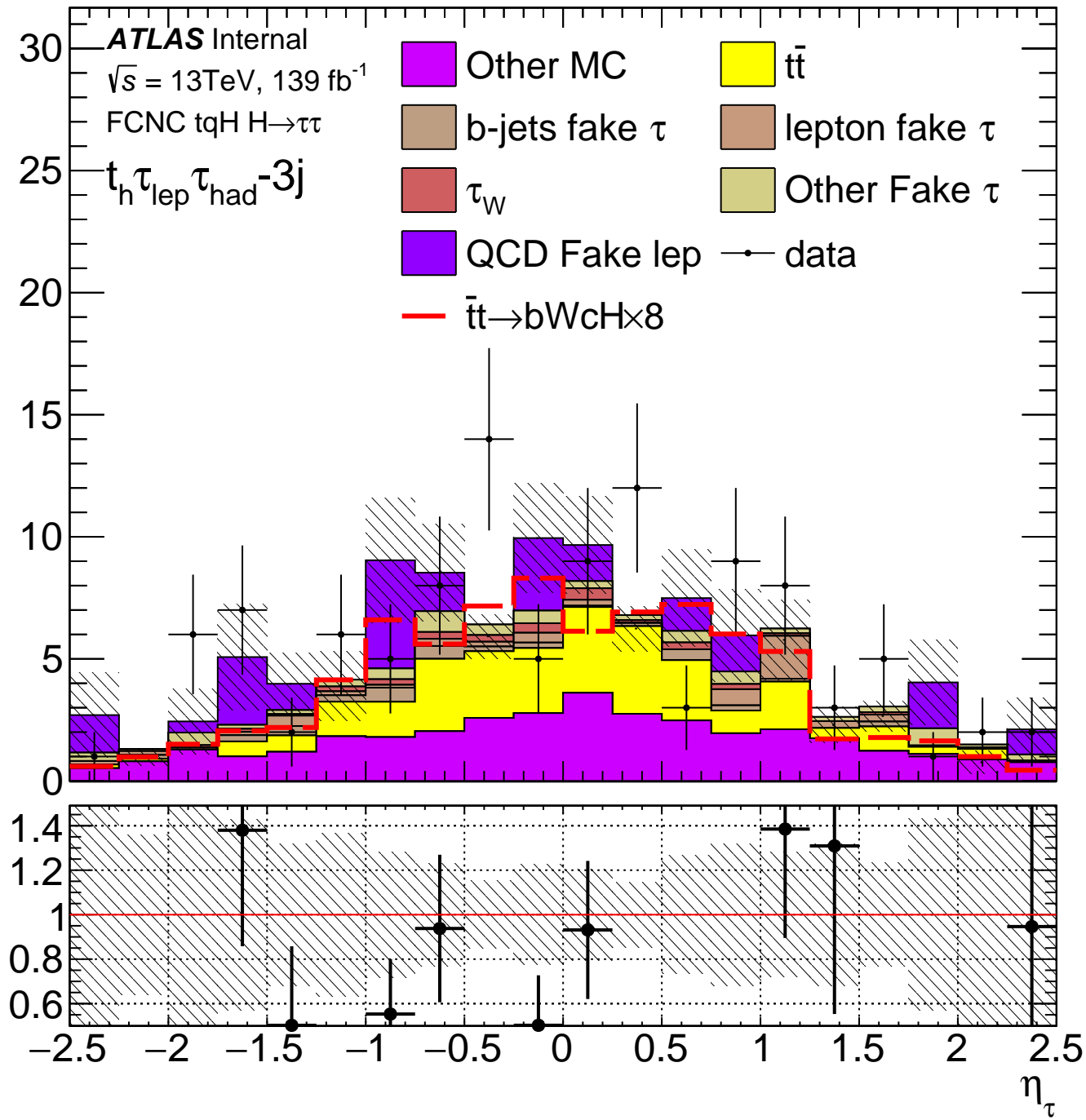
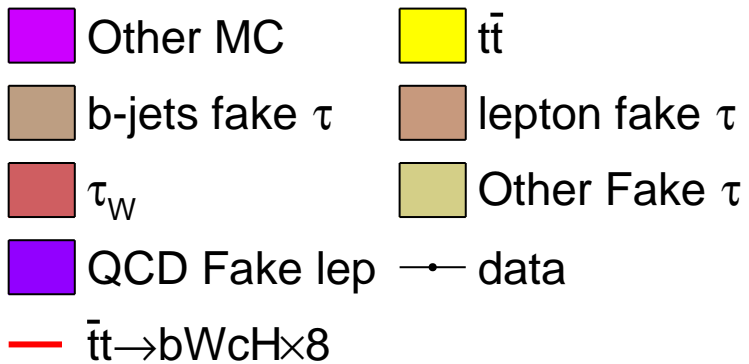


