

19.2 fb⁻¹ (8 TeV)

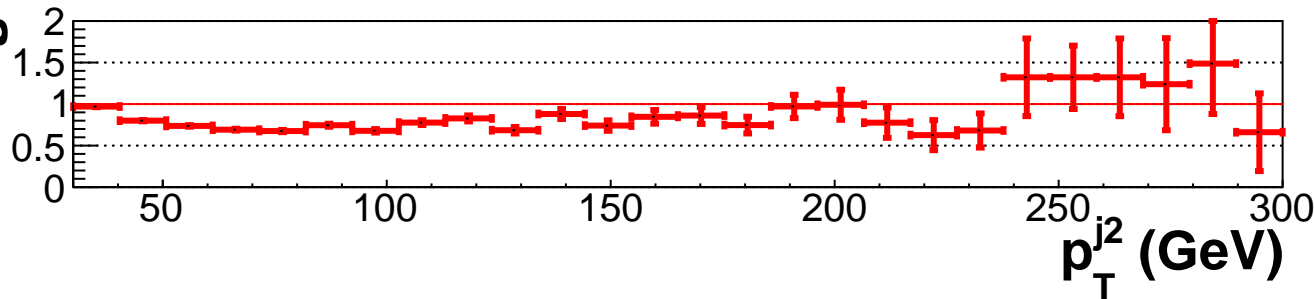
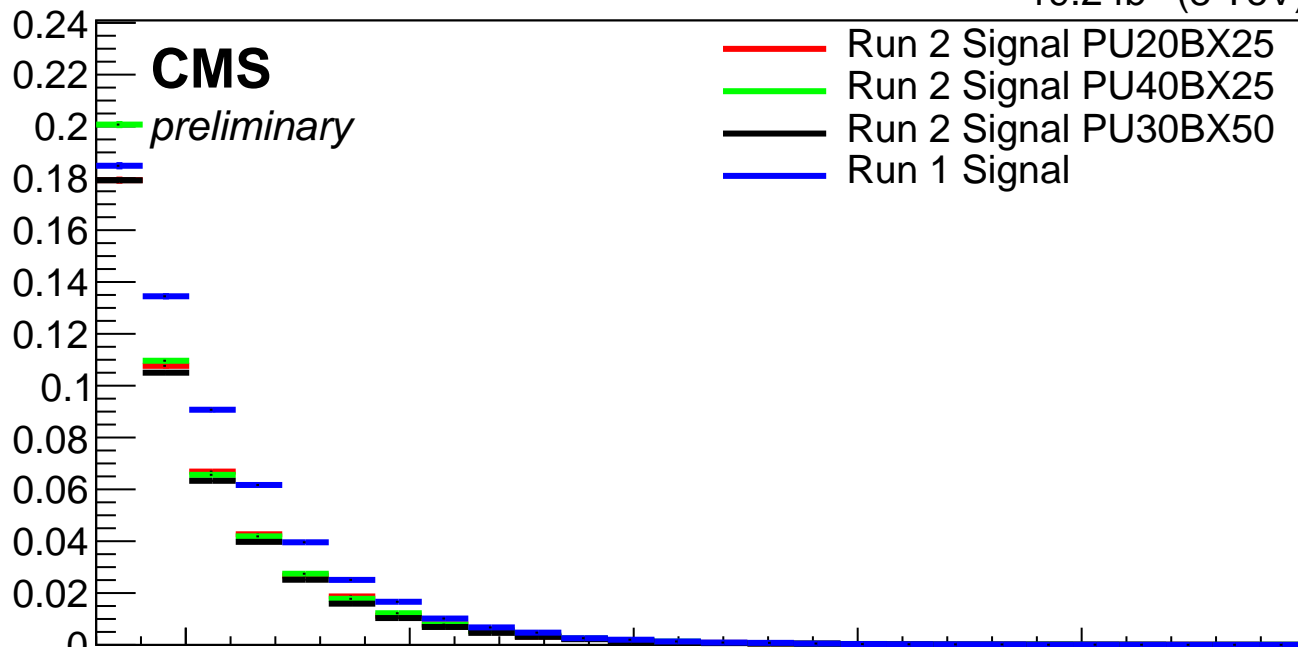
CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal

Data/Bkg

p_T^{j2} (GeV)

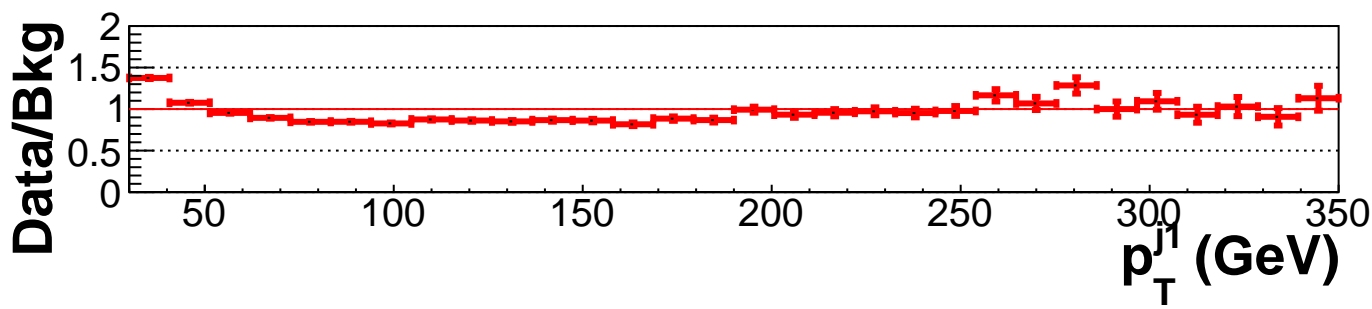


19.2 fb⁻¹ (8 TeV)

CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal

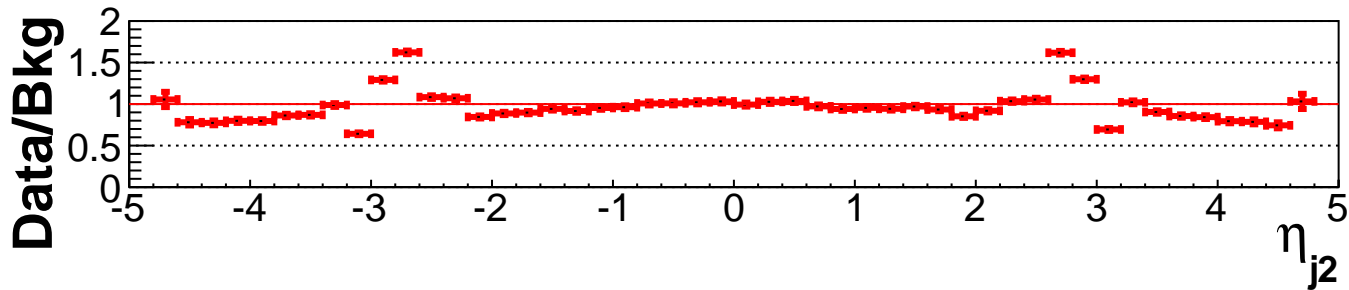
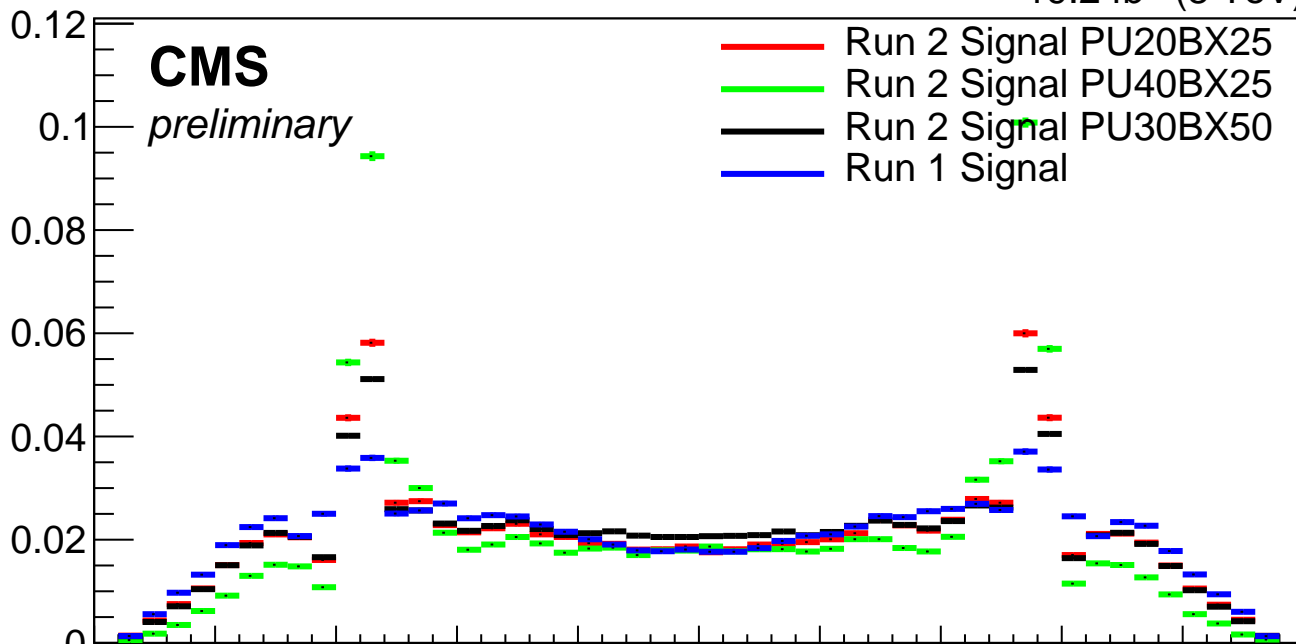


19.2 fb⁻¹ (8 TeV)

CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal

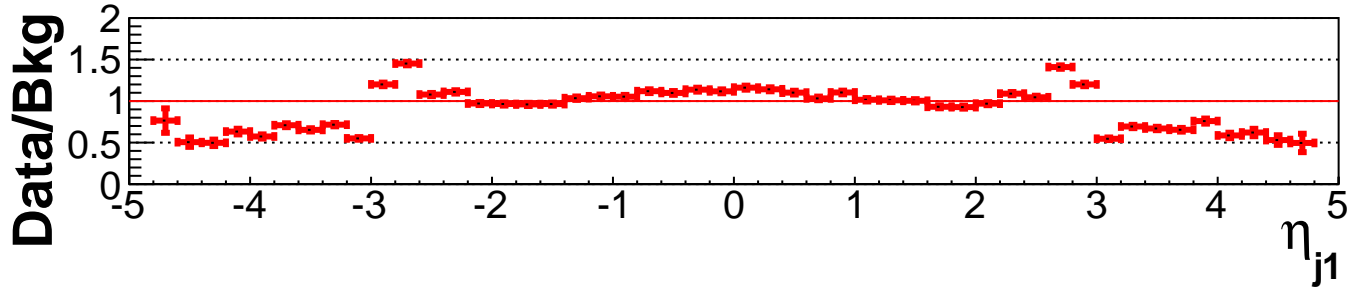
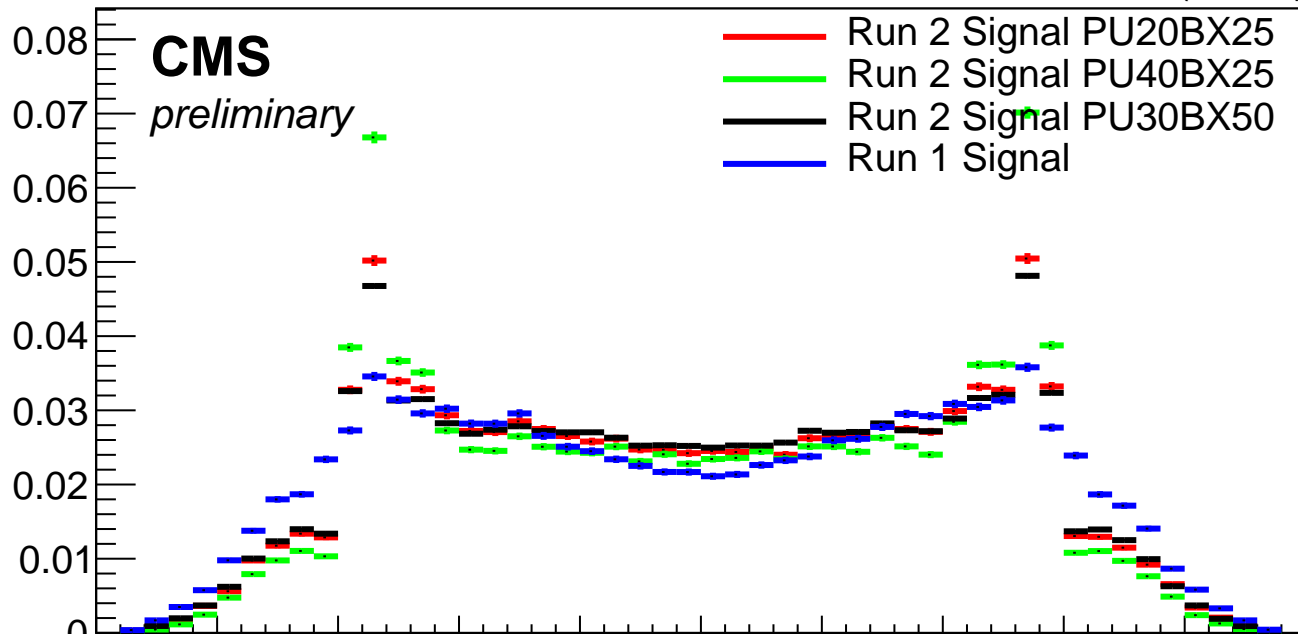


19.2 fb⁻¹ (8 TeV)

CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal

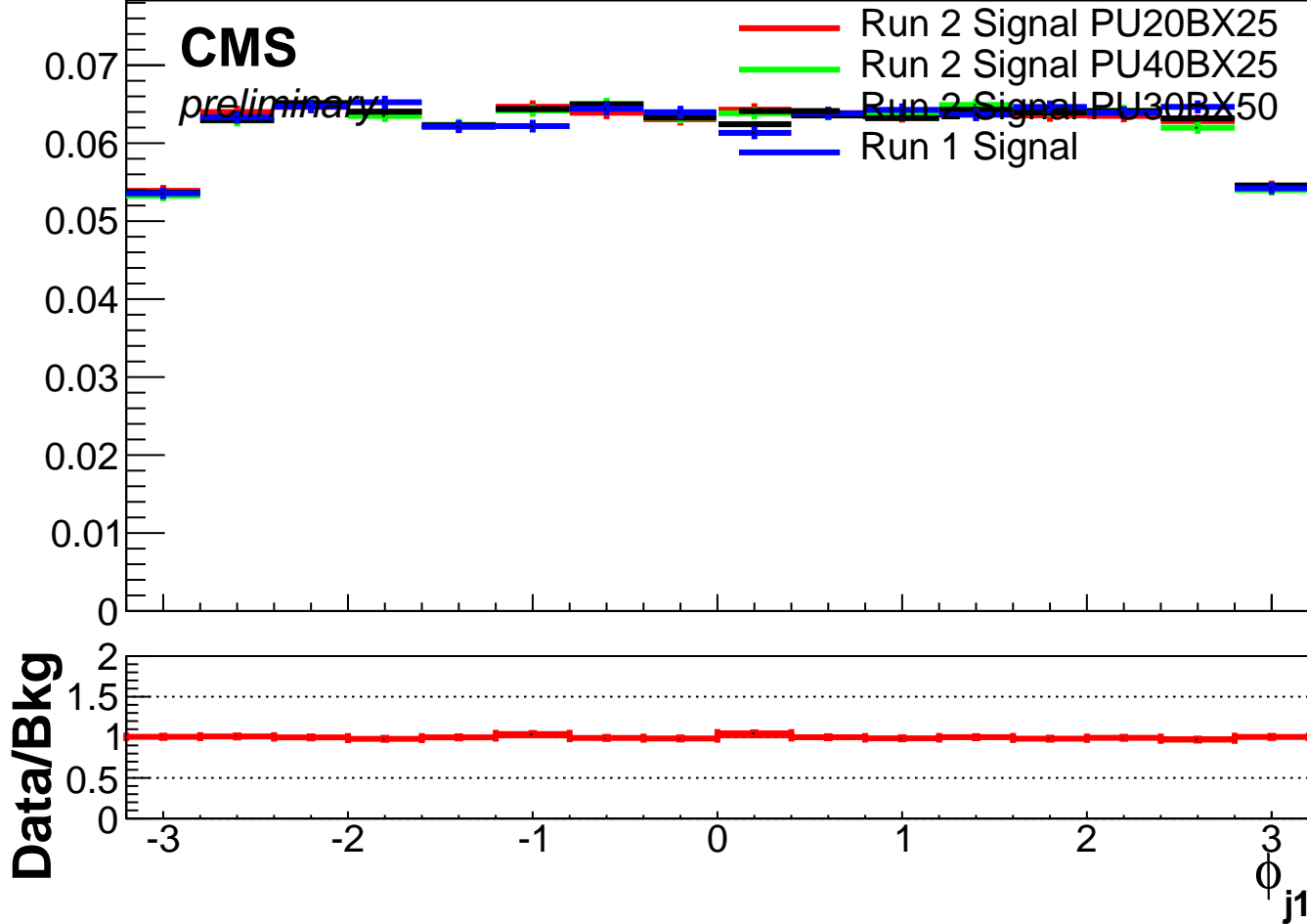


19.2 fb⁻¹ (8 TeV)

CMS

preliminary

Run 2 Signal PU20BX25
Run 2 Signal PU40BX25
Run 2 Signal PU30BX50
Run 1 Signal



19.2 fb⁻¹ (8 TeV)

