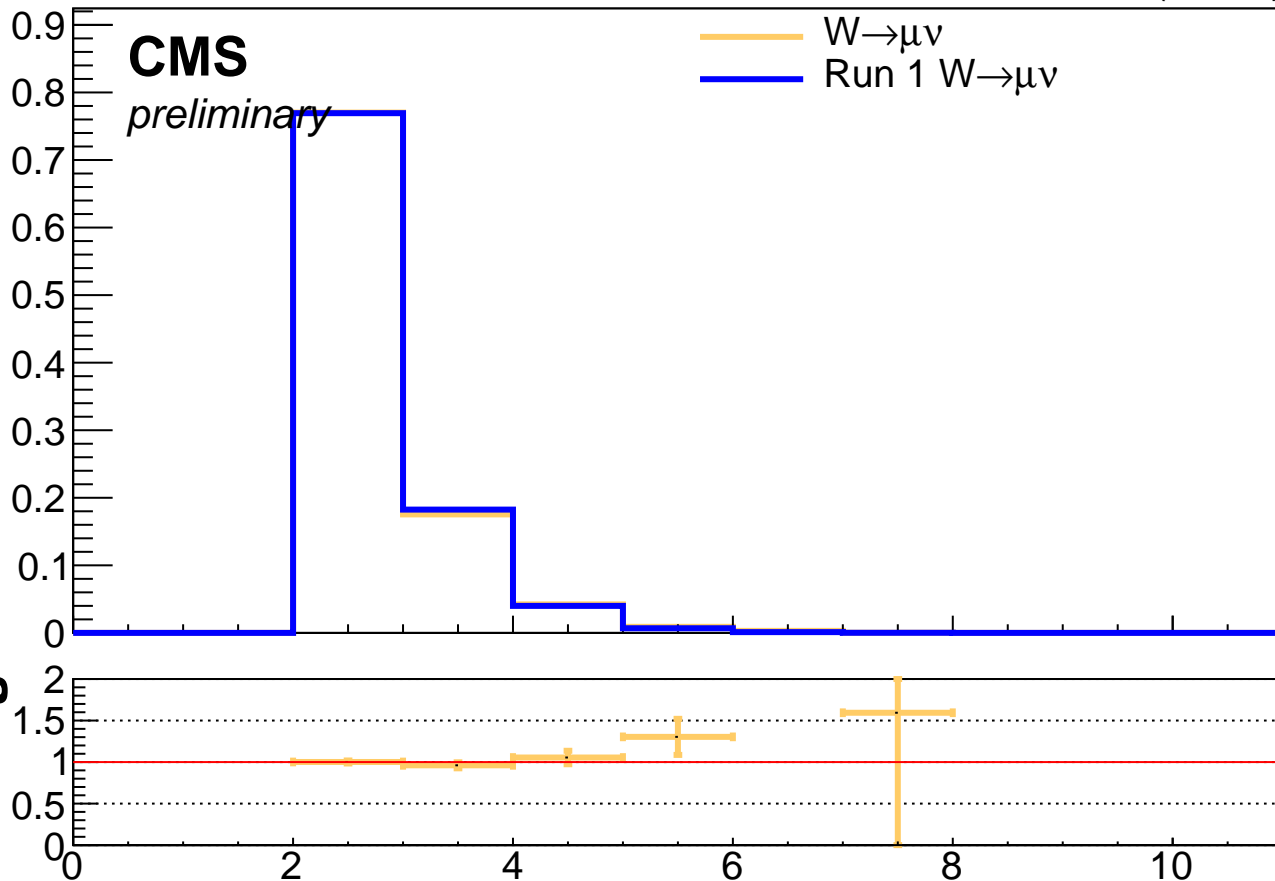
CMS

preliminary

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

Data/Bkg

N jets pt>30 GeV



19.2 fb⁻¹ (8 TeV)