Events / 0.25

Data/Bkg

ATLAS Internal
 $\sqrt{s} = 13\text{TeV}, 139\text{ fb}^{-1}$
FCNC $t\bar{q}H \rightarrow \tau\tau$
 $t_h \tau_{\text{lep}} \tau_{\text{had}} - 3j$

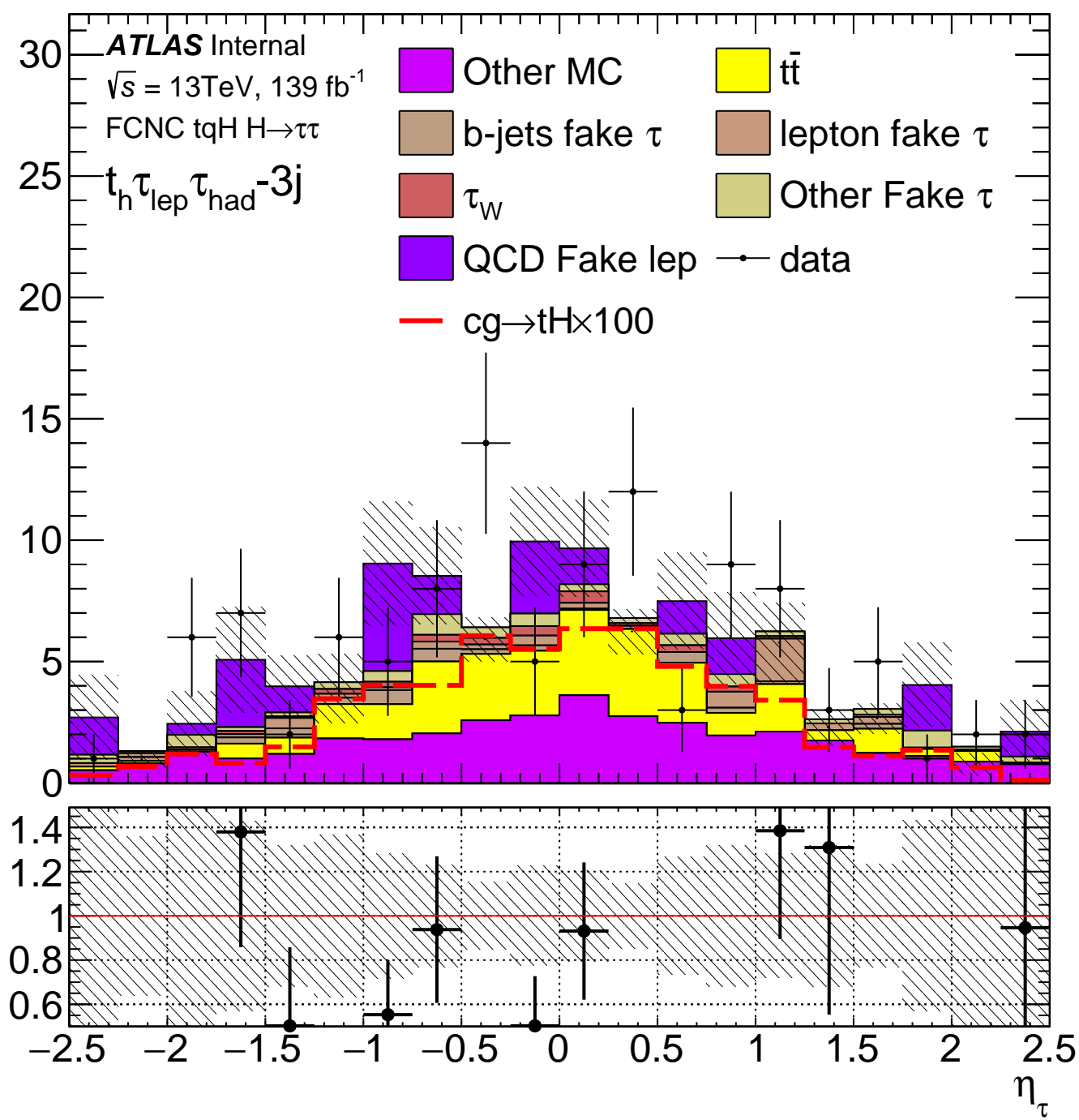


Events / 0.25

Data/Bkg

ATLAS Internal
 $\sqrt{s} = 13\text{TeV}, 139\text{ fb}^{-1}$
FCNC $t\bar{q}H \rightarrow \tau\tau$
 $t_h \tau_{\text{lep}} \tau_{\text{had}} - 3j$