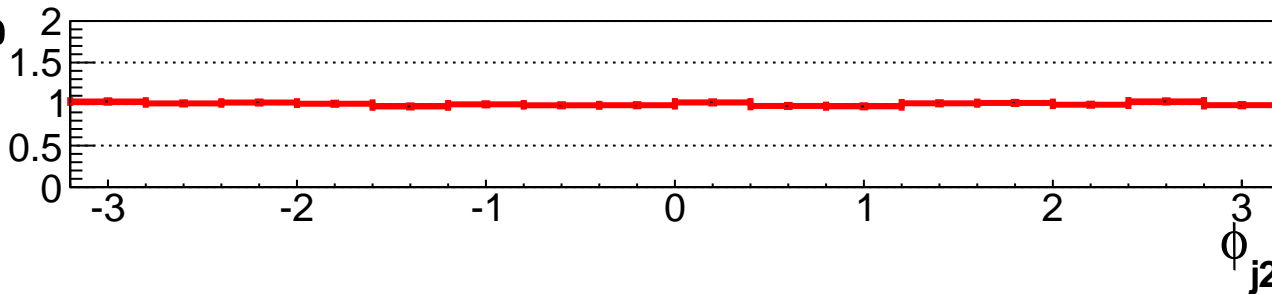
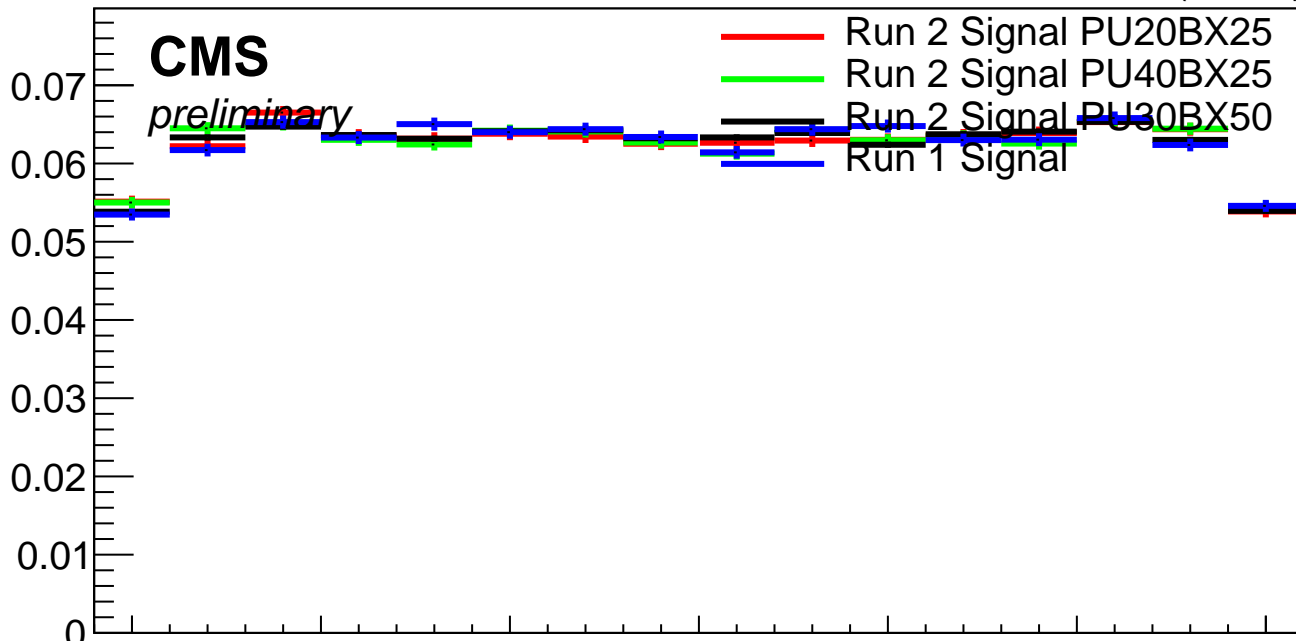
CMS

preliminary

Run 2 Signal PU20BX25
Run 2 Signal PU40BX25
Run 2 Signal PU30BX50
Run 1 Signal

Data/Bkg

ϕ_{j2}

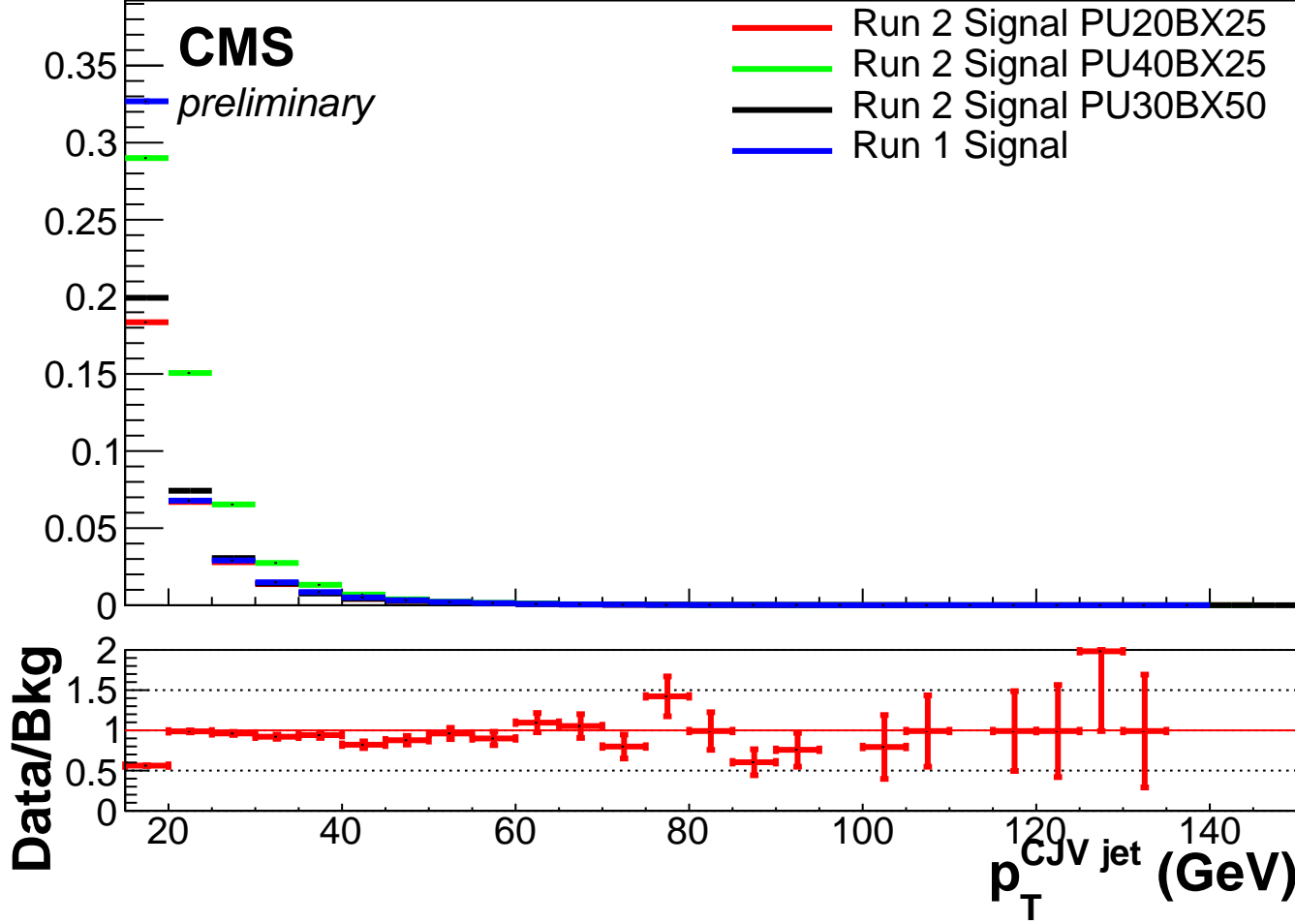


19.2 fb⁻¹ (8 TeV)

CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal

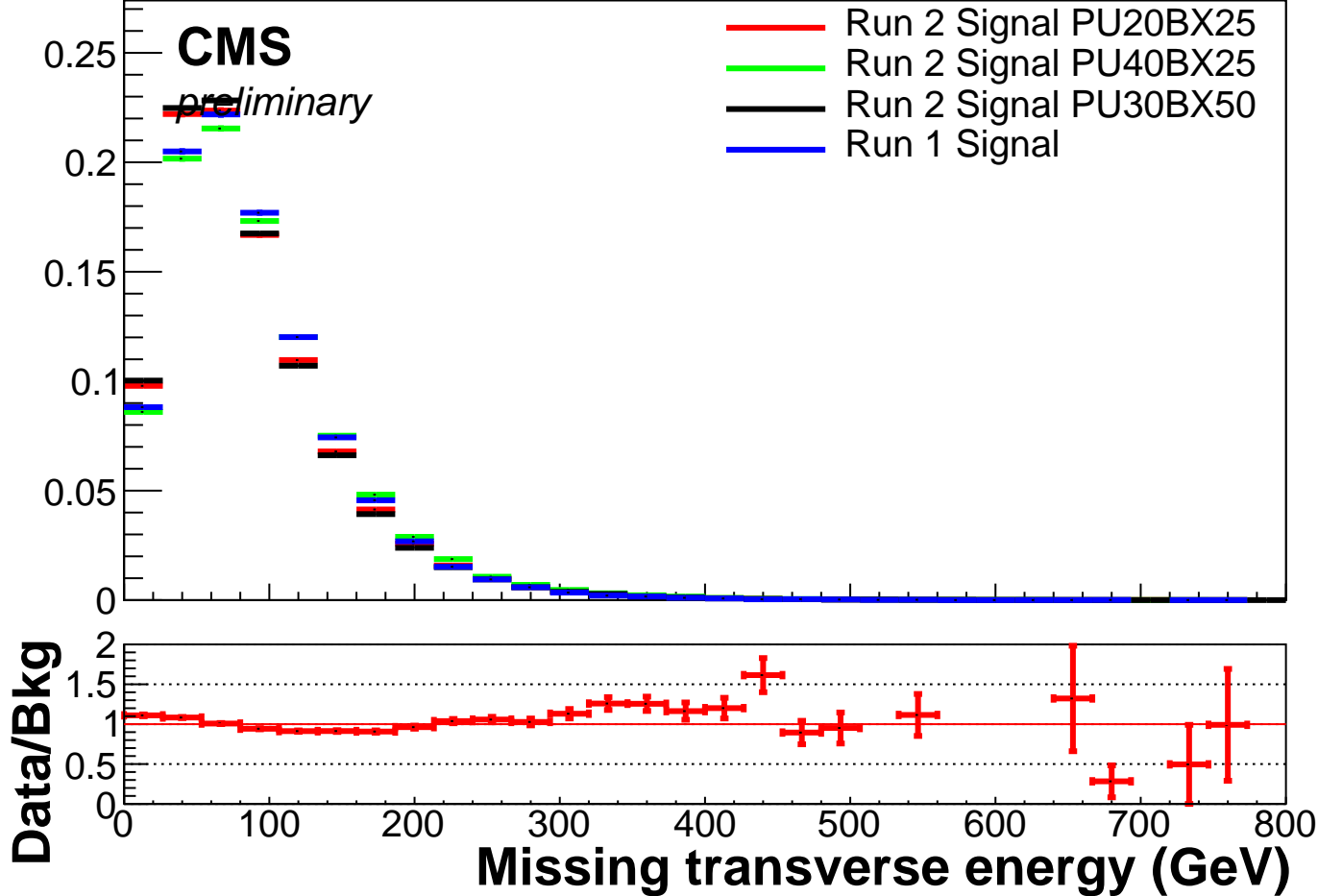


19.2 fb⁻¹ (8 TeV)

CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal

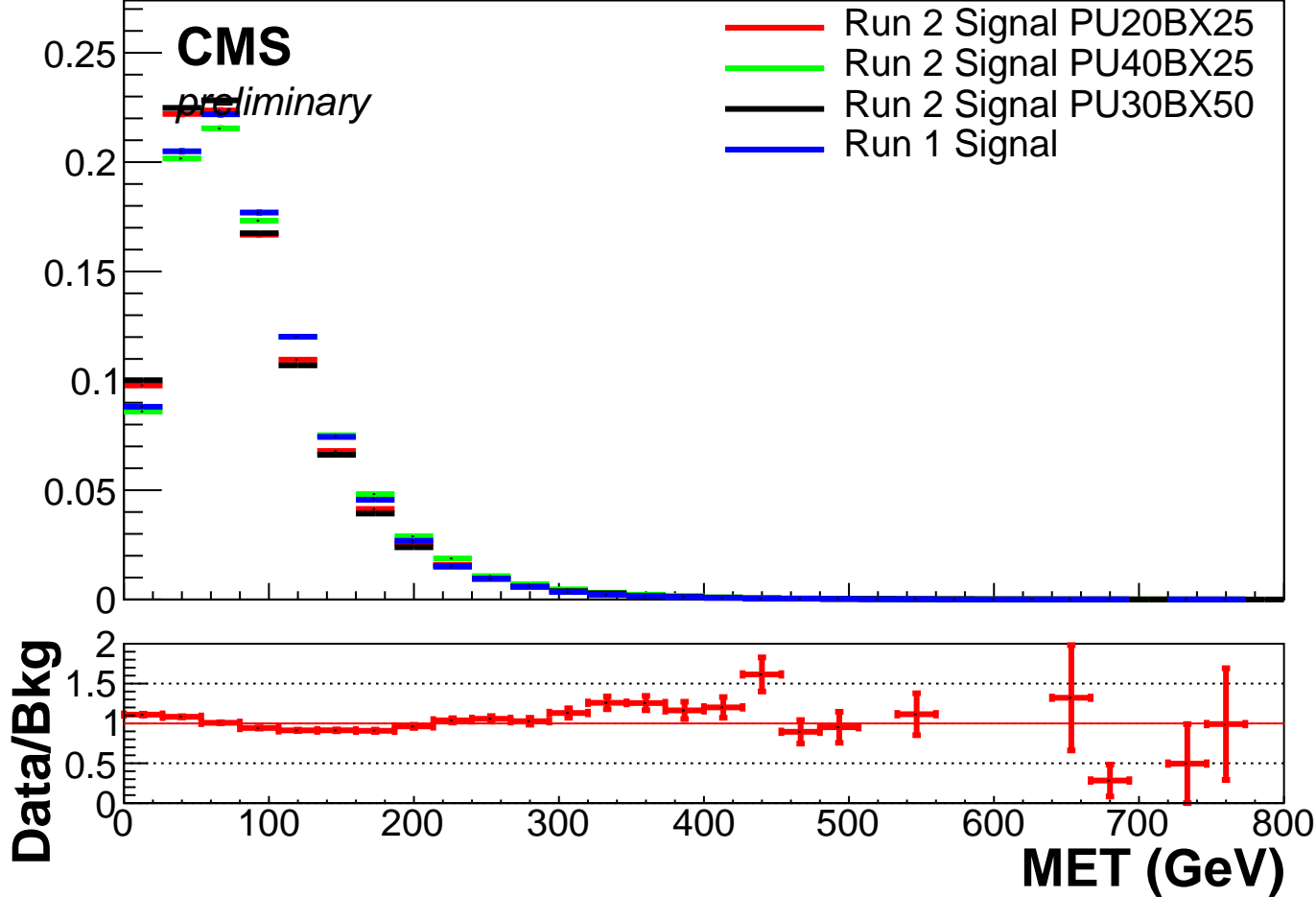


19.2 fb⁻¹ (8 TeV)

CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal

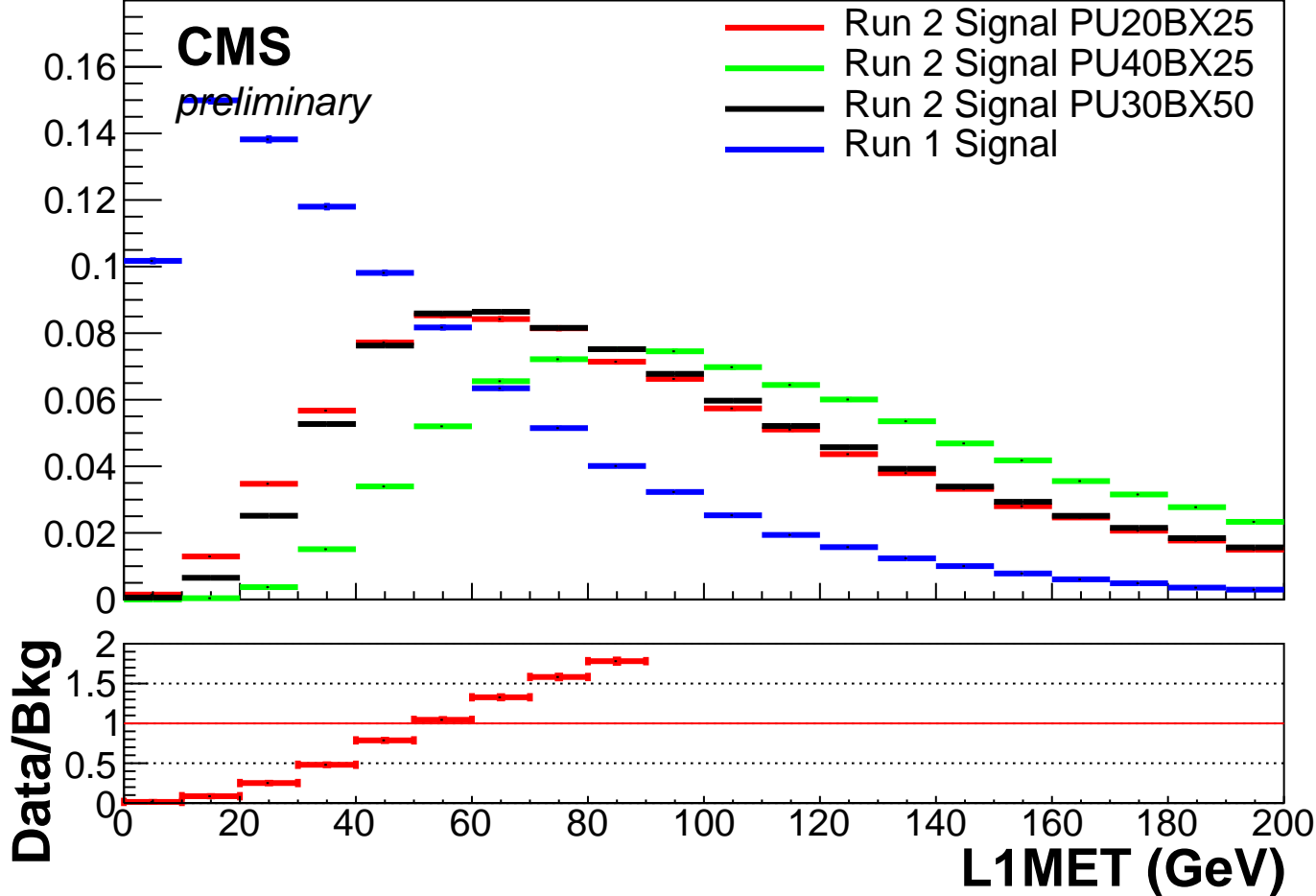


19.2 fb⁻¹ (8 TeV)

CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal



19.2 fb⁻¹ (8 TeV)

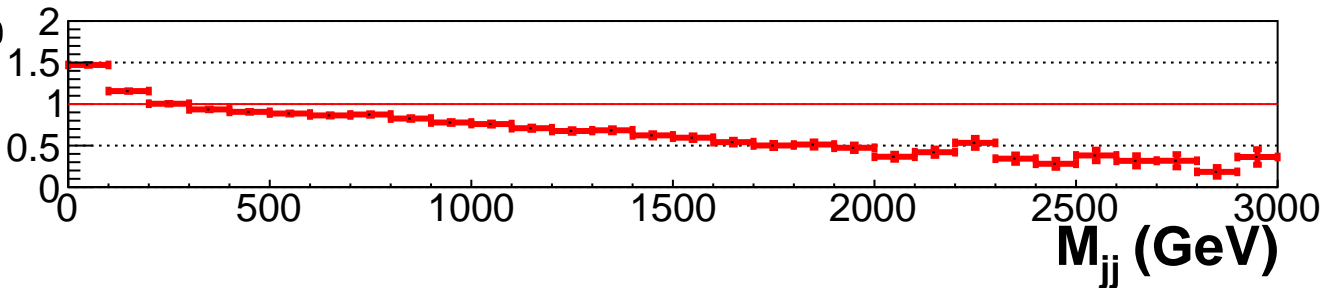
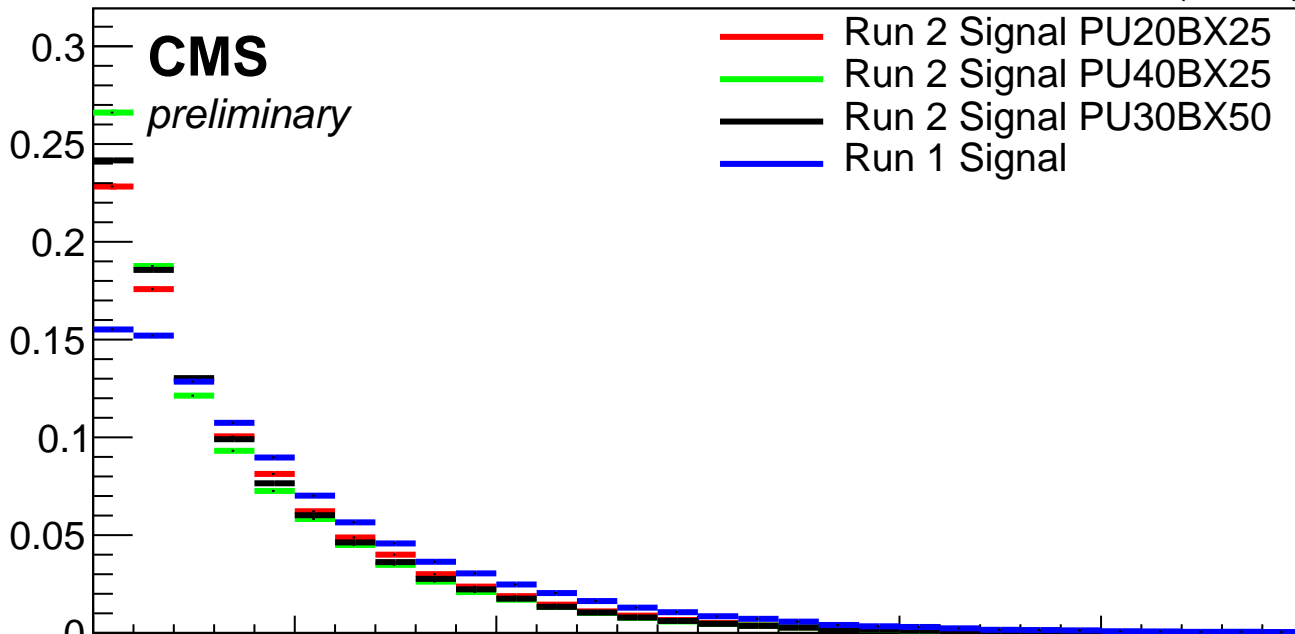
CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal