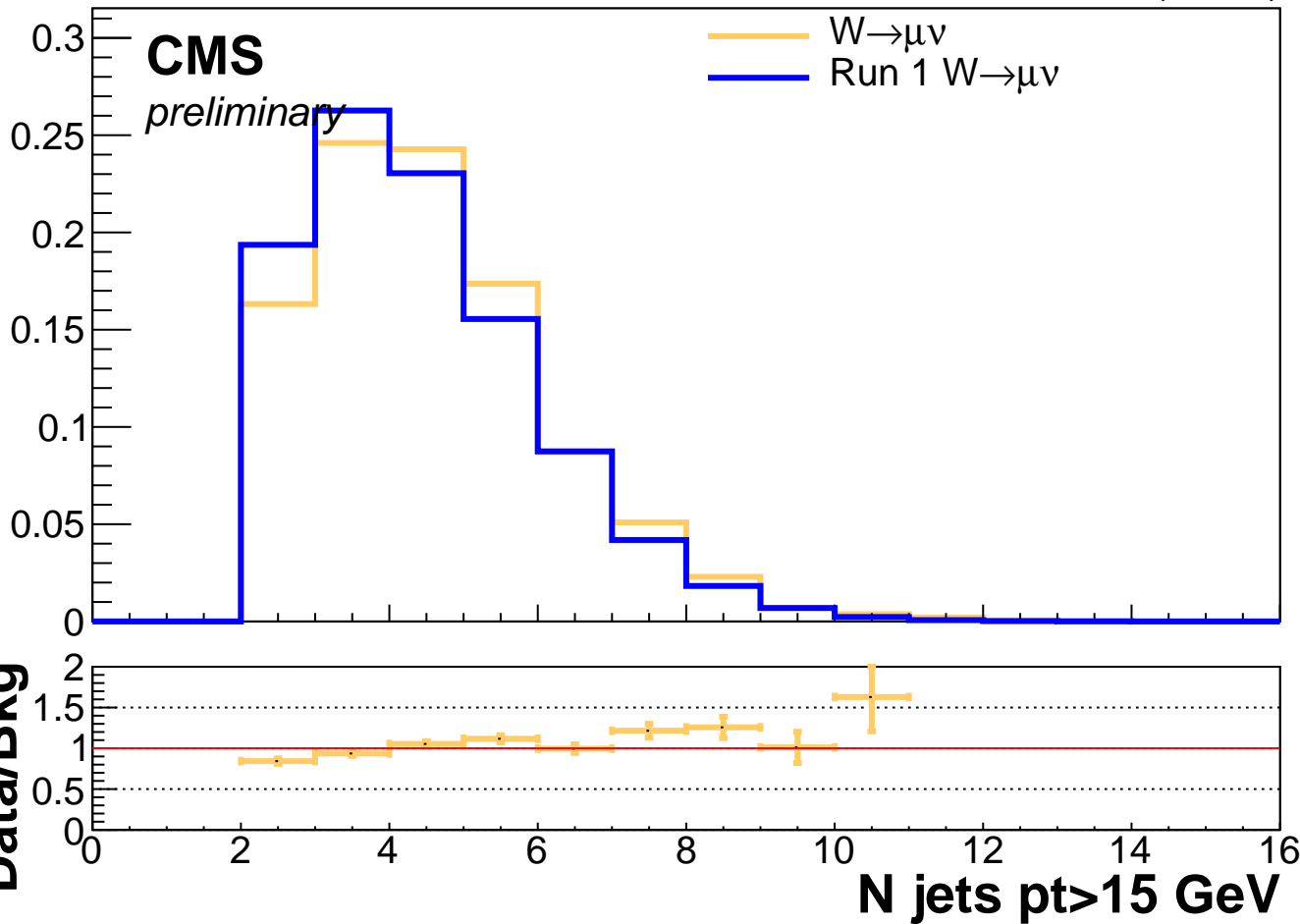
CMS

preliminary

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

Data/Bkg

N jets pt>15 GeV



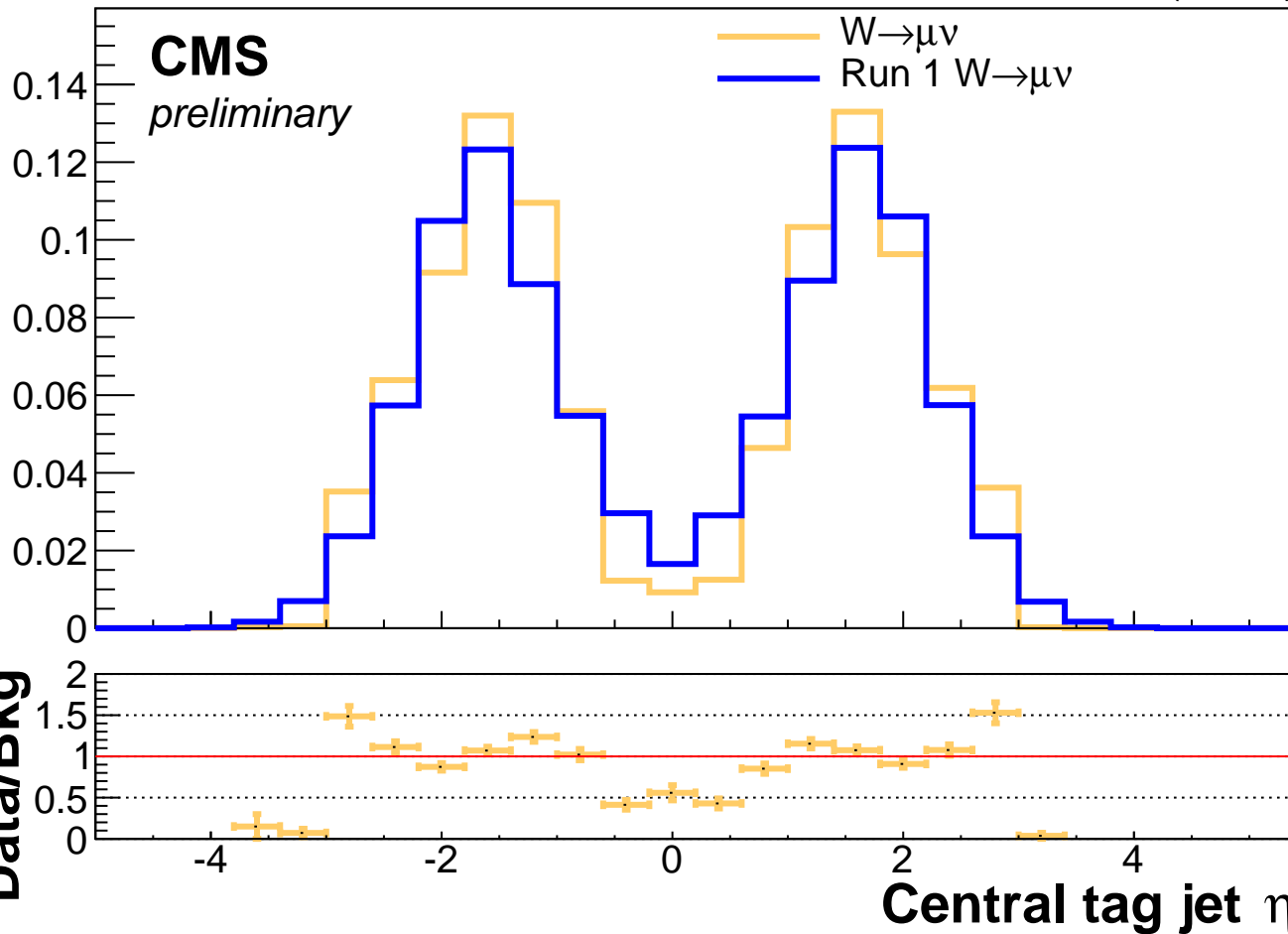
19.2 fb⁻¹ (8 TeV)

CMS
preliminary

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

Data/Bkg

Central tag jet η



19.2 fb⁻¹ (8 TeV)

CMS
preliminary

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

Data/Bkg

Forward tag jet η