- Other MC
- b-jets fake τ
- τ_W
- QCD Fake lep
- $cg \rightarrow t\bar{t}H \times 100$
- $t\bar{t}$
- lepton fake τ
- Other Fake τ
- data



Events / 0.25

Data/Bkg

ATLAS Internal
 $\sqrt{s} = 13\text{TeV}, 139\text{ fb}^{-1}$
FCNC $tqH \rightarrow \tau\tau$
 $t_h \tau_{\text{lep}} \tau_{\text{had}} - 3j$

Other MC

b-jets fake τ

τ_W

QCD Fake lep

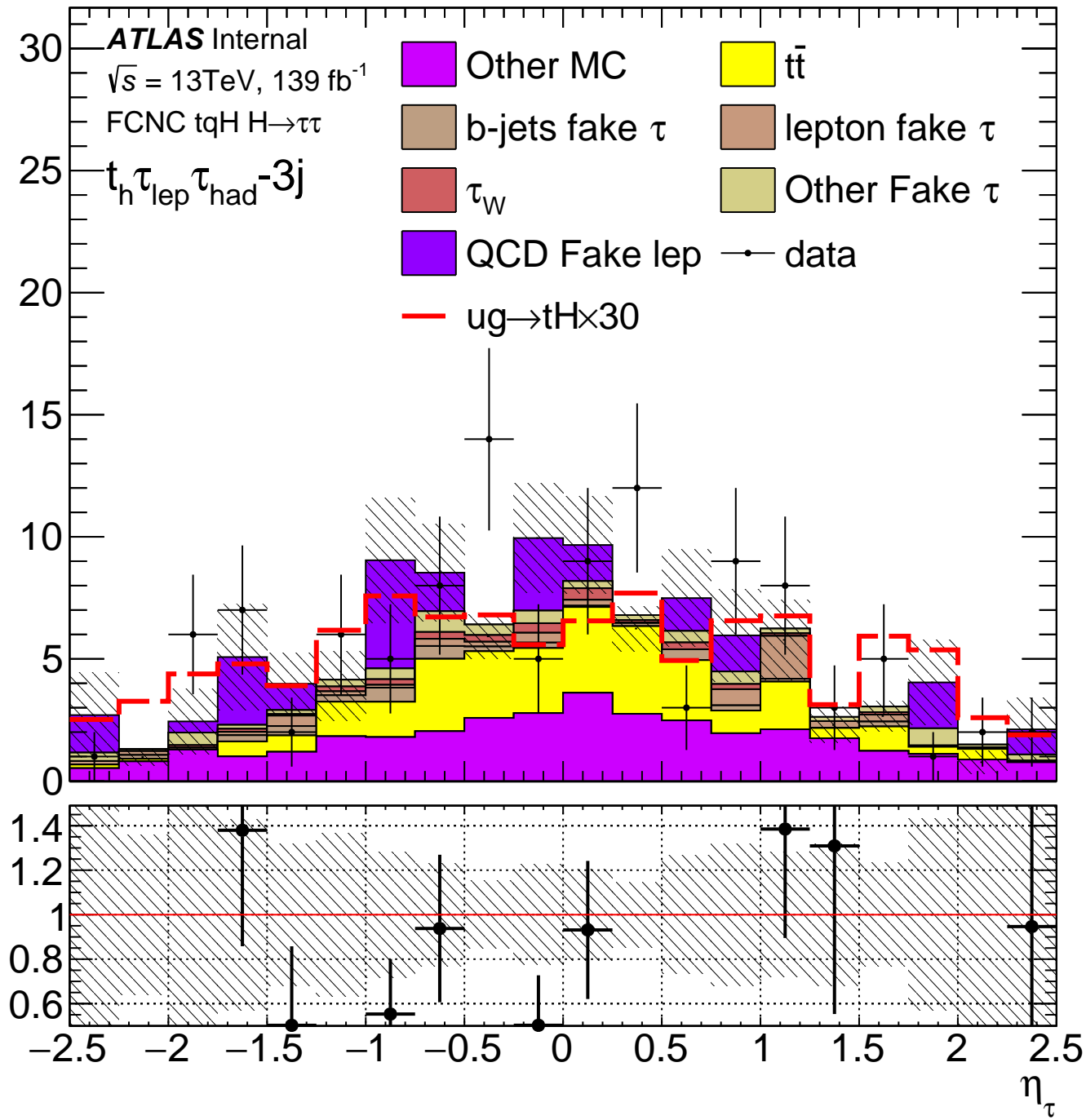
$ug \rightarrow tH \times 30$

$t\bar{t}$

lepton fake τ

Other Fake τ

data

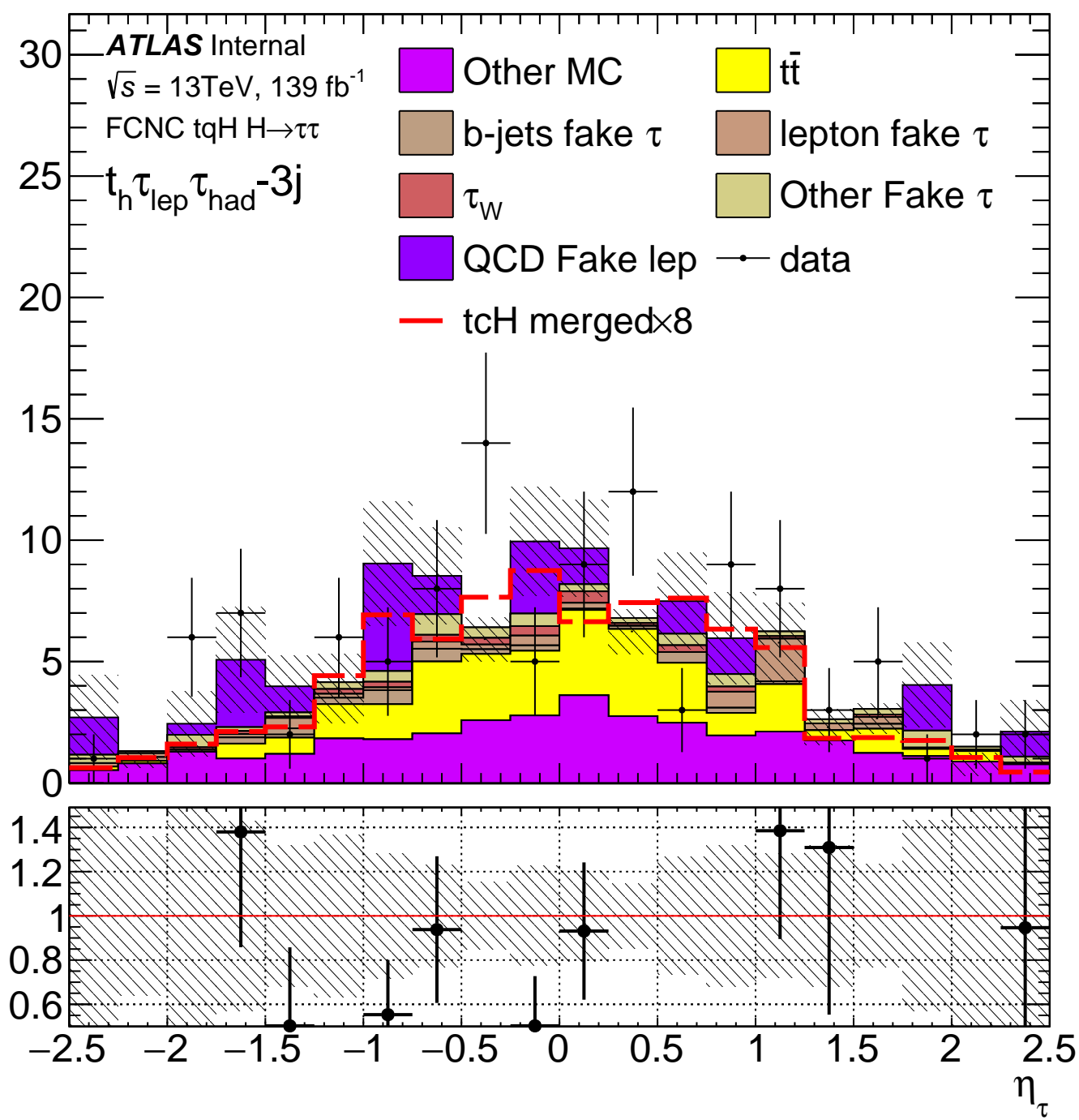


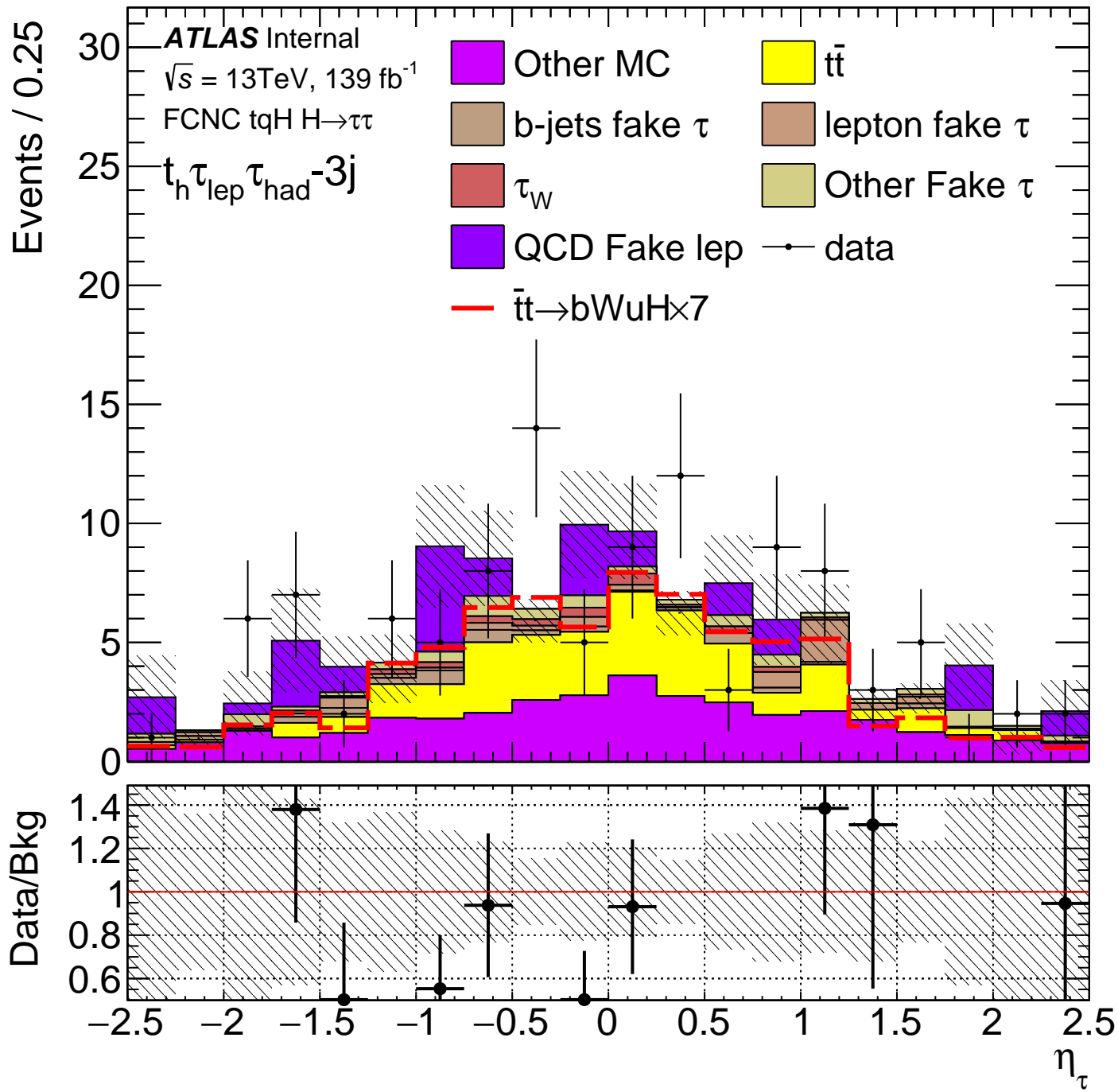
Events / 0.25

Data/Bkg

ATLAS Internal
 $\sqrt{s} = 13\text{TeV}, 139\text{ fb}^{-1}$
FCNC tqH $H \rightarrow \tau\tau$
 $t_h \tau_{\text{lep}} \tau_{\text{had}} - 3j$

- Other MC
- b-jets fake τ
- τ_W
- QCD Fake lep
- tcH merged $\times 8$
- $t\bar{t}$
- lepton fake τ
- Other Fake τ
- data





Events / 0.25

Data/Bkg

ATLAS Internal $\sqrt{s} = 13\text{TeV}, 139\text{ fb}^{-1}$ FCNC tqH $H \rightarrow \tau\tau$ $t_h \tau_{\text{lep}} \tau_{\text{had}} - 3j$