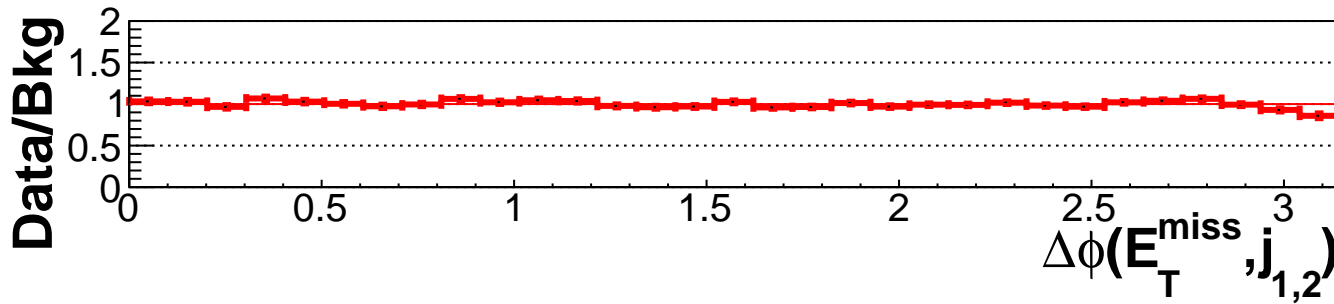
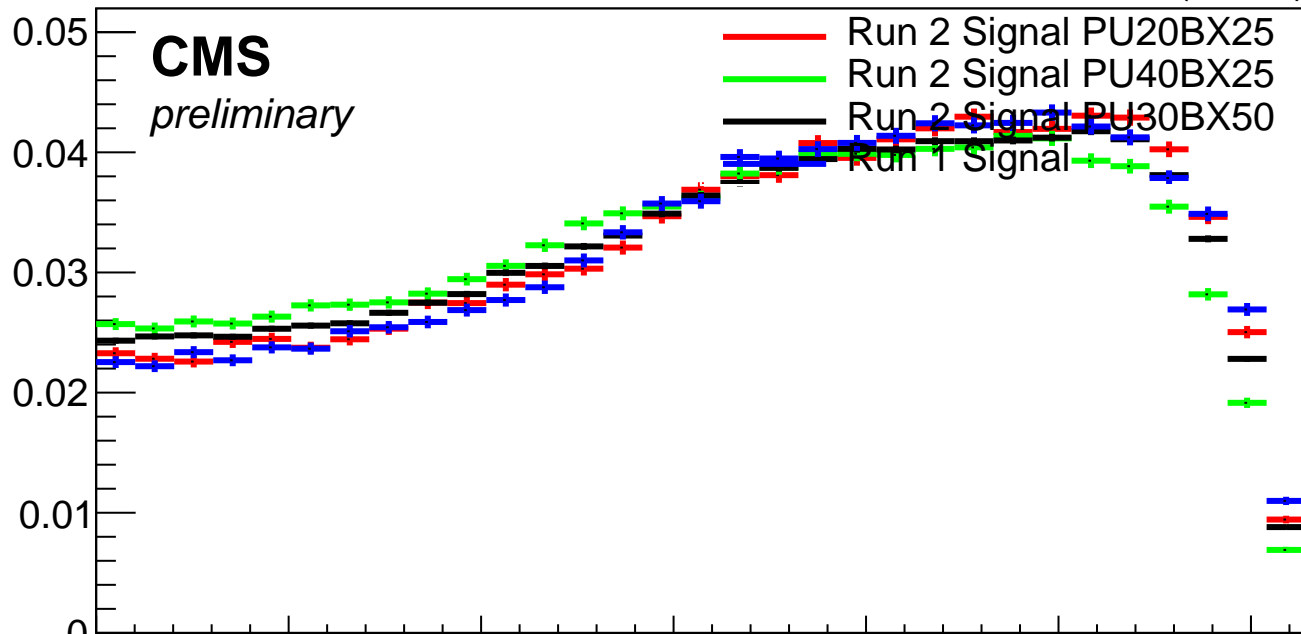
Data/Bkg

M_{jj} (GeV)



19.2 fb⁻¹ (8 TeV)

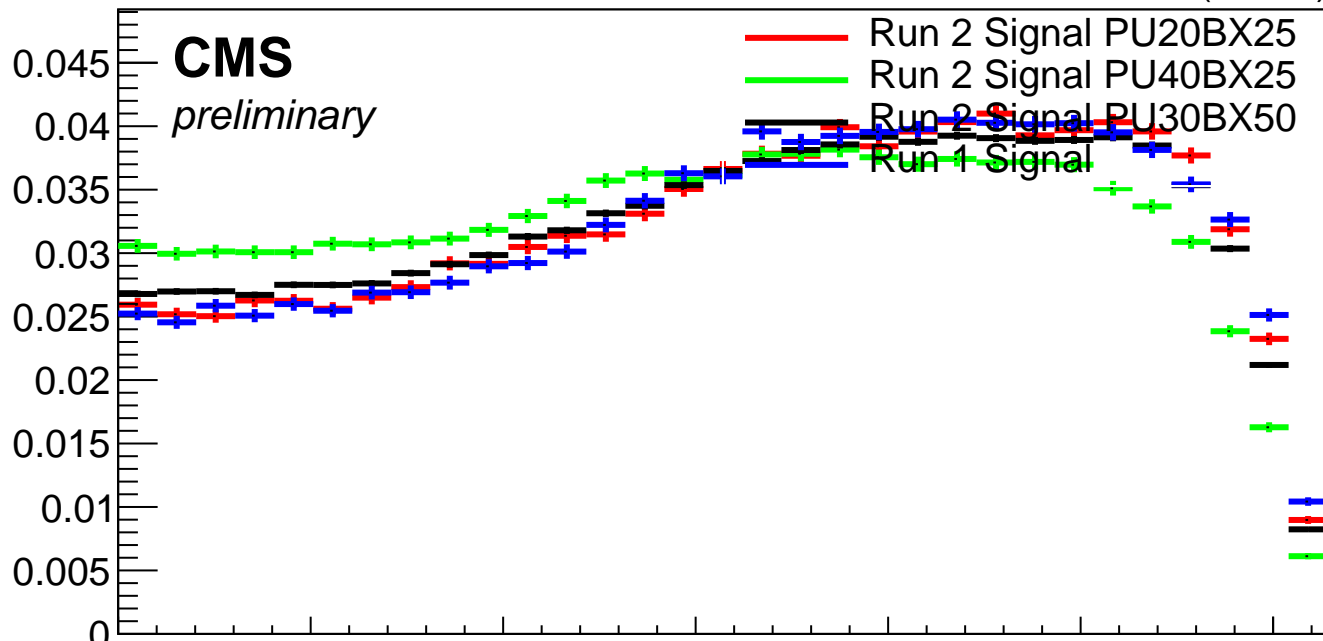
CMS
preliminary



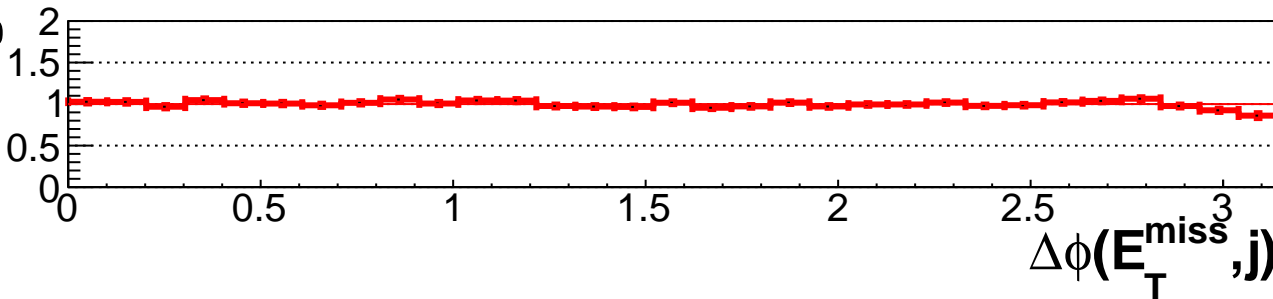
19.2 fb⁻¹ (8 TeV)

CMS

preliminary



Data/Bkg



19.2 fb⁻¹ (8 TeV)

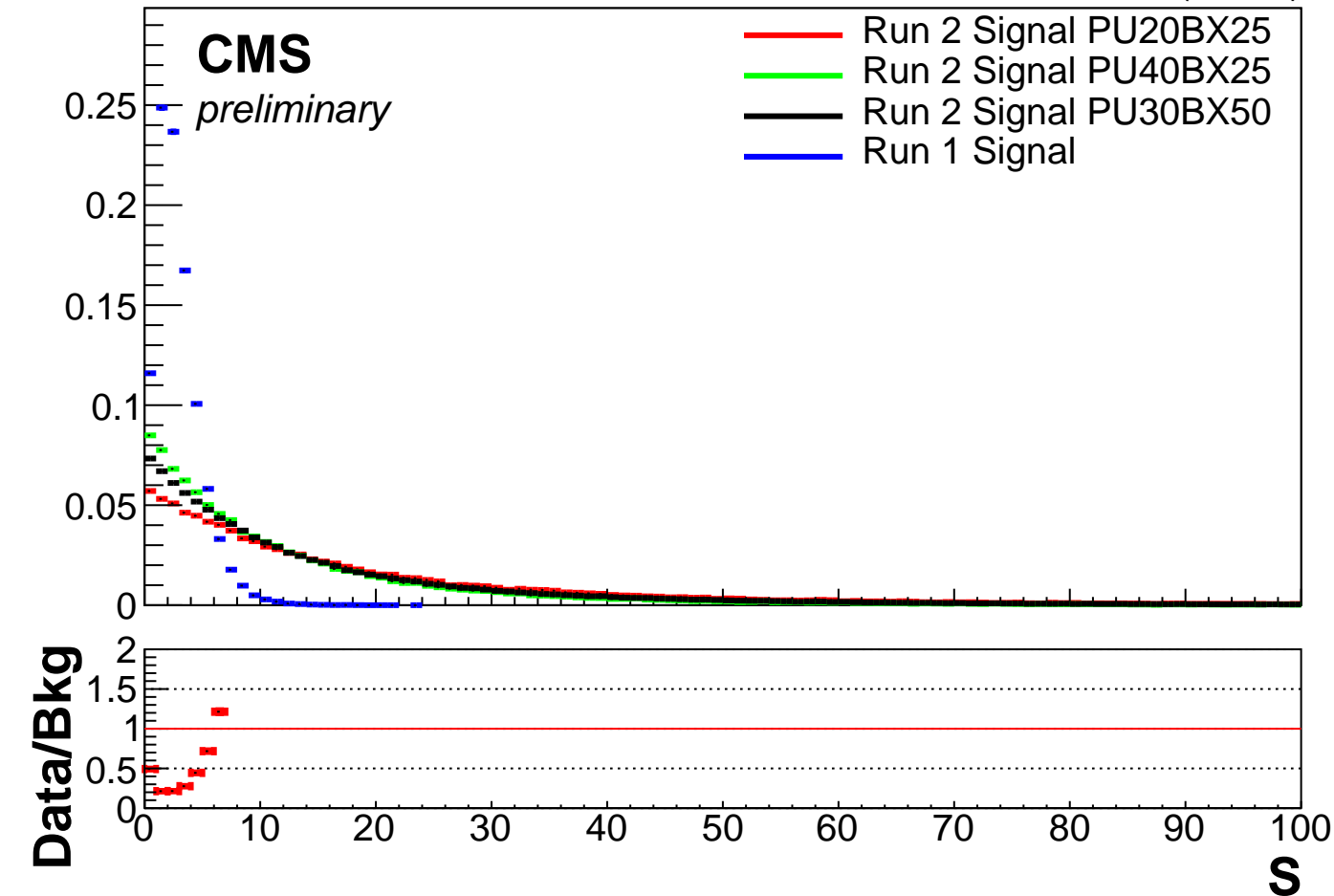
CMS

0.25 *preliminary*

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal

Data/Bkg

S

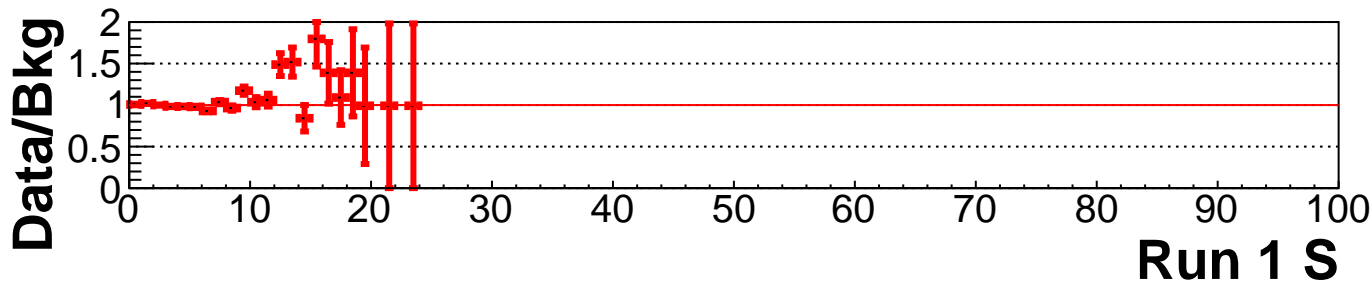
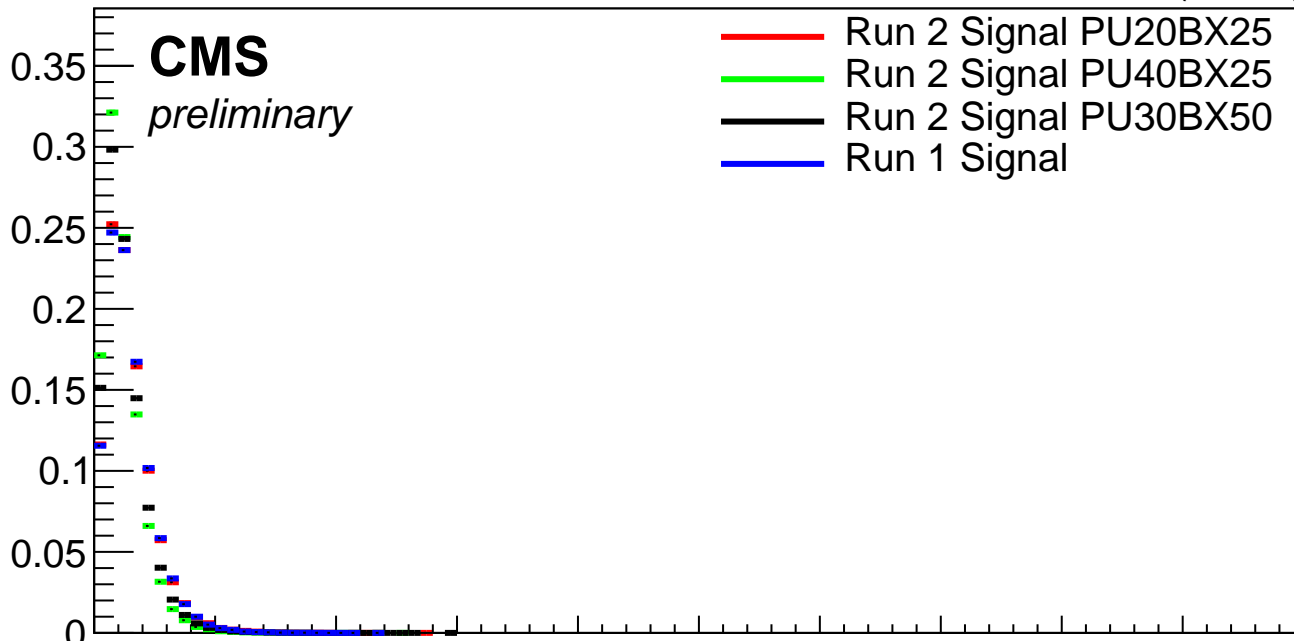


19.2 fb⁻¹ (8 TeV)

CMS

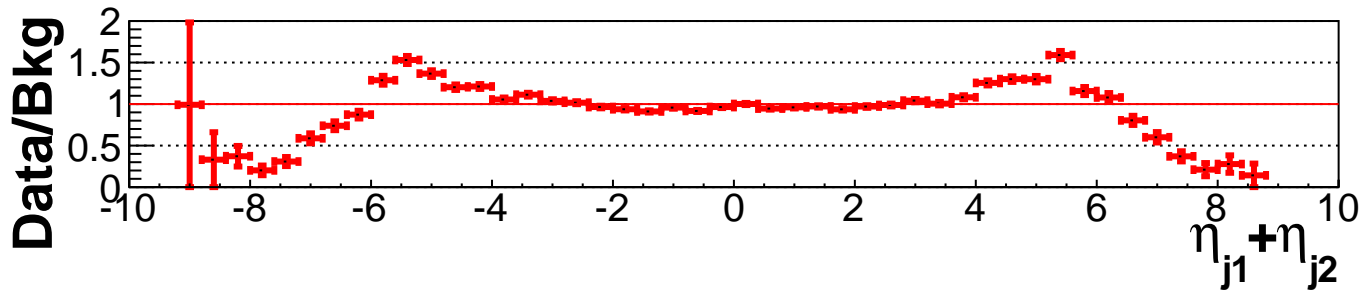
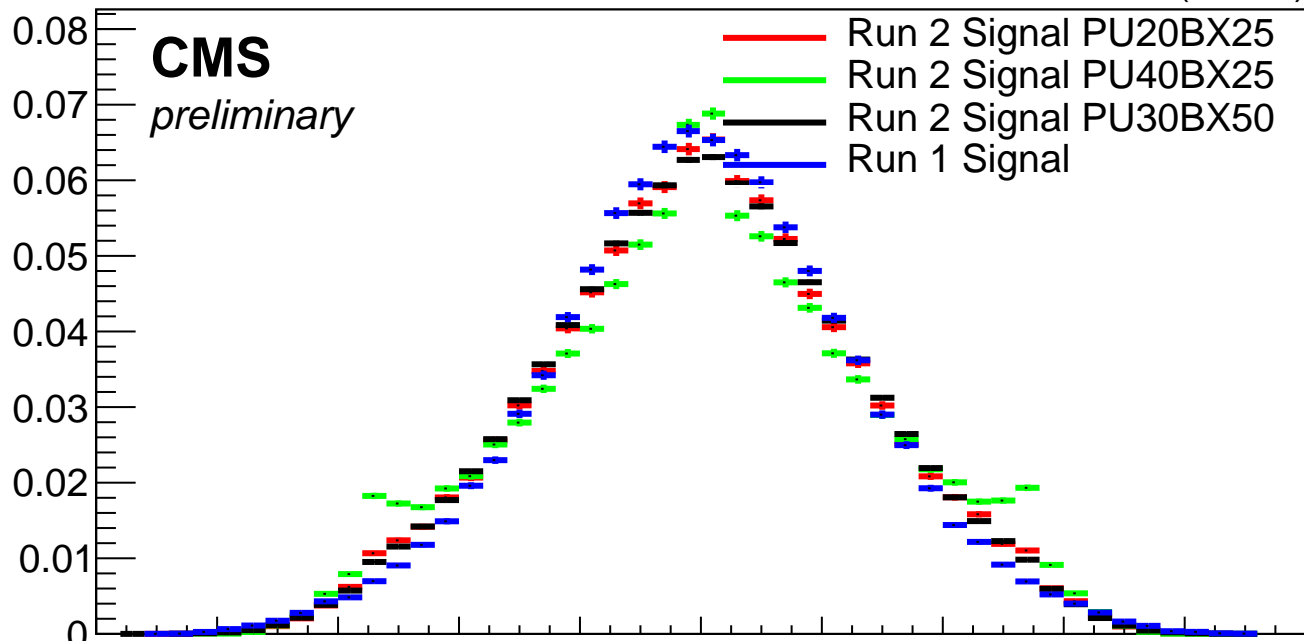
preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal