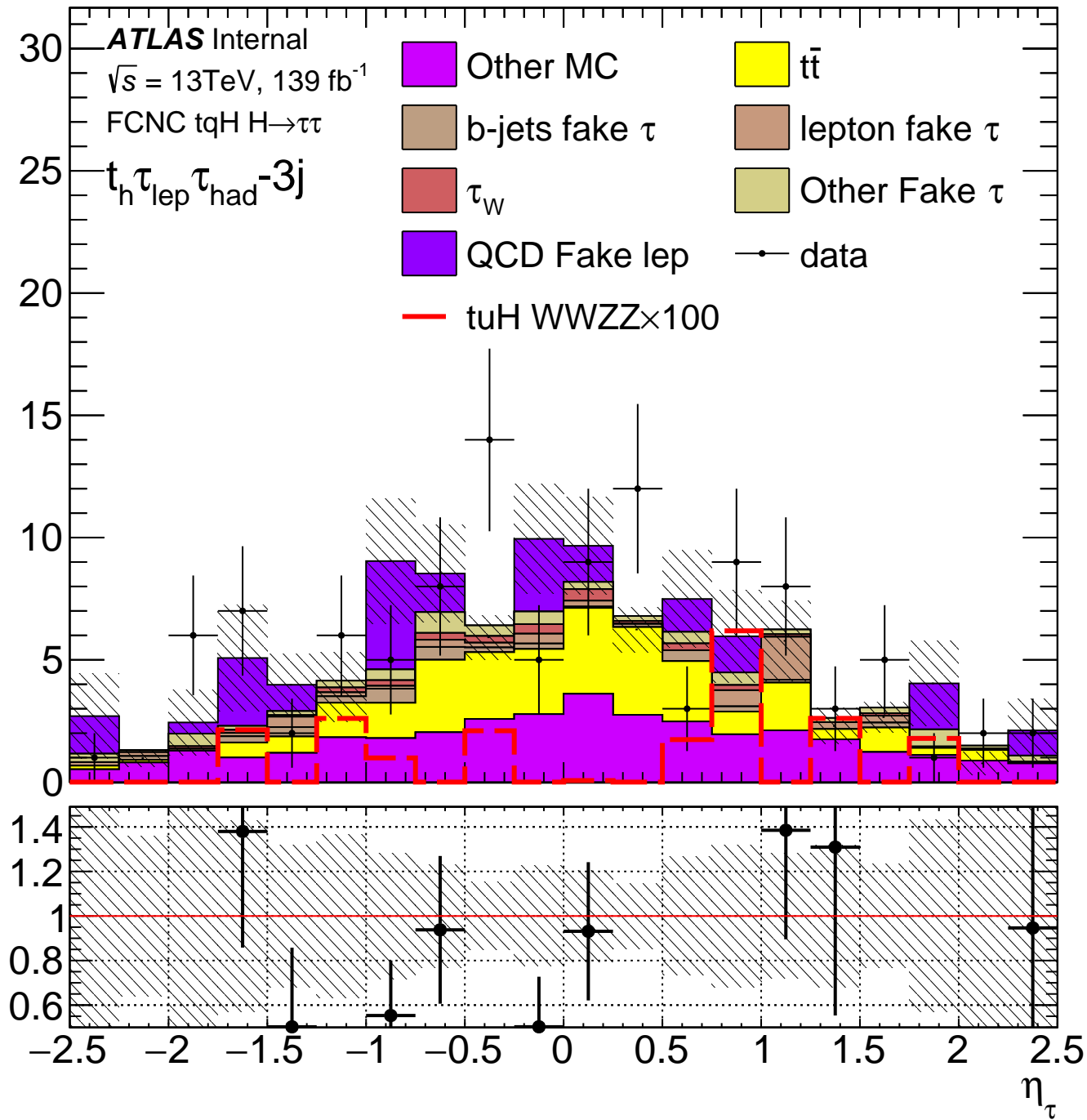
Other MC

b-jets fake τ τ_W

QCD Fake lep

— t_uH WWZZ $\times 100$ $t\bar{t}$ lepton fake τ Other Fake τ

—•— data



Events / 0.25

Data/Bkg

ATLAS Internal
 $\sqrt{s} = 13\text{TeV}, 139\text{ fb}^{-1}$
FCNC tqH $H \rightarrow \tau\tau$
 $t_h \tau_{\text{lep}} \tau_{\text{had}} - 3j$