19.2 fb⁻¹ (8 TeV)

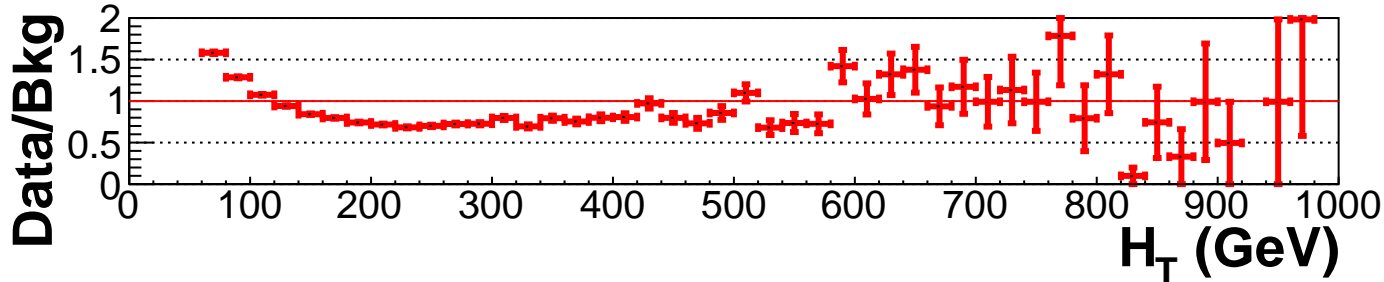
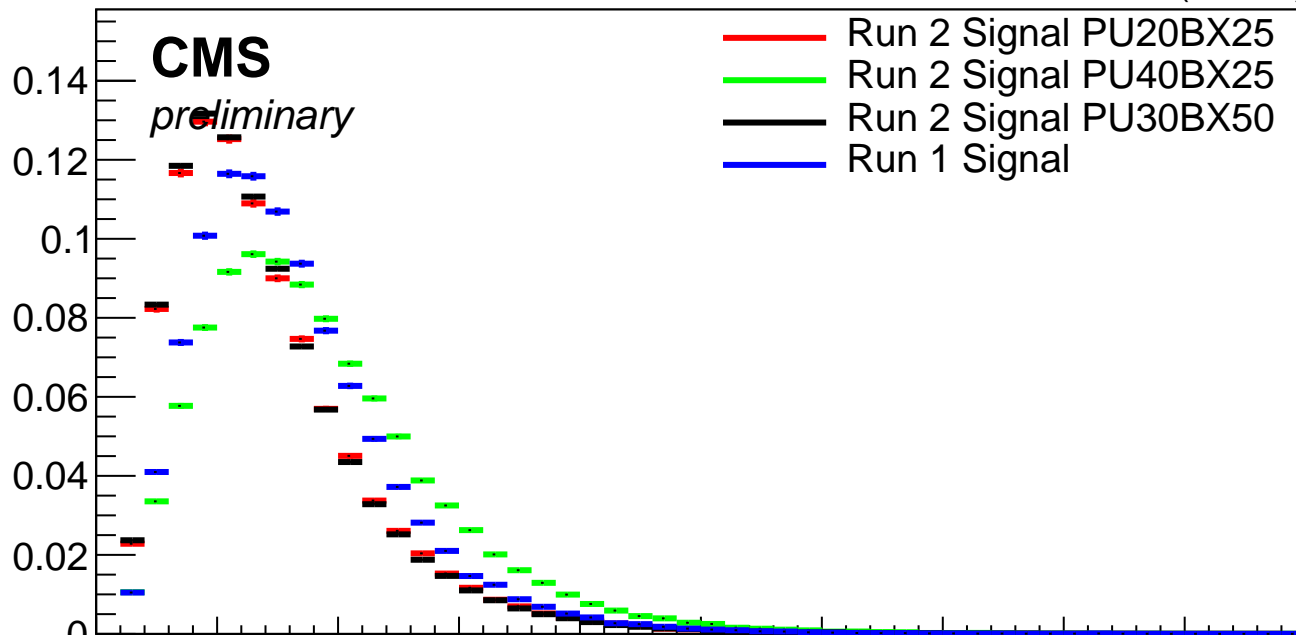
CMS
preliminary



19.2 fb⁻¹ (8 TeV)

CMS

preliminary



19.2 fb⁻¹ (8 TeV)

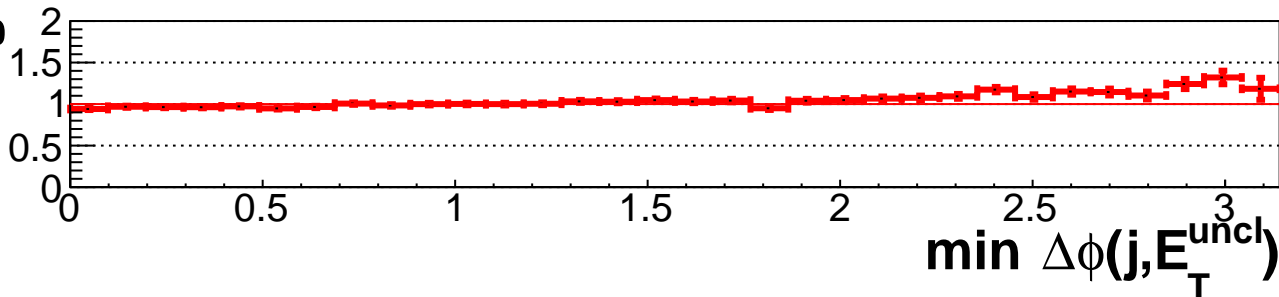
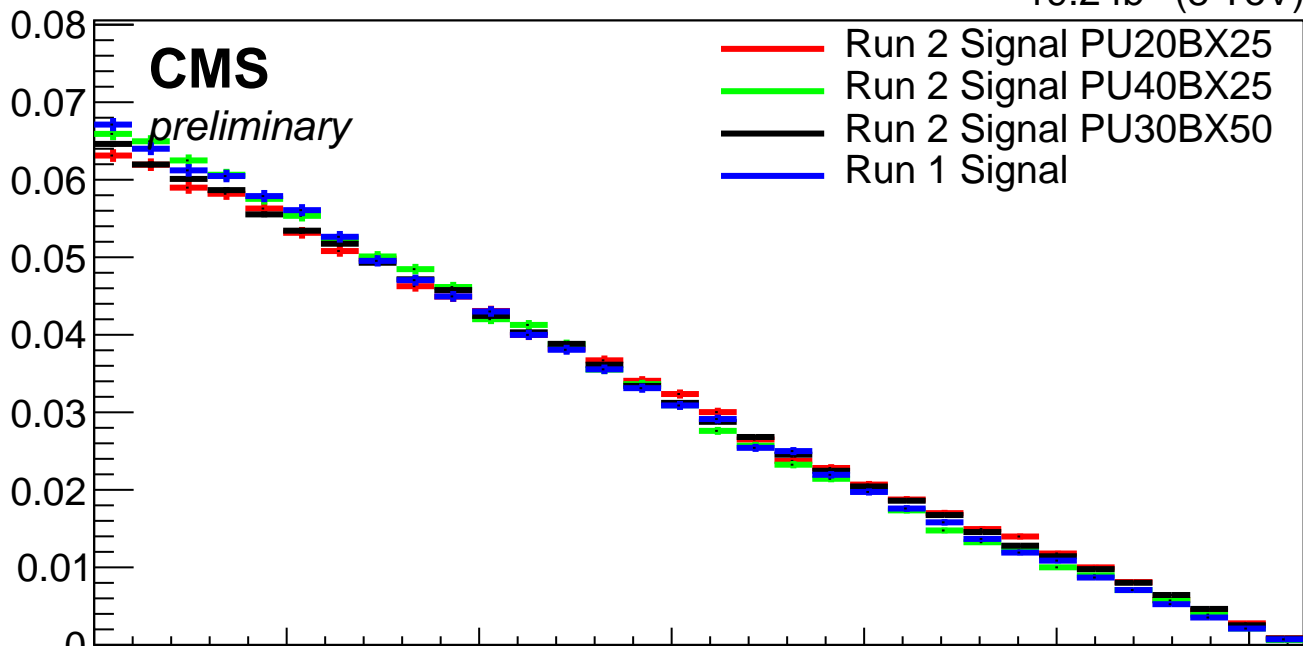
CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal

Data/Bkg

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



19.2 fb⁻¹ (8 TeV)

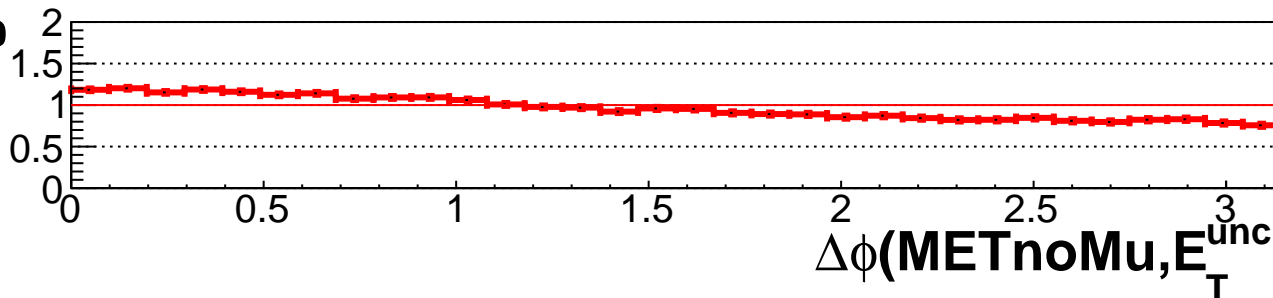
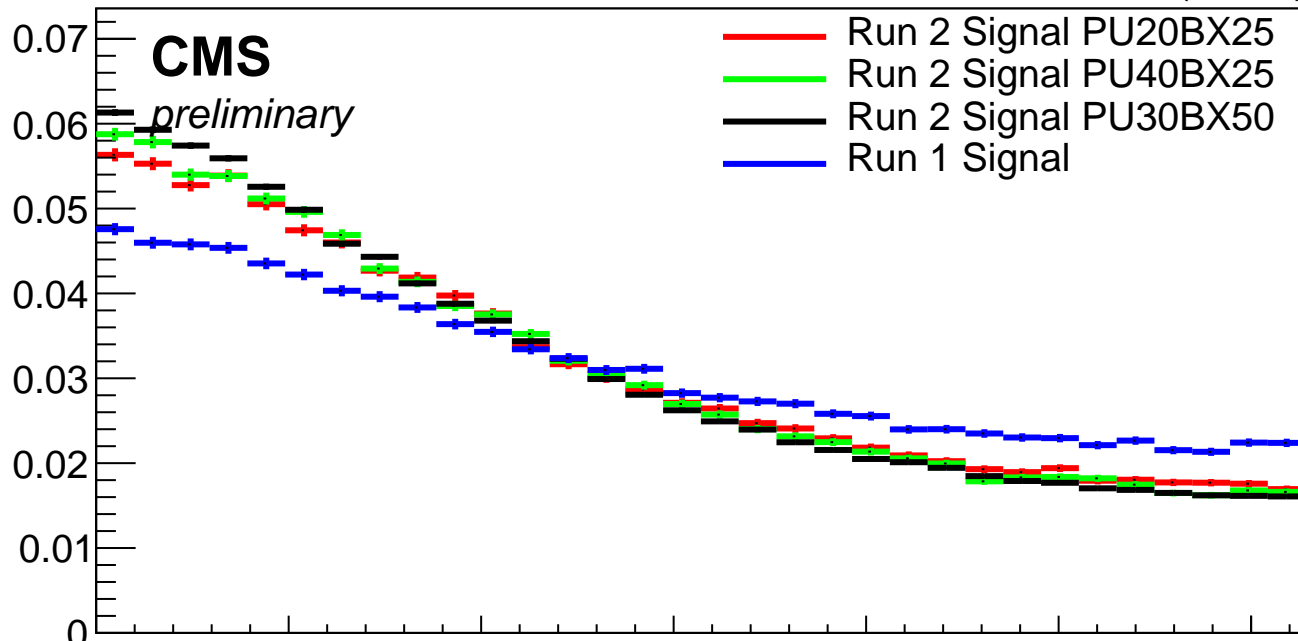
CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal

Data/Bkg

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

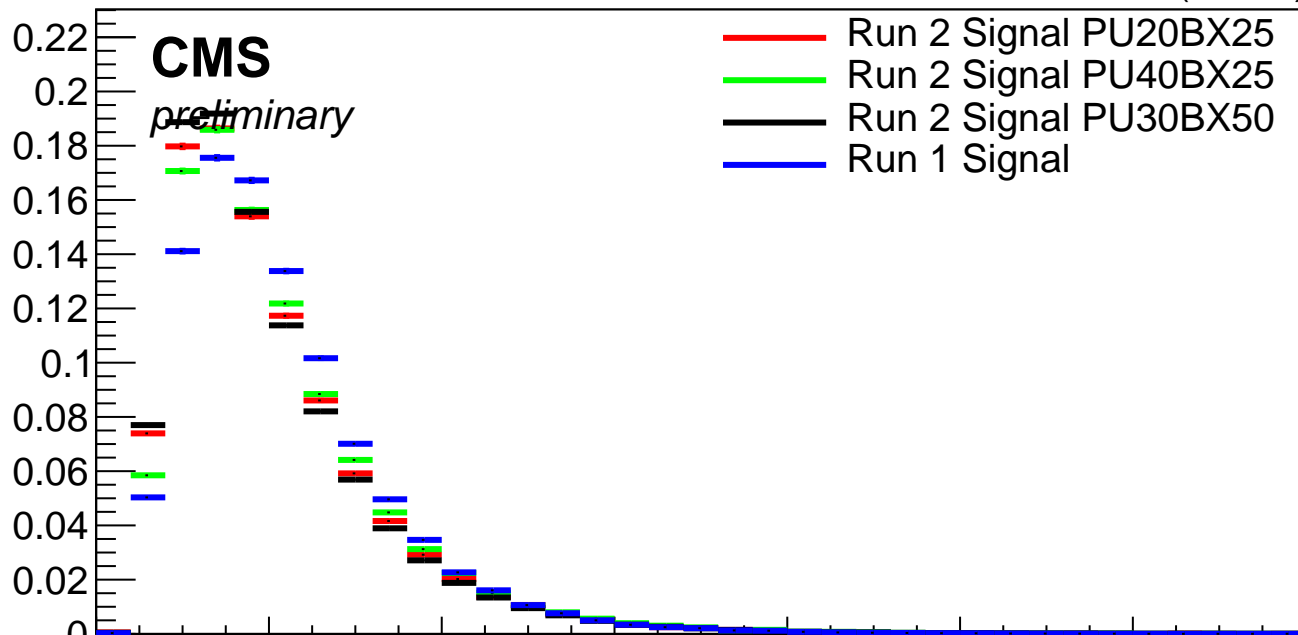


19.2 fb⁻¹ (8 TeV)

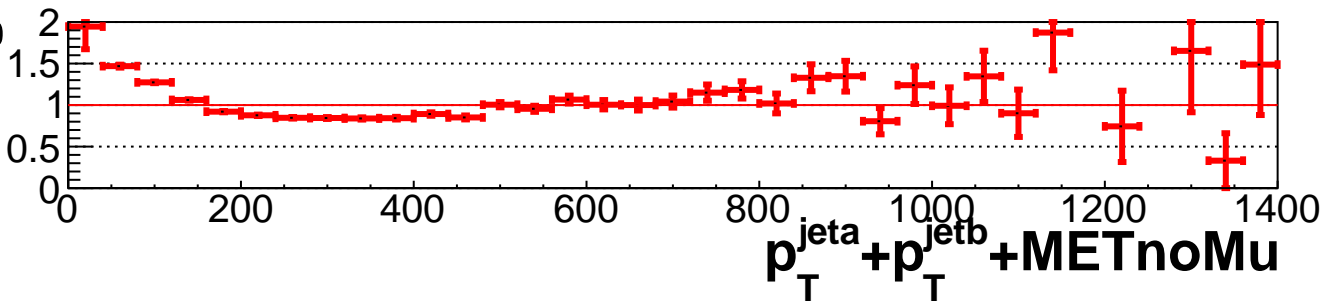
CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal



Data/Bkg



19.2 fb⁻¹ (8 TeV)

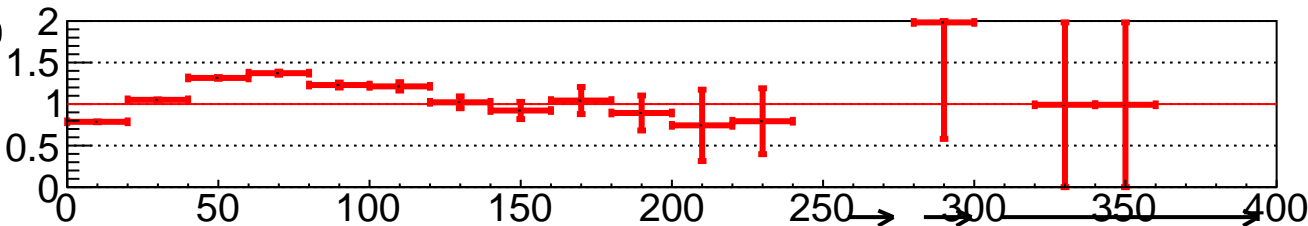
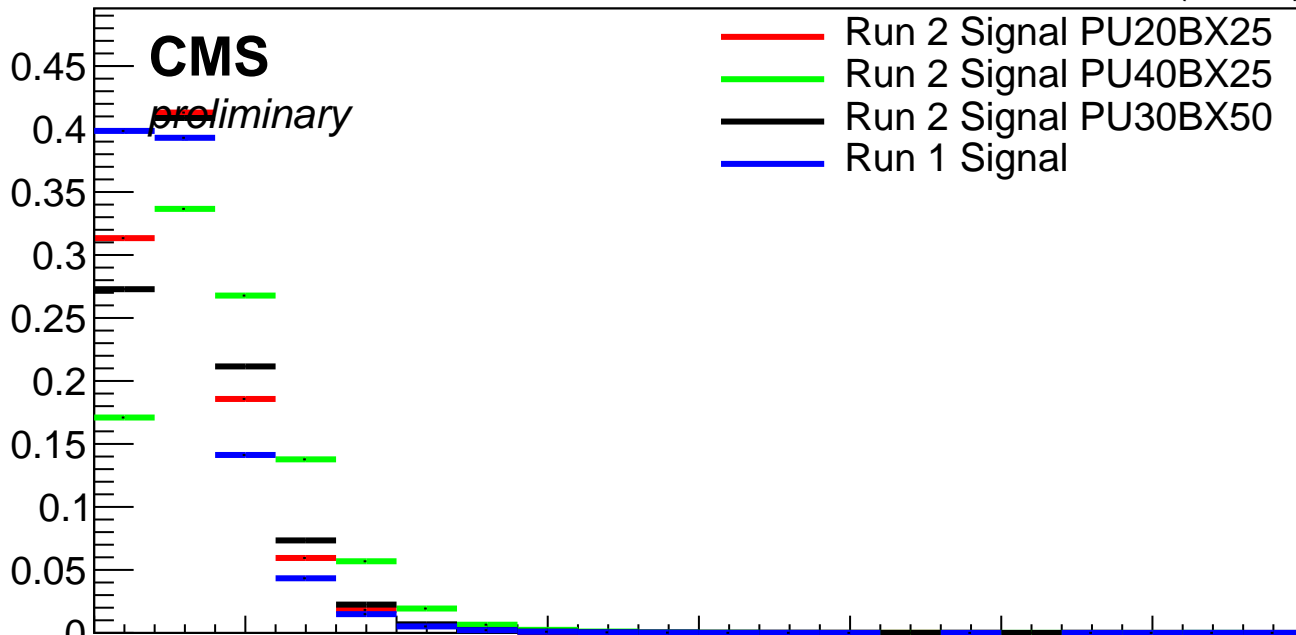
CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal

Data/Bkg

p_T (ja+jb+METnoMu)



19.2 fb⁻¹ (8 TeV)

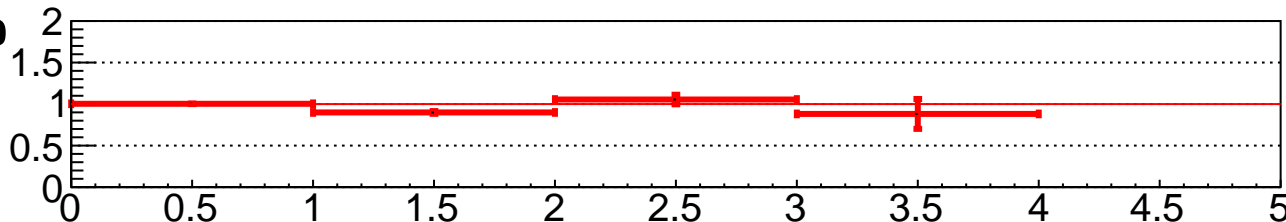
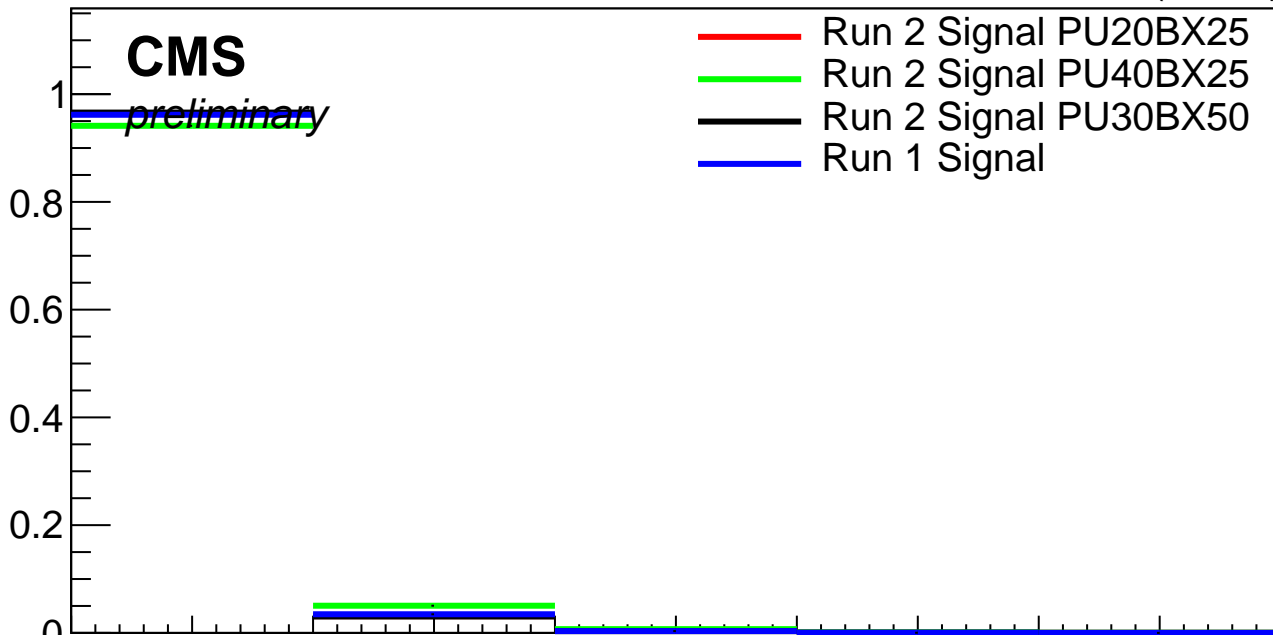
CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal

Data/Bkg

CJV jets (30 GeV)



19.2 fb⁻¹ (8 TeV)

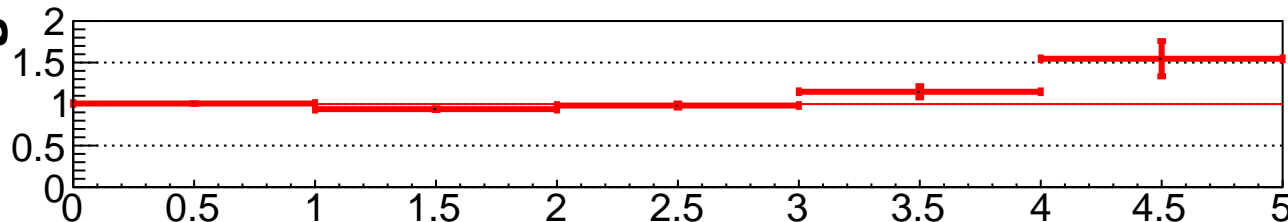
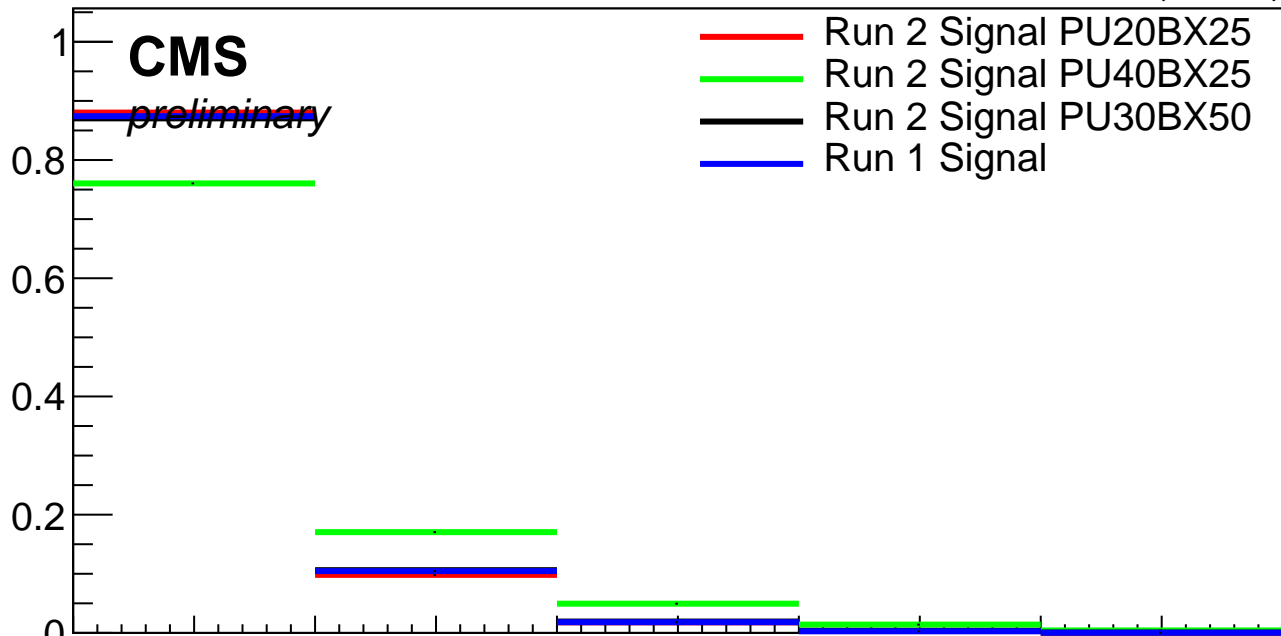
CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal

Data/Bkg

CJV jets (20 GeV EB, 30 GeV EE)

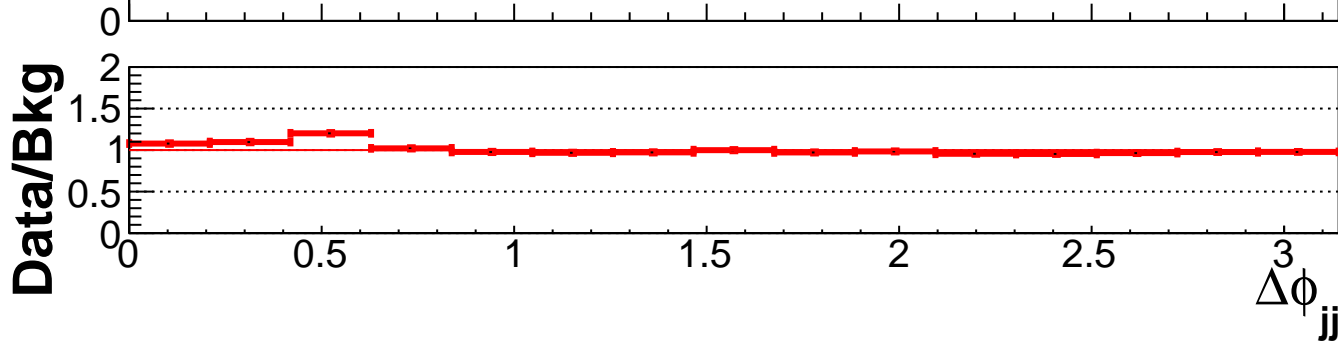


19.2 fb⁻¹ (8 TeV)

CMS

preliminary

— Run 2 Signal PU20BX25
— Run 2 Signal PU40BX25
— Run 2 Signal PU30BX50
— Run 1 Signal



19.2 fb⁻¹ (8 TeV)

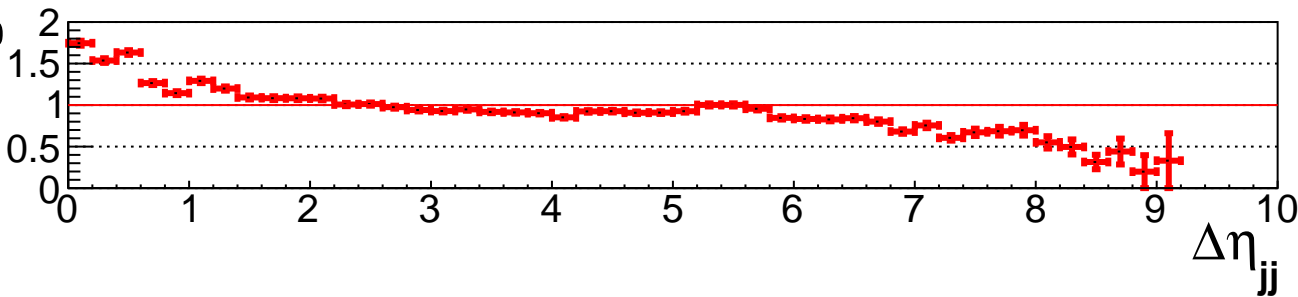
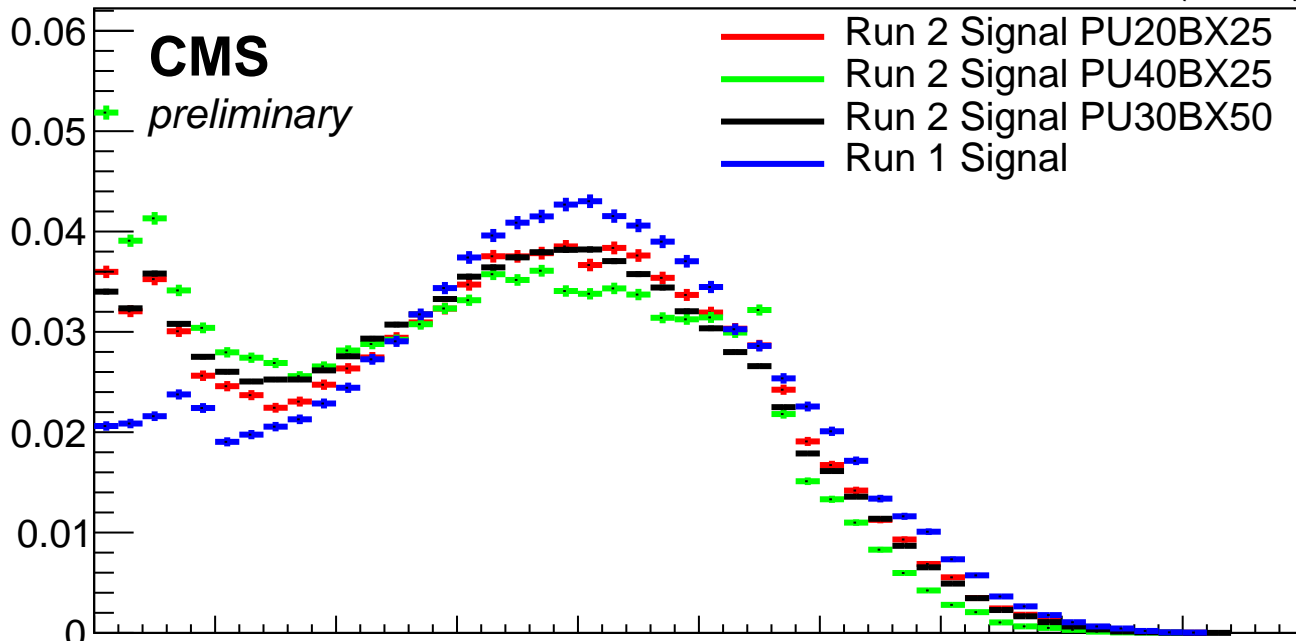
CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal

Data/Bkg

$\Delta\eta_{jj}$

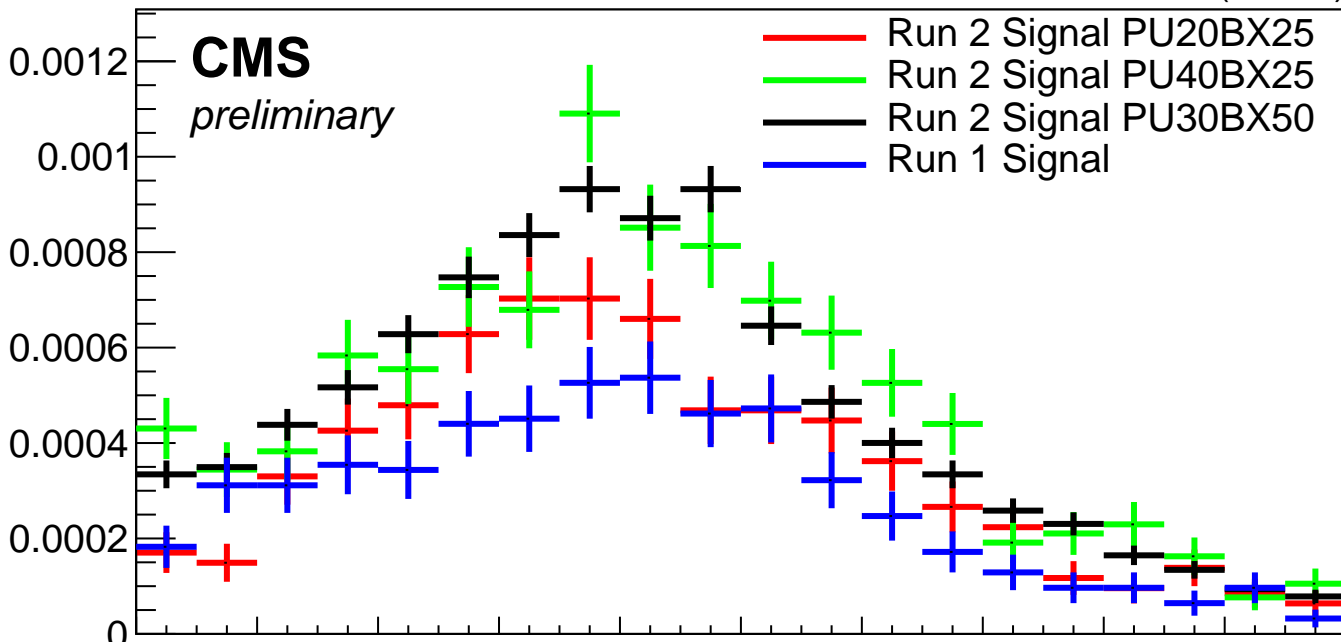


19.2 fb⁻¹ (8 TeV)

CMS

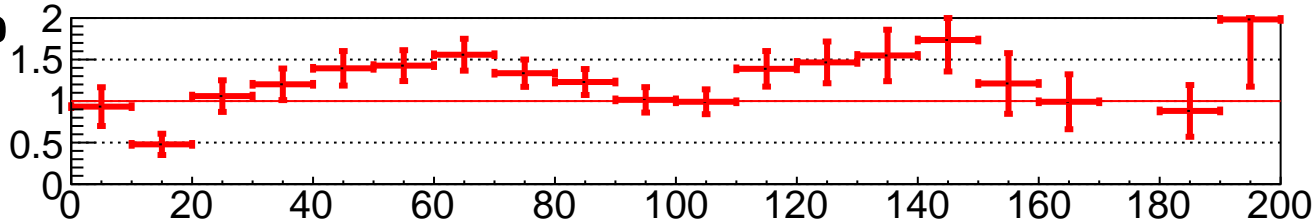
preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal



Data/Bkg

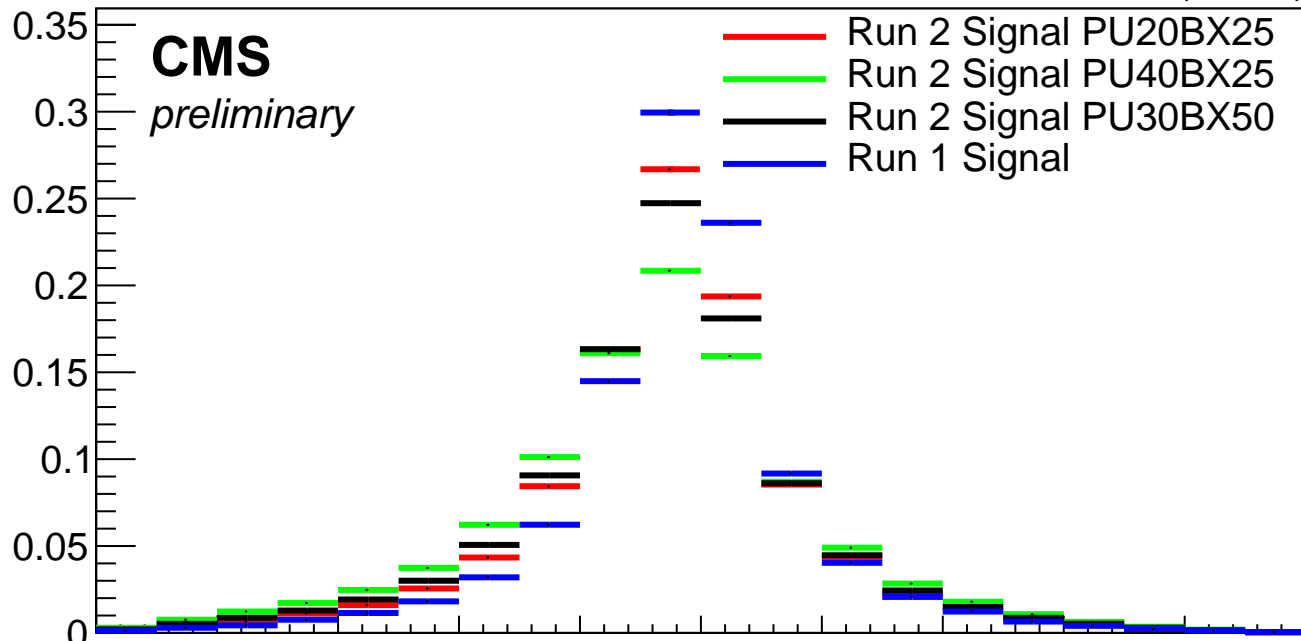
$m_T(\text{lepton}+\text{MET})$ (GeV)