Other MC

b-jets fake τ

τ_W

QCD Fake lep

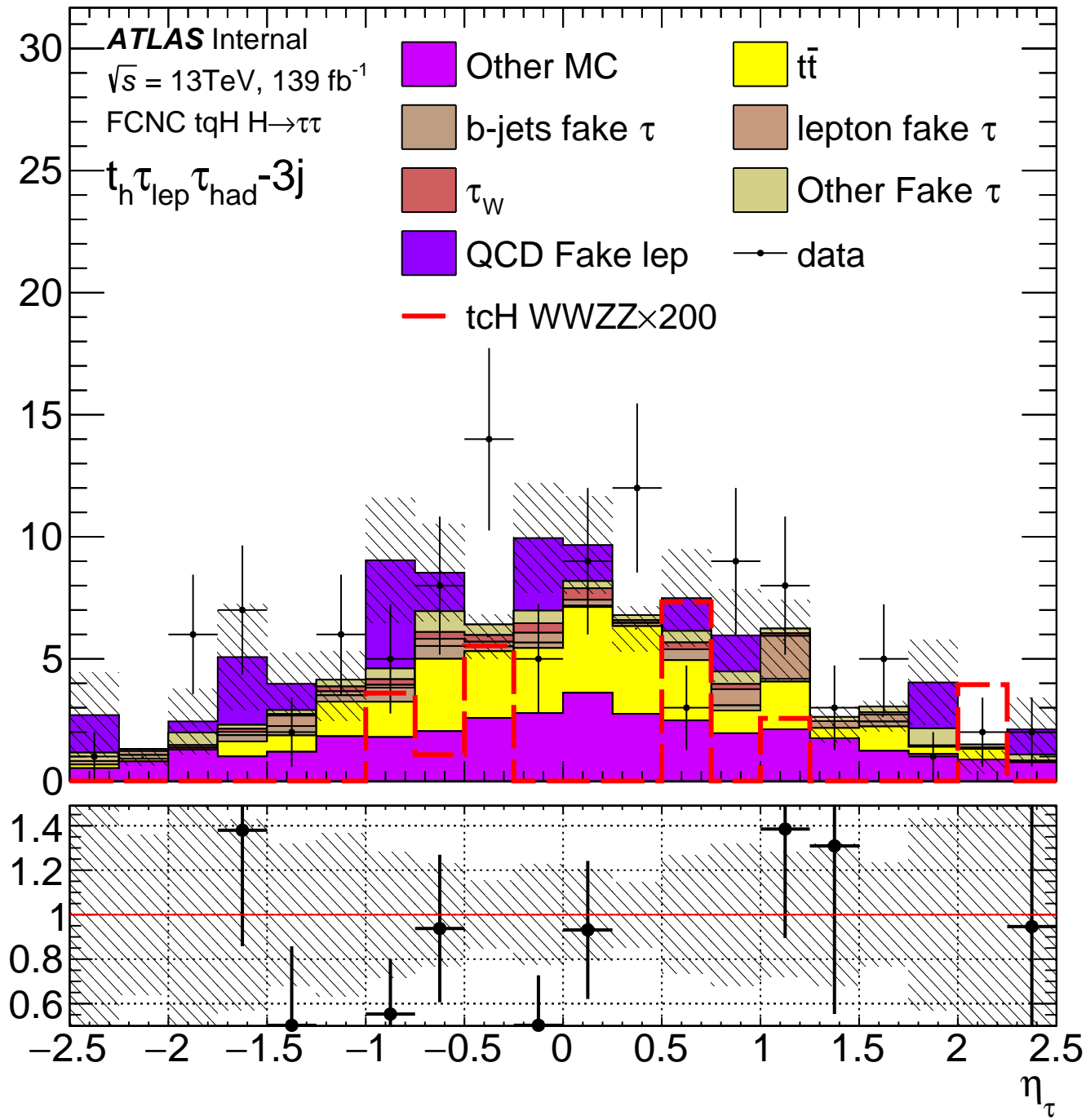
tcH WWZZ $\times 200$

$t\bar{t}$

lepton fake τ

Other Fake τ

data



Events / 0.25

Data/Bkg

ATLAS Internal
 $\sqrt{s} = 13\text{TeV}, 139\text{ fb}^{-1}$
FCNC $t\bar{q}H \rightarrow \tau\tau$
 $t_h \tau_{\text{lep}} \tau_{\text{had}} - 3j$

Other MC

b-jets fake τ

τ_W

QCD Fake lep

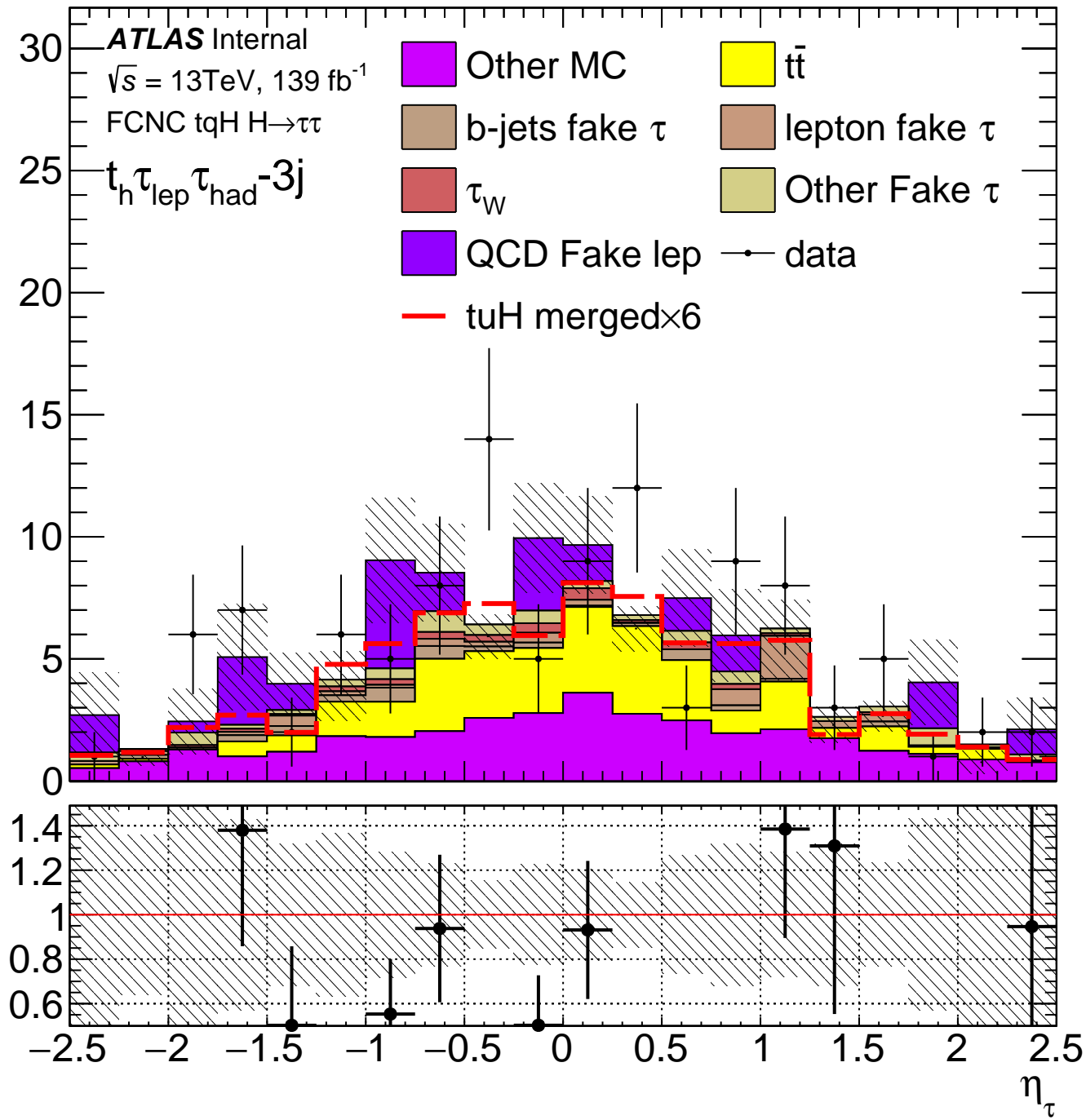
$t\bar{u}H$ merged $\times 6$

$t\bar{t}$

lepton fake τ

Other Fake τ















data



Events / 0.25

Data/Bkg

ATLAS Internal
 $\sqrt{s} = 13\text{TeV}, 139\text{fb}^{-1}$
FCNC $tqH \rightarrow H \rightarrow \tau\tau$
 $t_h \tau_{\text{lep}} \tau_{\text{had}} - 3j$

 Other MC	 $t\bar{t}$
 b-jets fake τ	 lepton fake τ
 τ_W	 Other Fake τ
 QCD Fake lep	 data
 $t\bar{t} \rightarrow bWcH \times 8$	 $cg \rightarrow tH \times 100$
 $ug \rightarrow tH \times 30$	 $t\bar{t} \rightarrow bWuH \times 7$
 $tuH \text{ WWZZ} \times 100$	 $tcH \text{ WWZZ} \times 200$

25

20

15

10

5

0

-2.5 -2 -1.5 -1 -0.5 0 0.5 1 1.5 2 2.5

η_τ