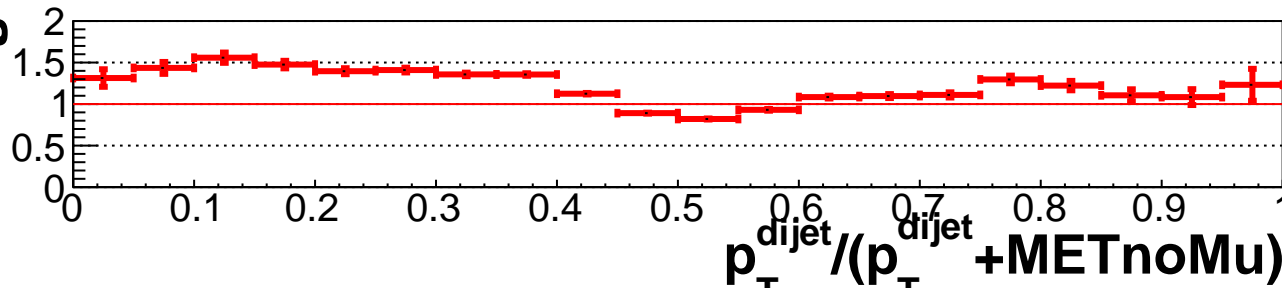
19.2 fb⁻¹ (8 TeV)

CMS

preliminary



Data/Bkg



19.2 fb⁻¹ (8 TeV)

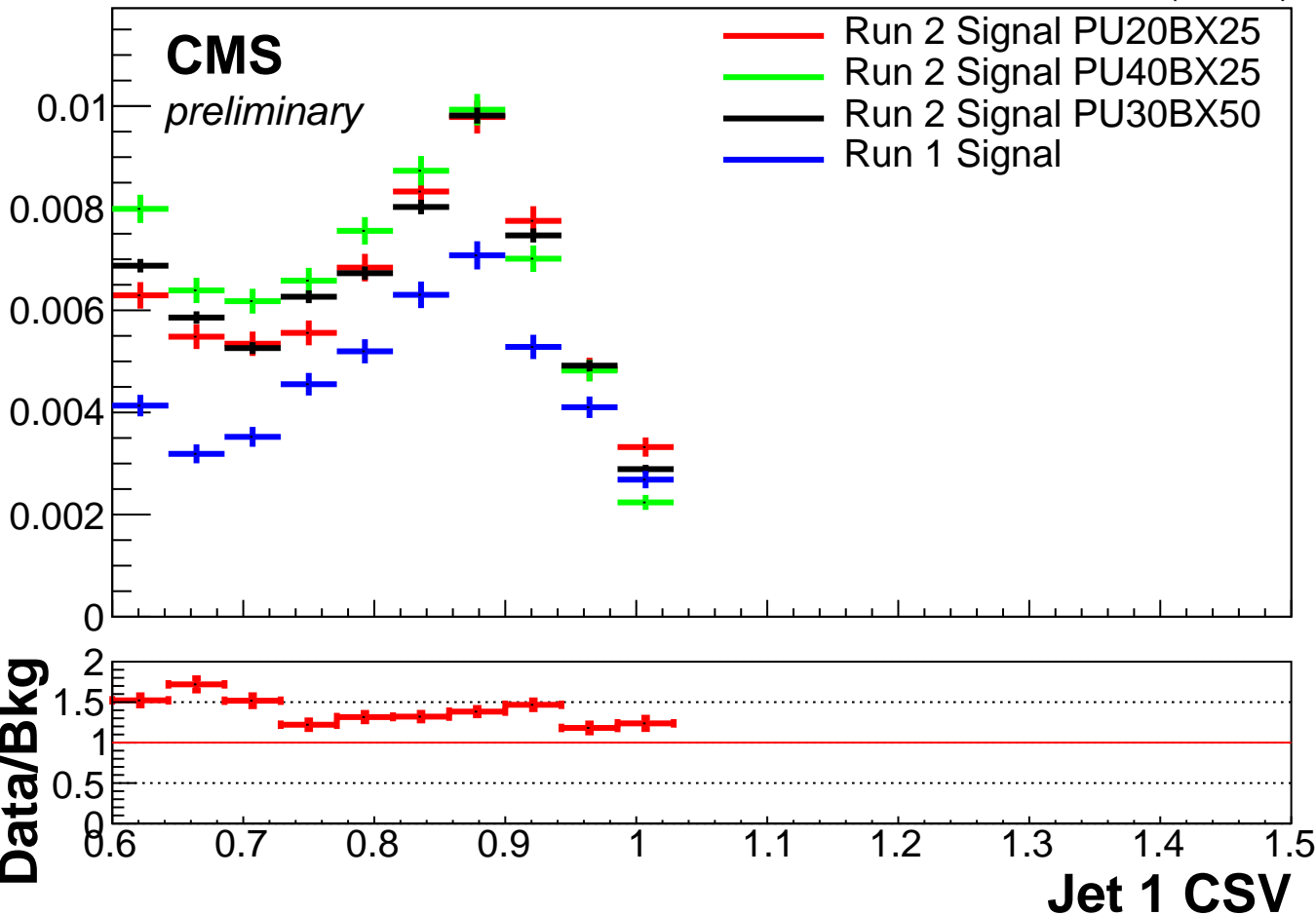
CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal

Data/Bkg

Jet 1 CSV

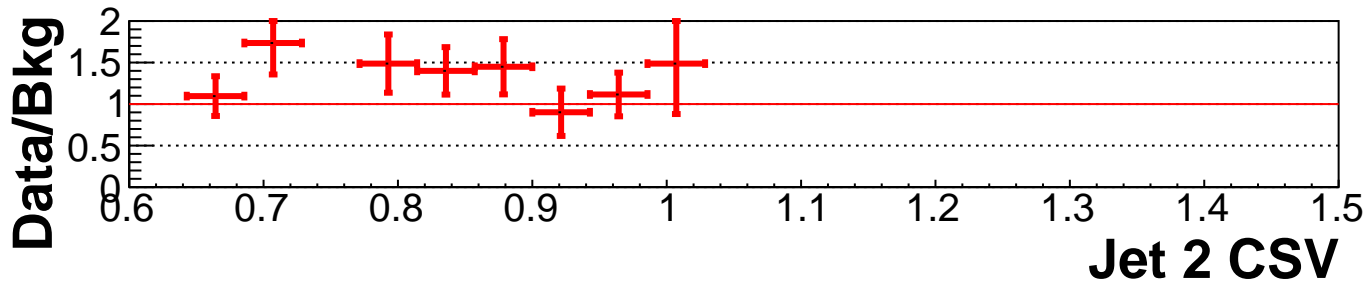


19.2 fb⁻¹ (8 TeV)

CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal

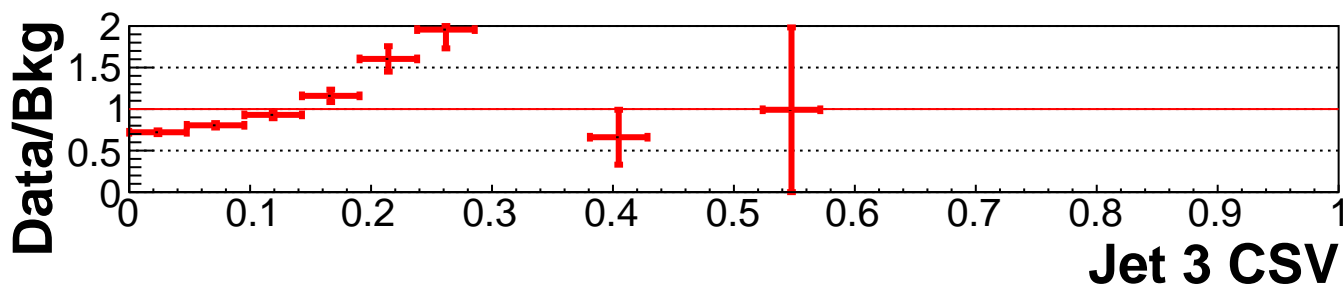


19.2 fb⁻¹ (8 TeV)

CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal



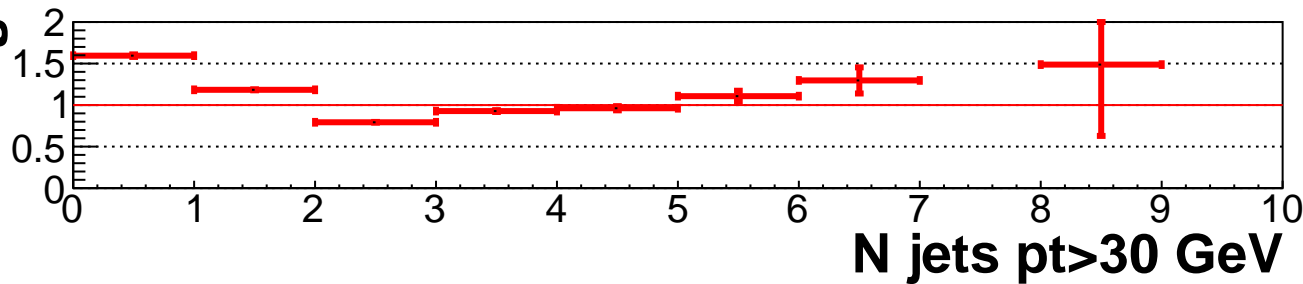
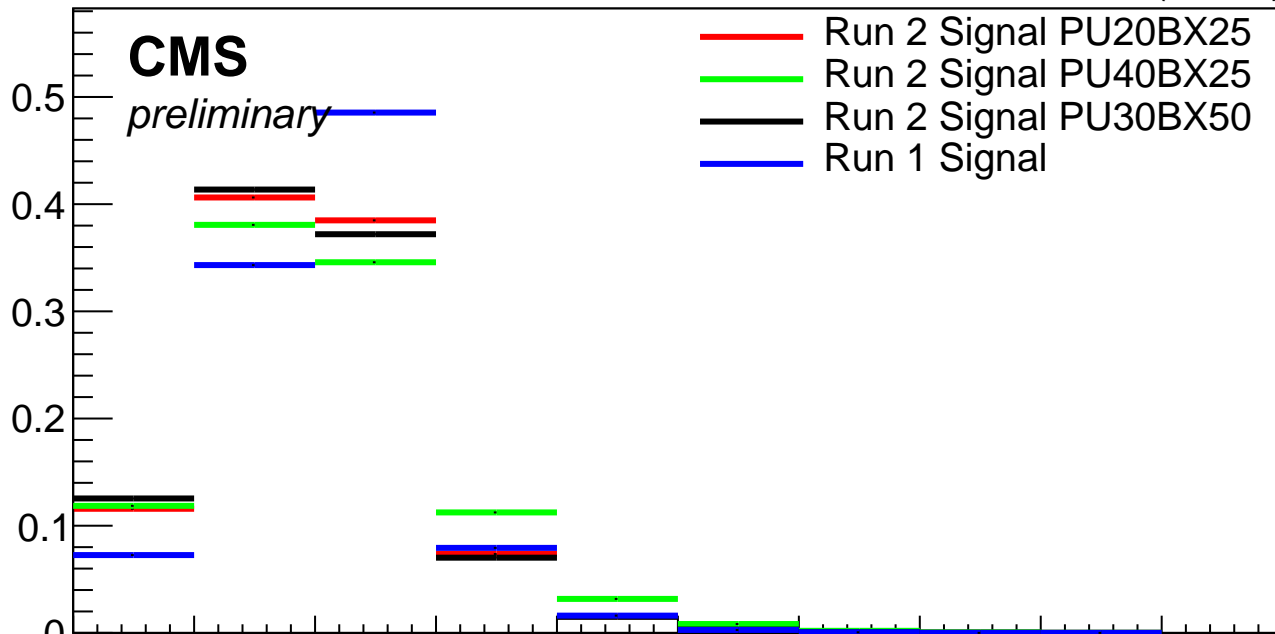
19.2 fb⁻¹ (8 TeV)

CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal

Data/Bkg

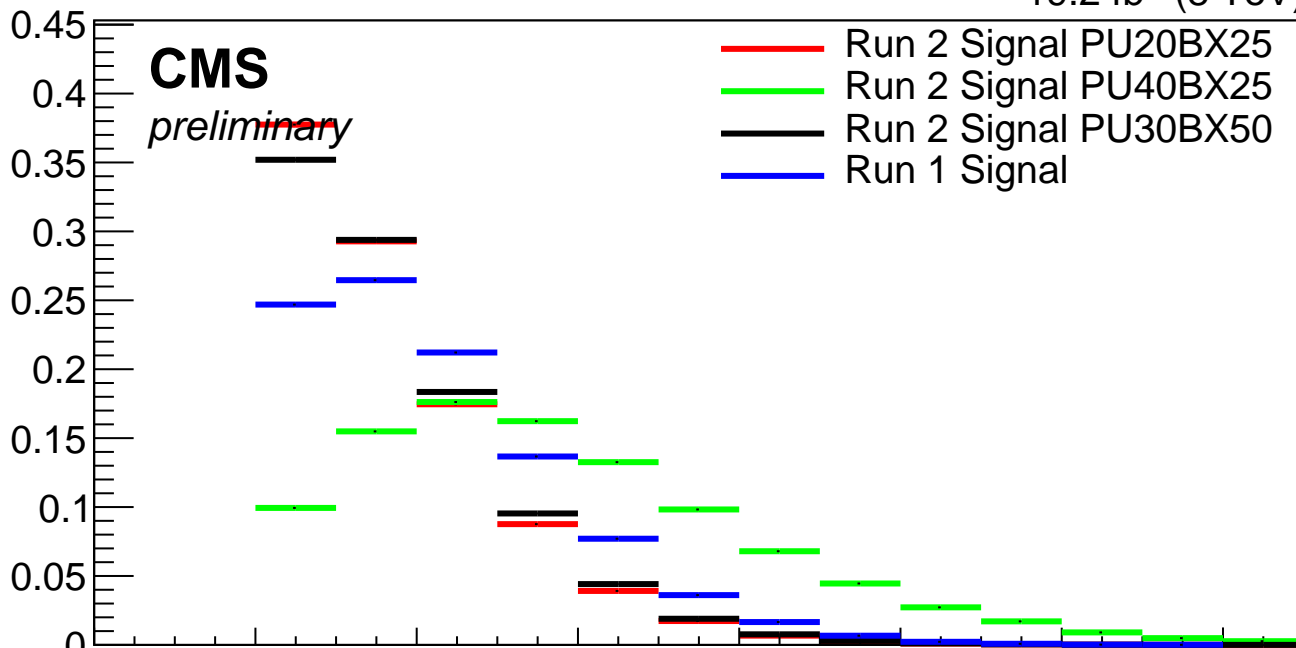


19.2 fb⁻¹ (8 TeV)

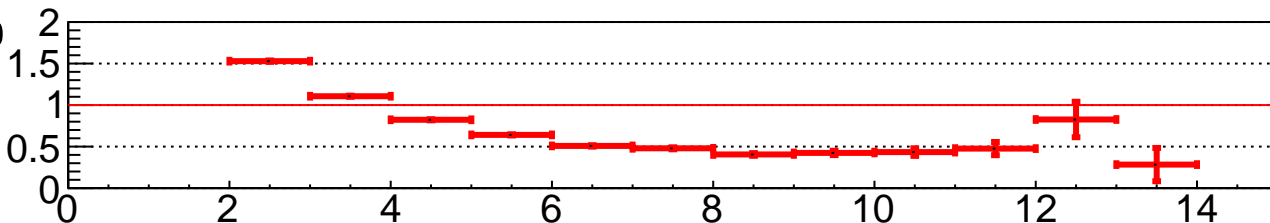
CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal



Data/Bkg



N jets pt > 15 GeV

19.2 fb⁻¹ (8 TeV)

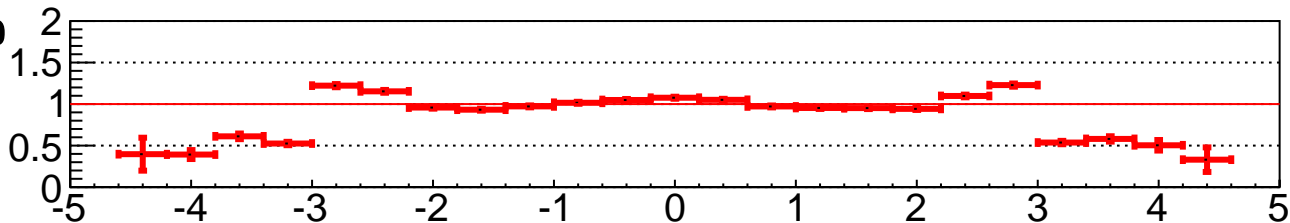
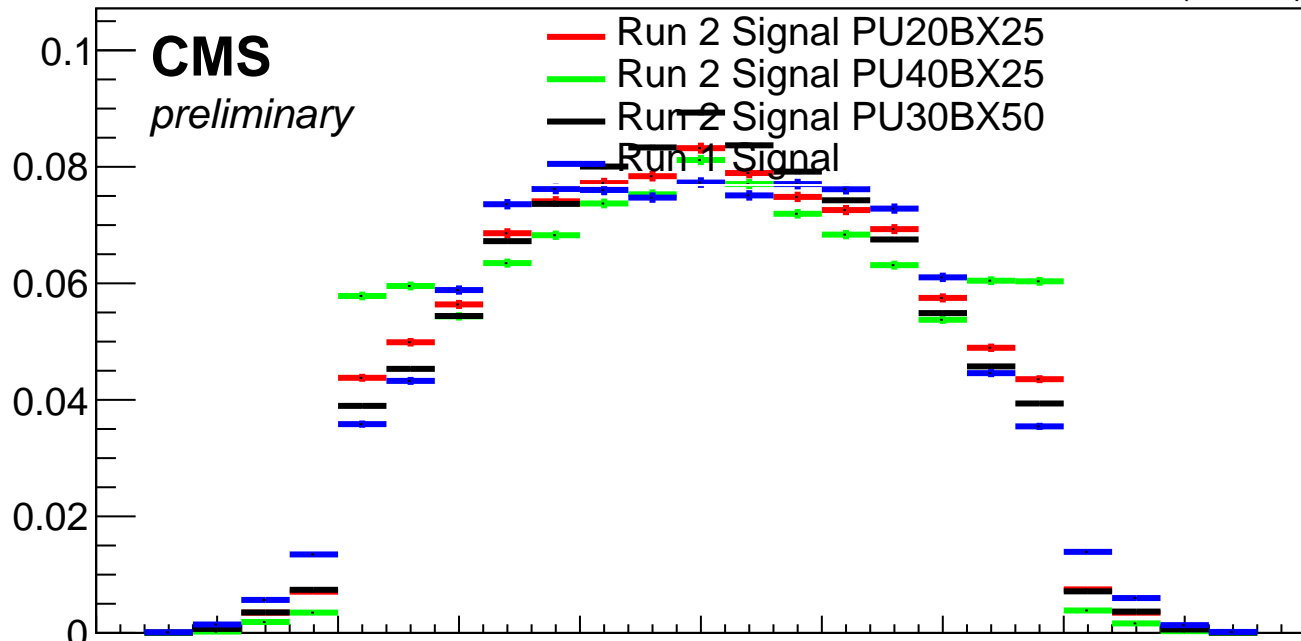
CMS

preliminary

— Run 2 Signal PU20BX25
— Run 2 Signal PU40BX25
— Run 2 Signal PU30BX50
— Run 1 Signal

Data/Bkg

Central tag jet η

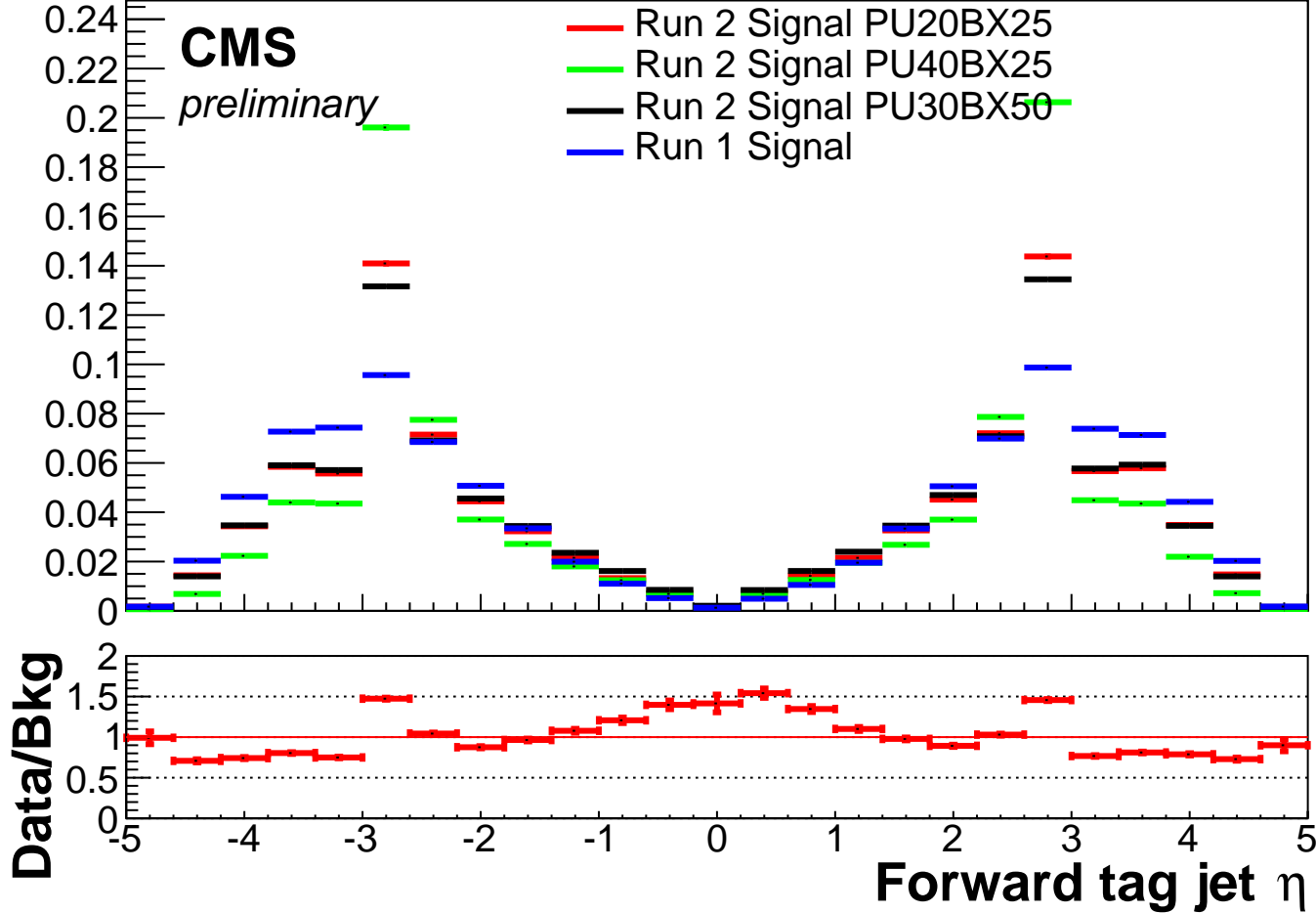


19.2 fb⁻¹ (8 TeV)

CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal

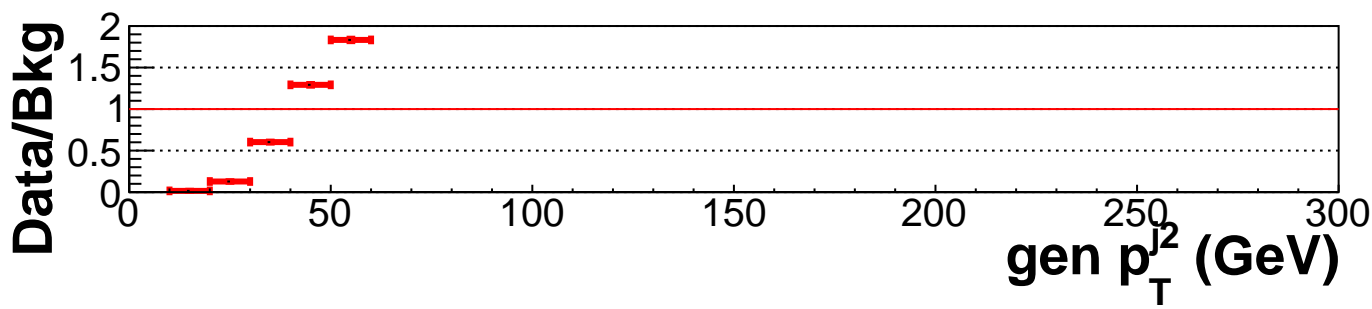


19.2 fb⁻¹ (8 TeV)

CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal

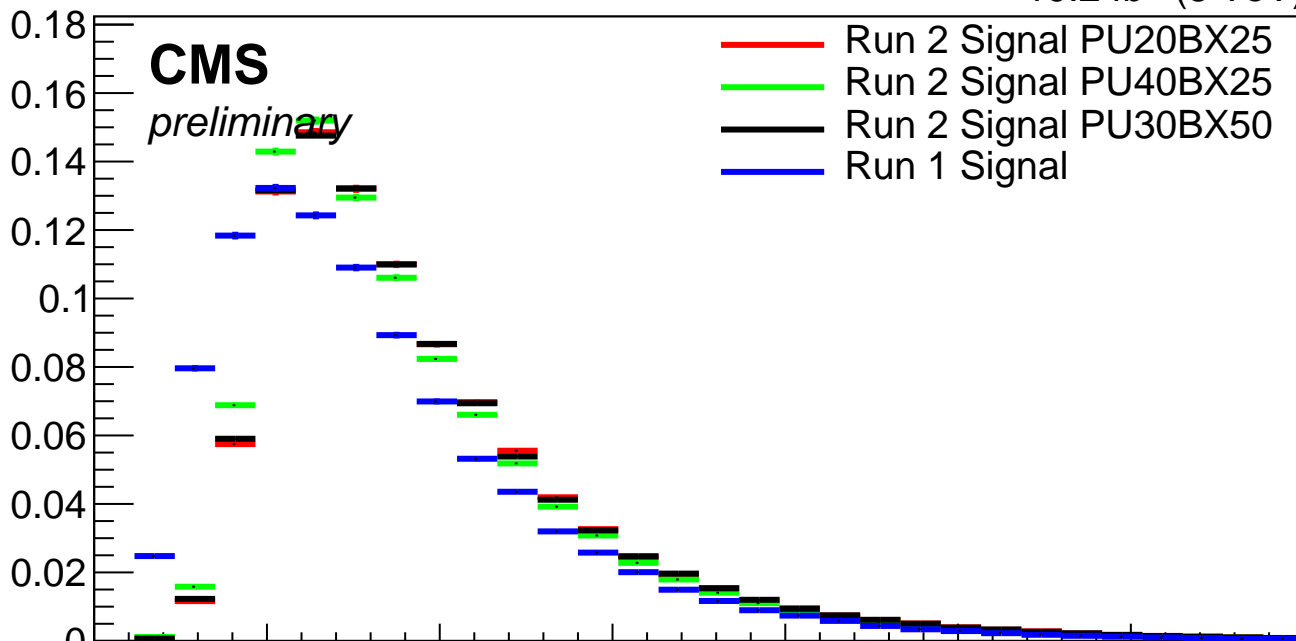


19.2 fb⁻¹ (8 TeV)

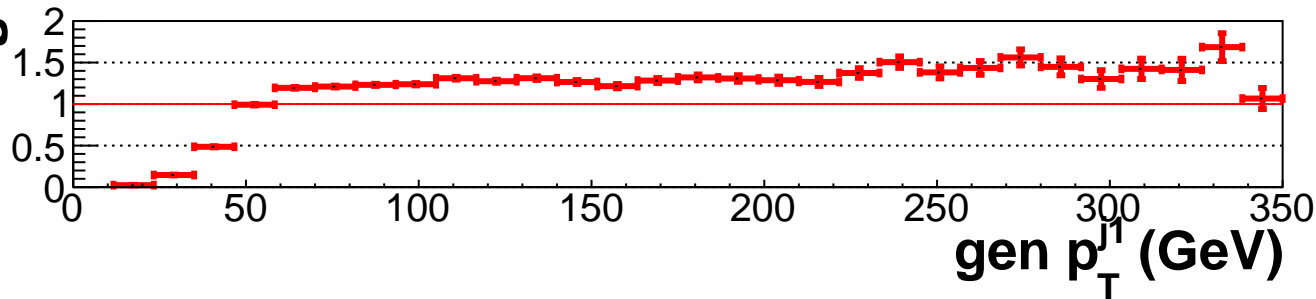
CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal



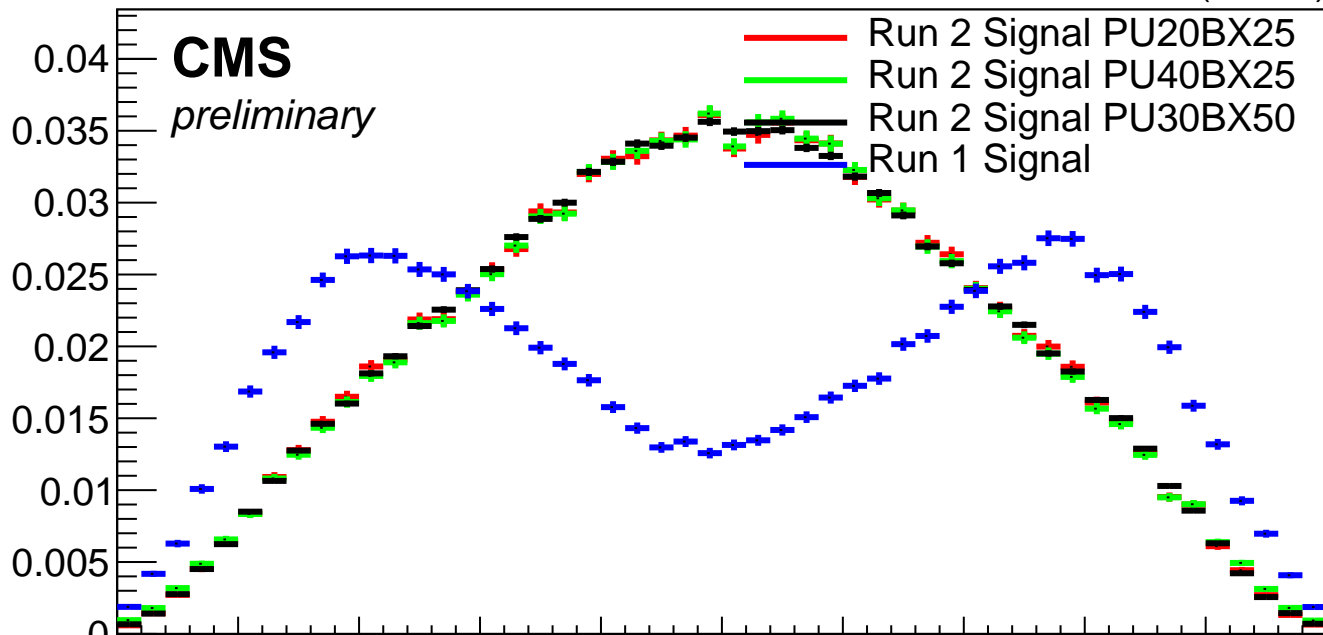
Data/Bkg



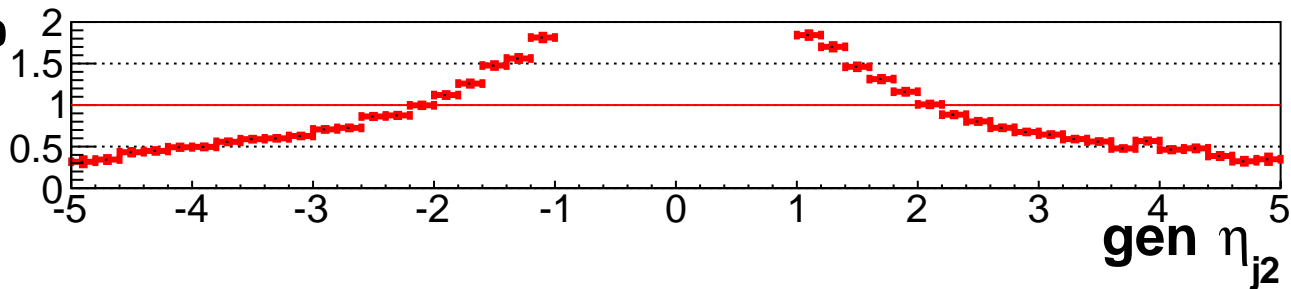
19.2 fb⁻¹ (8 TeV)

CMS

preliminary



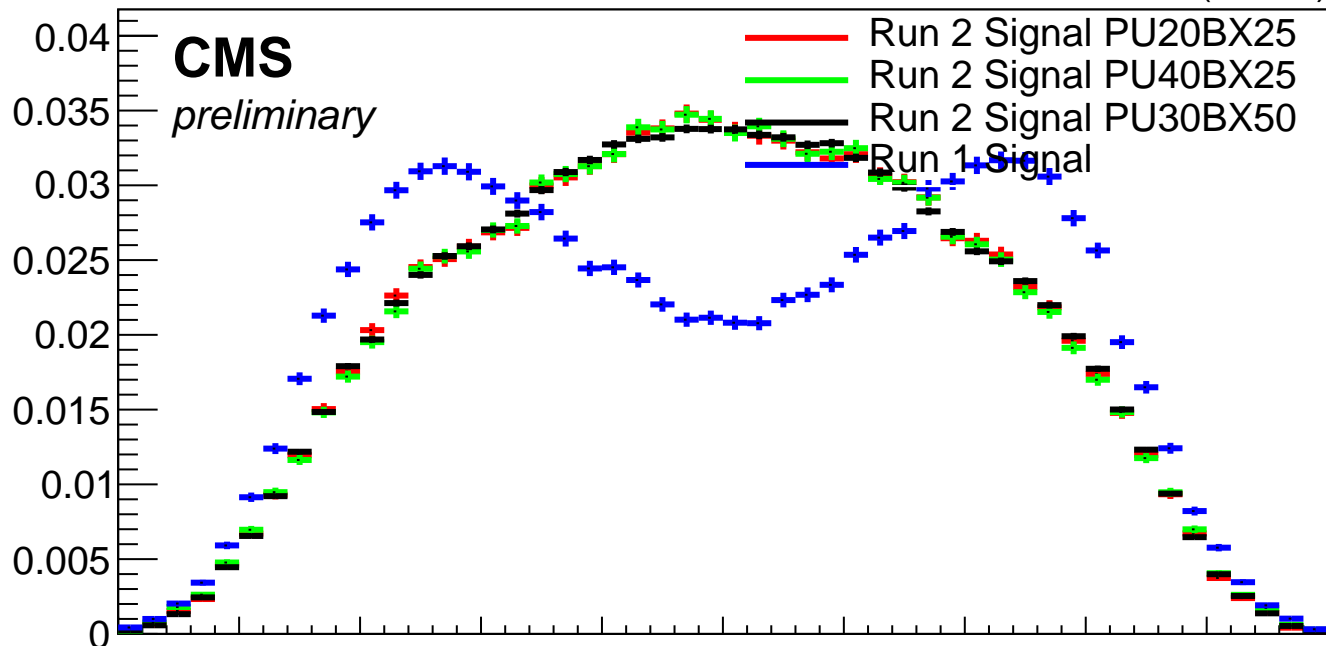
Data/Bkg



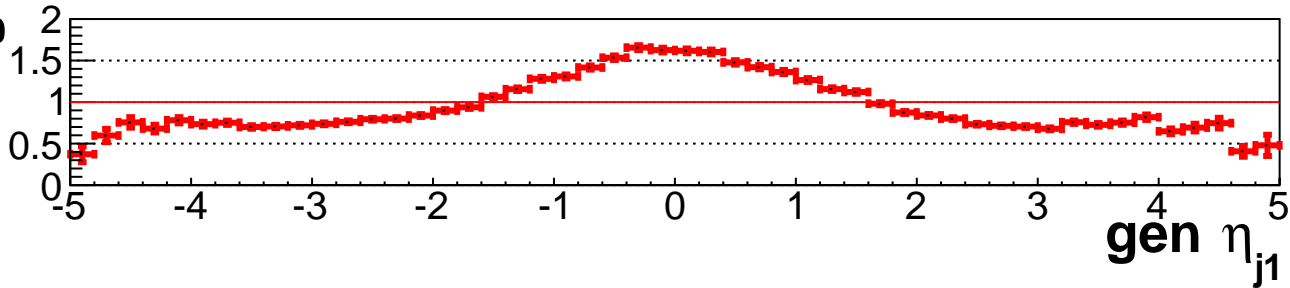
19.2 fb⁻¹ (8 TeV)

CMS

preliminary



Data/Bkg



19.2 fb⁻¹ (8 TeV)

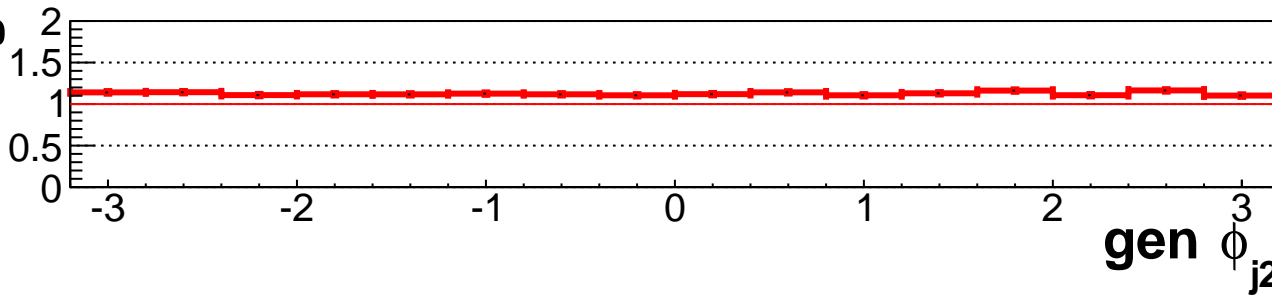
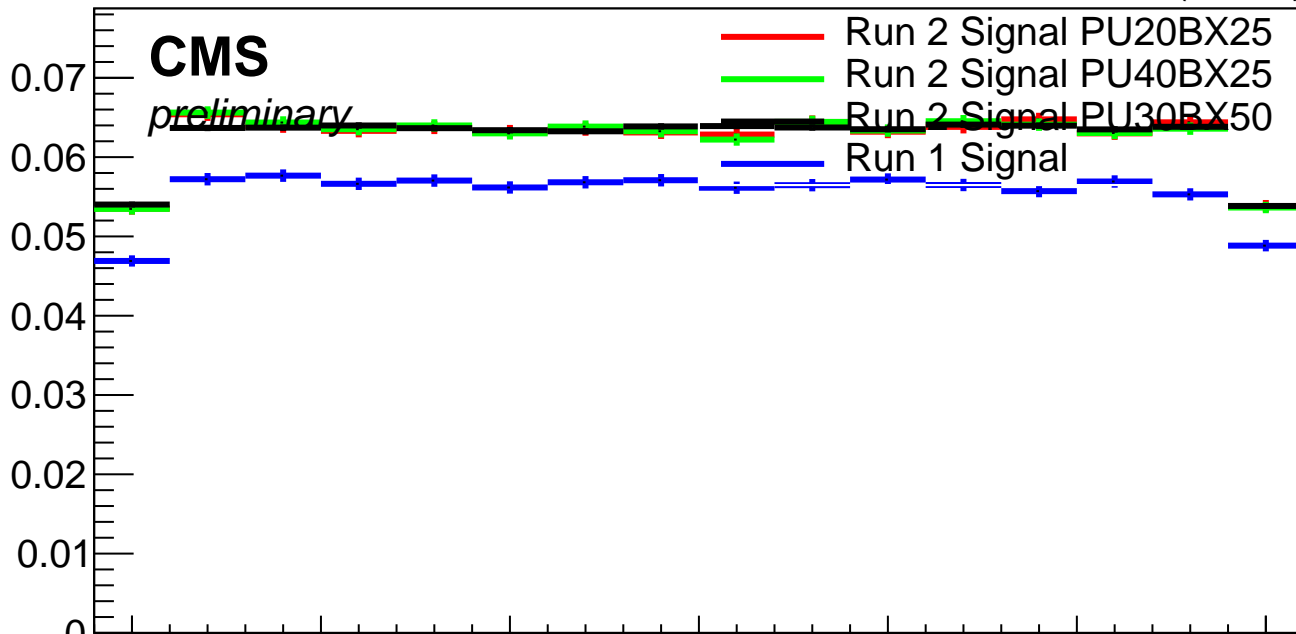
CMS

preliminary

Run 2 Signal PU20BX25
Run 2 Signal PU40BX25
Run 2 Signal PU30BX50
Run 1 Signal

Data/Bkg

gen ϕ_{j2}



19.2 fb⁻¹ (8 TeV)

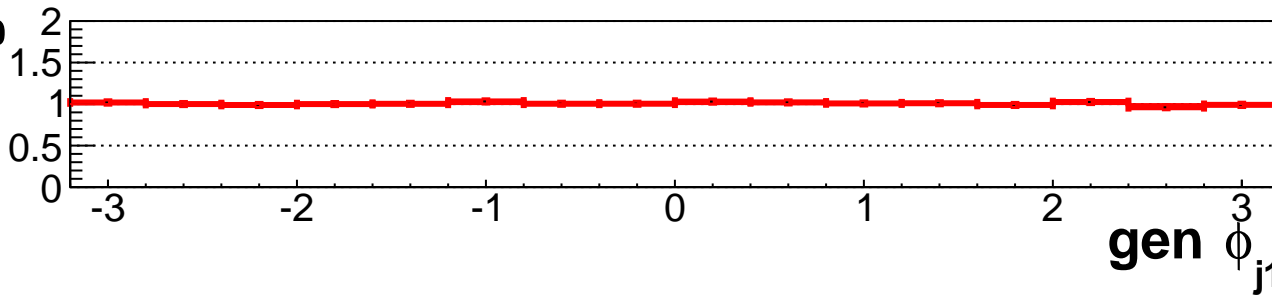
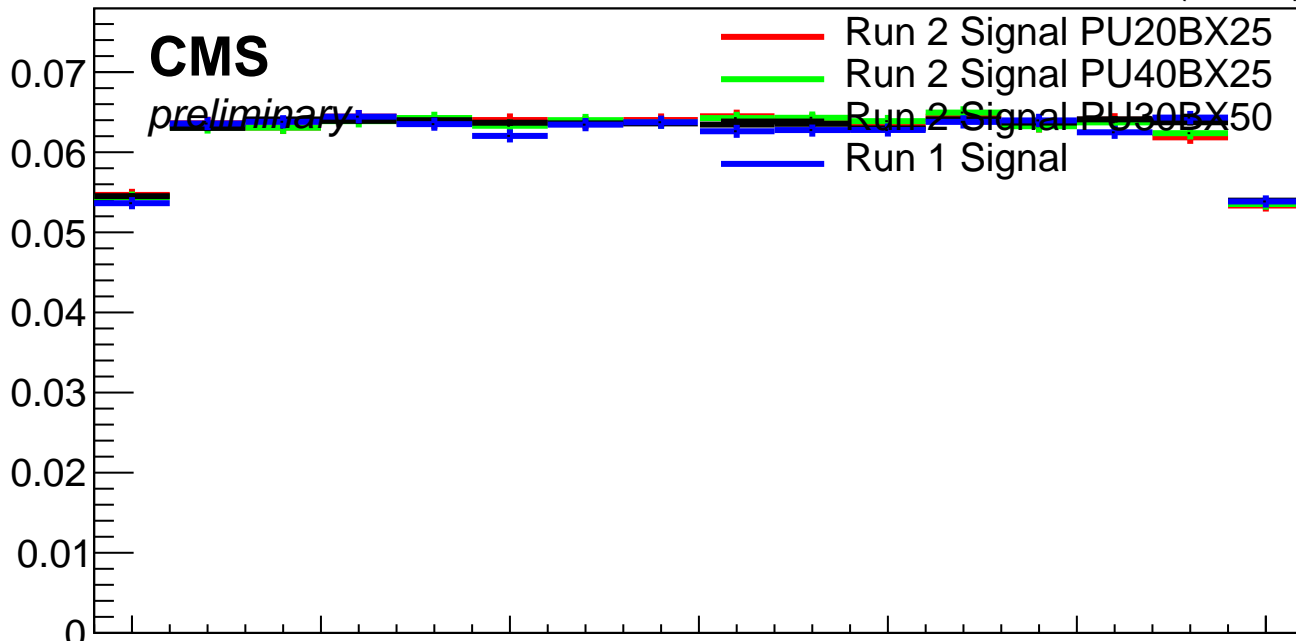
CMS

preliminary

Run 2 Signal PU20BX25
Run 2 Signal PU40BX25
Run 2 Signal PU30BX50
Run 1 Signal

Data/Bkg

gen ϕ_{j1}

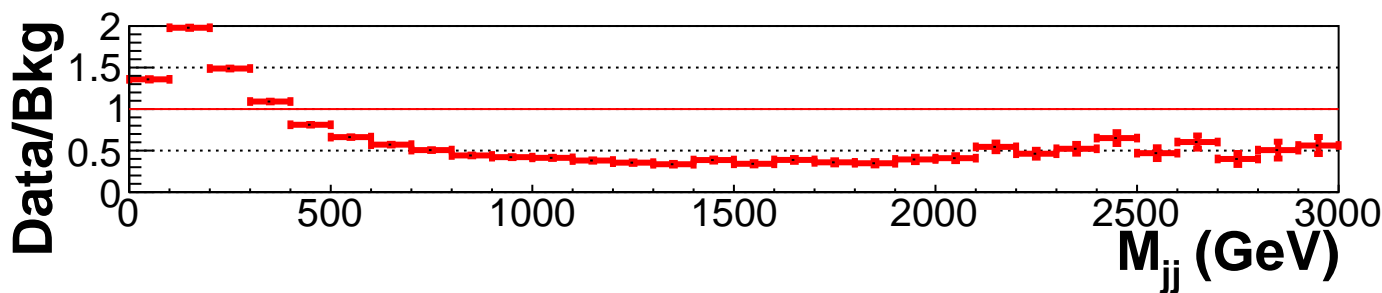


19.2 fb⁻¹ (8 TeV)

CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal

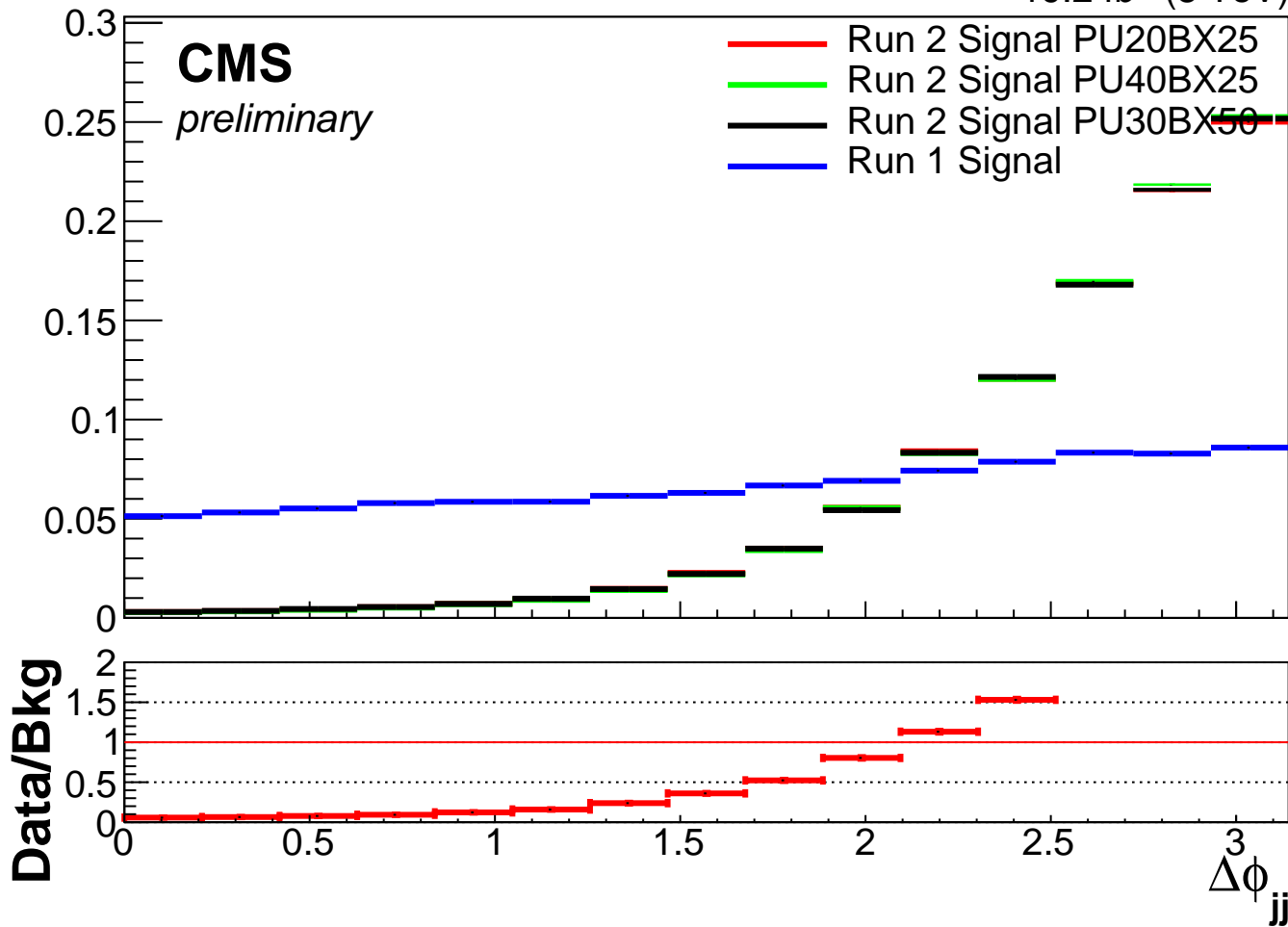


19.2 fb⁻¹ (8 TeV)

CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal

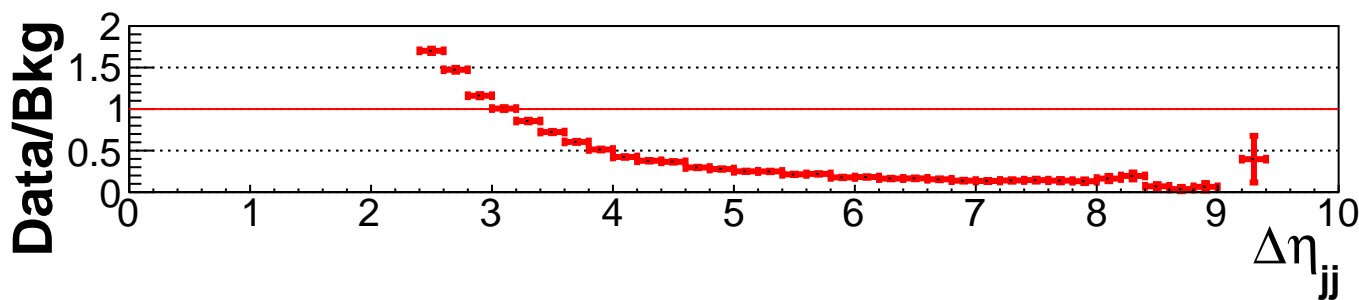


19.2 fb⁻¹ (8 TeV)

CMS

preliminary

- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal

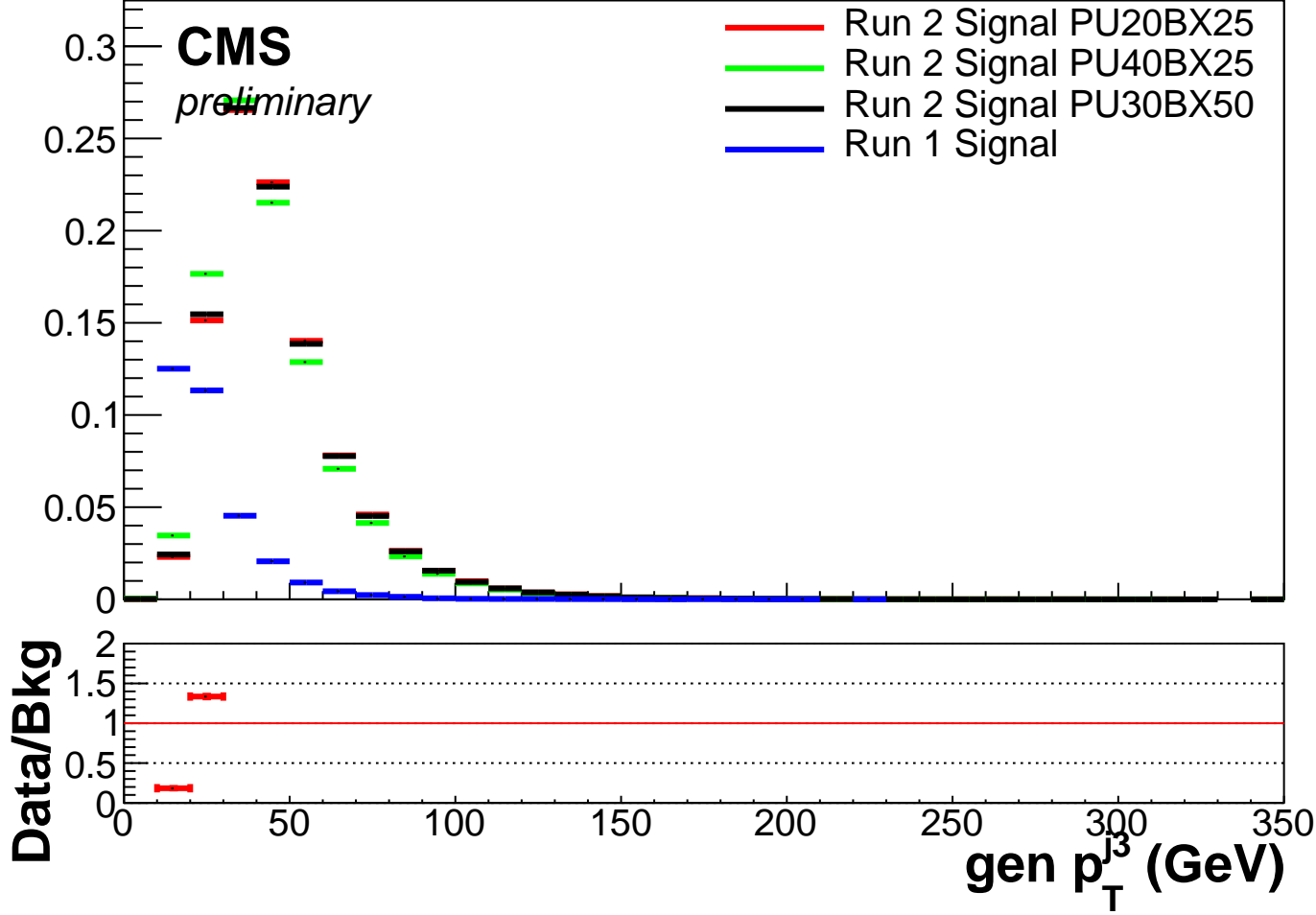


19.2 fb⁻¹ (8 TeV)

CMS

preliminary

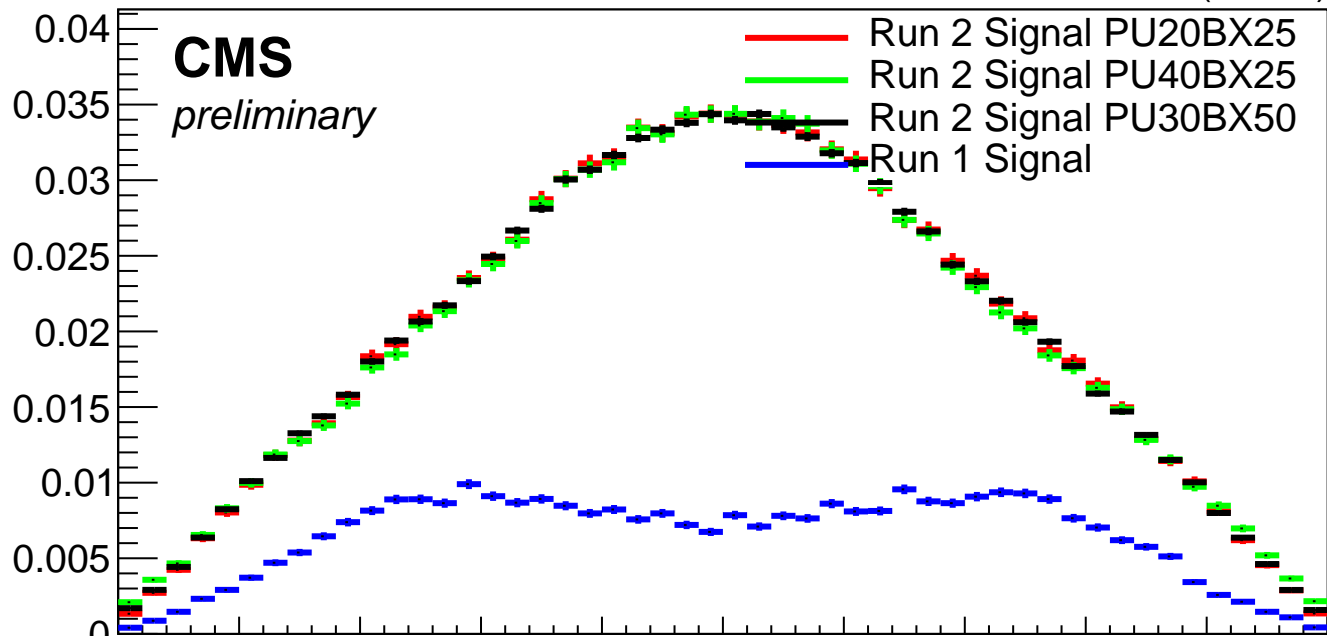
- Run 2 Signal PU20BX25
- Run 2 Signal PU40BX25
- Run 2 Signal PU30BX50
- Run 1 Signal



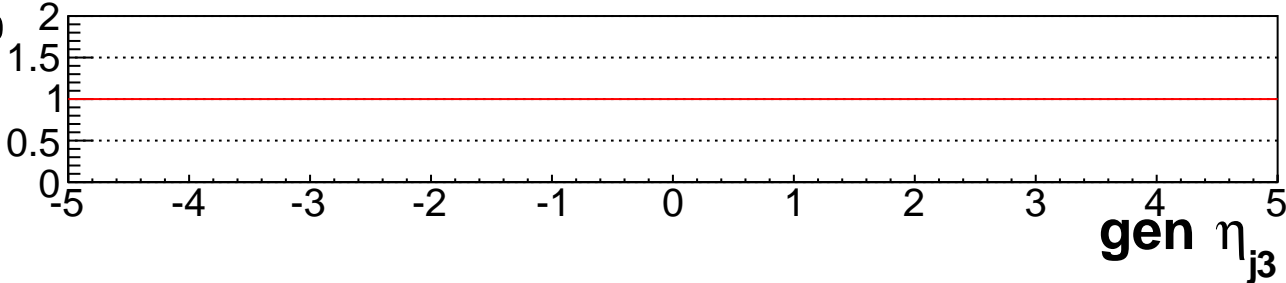
19.2 fb⁻¹ (8 TeV)

CMS

preliminary



Data/Bkg



19.2 fb⁻¹ (8 TeV)

CMS

preliminary

Run 2 Signal PU20BX25
Run 2 Signal PU40BX25
Run 2 Signal PU30BX50
Run 1 Signal

Data/Bkg

gen ϕ_{j3}

