

Events / 0.25

**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  $\tau$

$\tau_W$

QCD Fake lep

$cg \rightarrow tH \times 100$

$t\bar{t}$

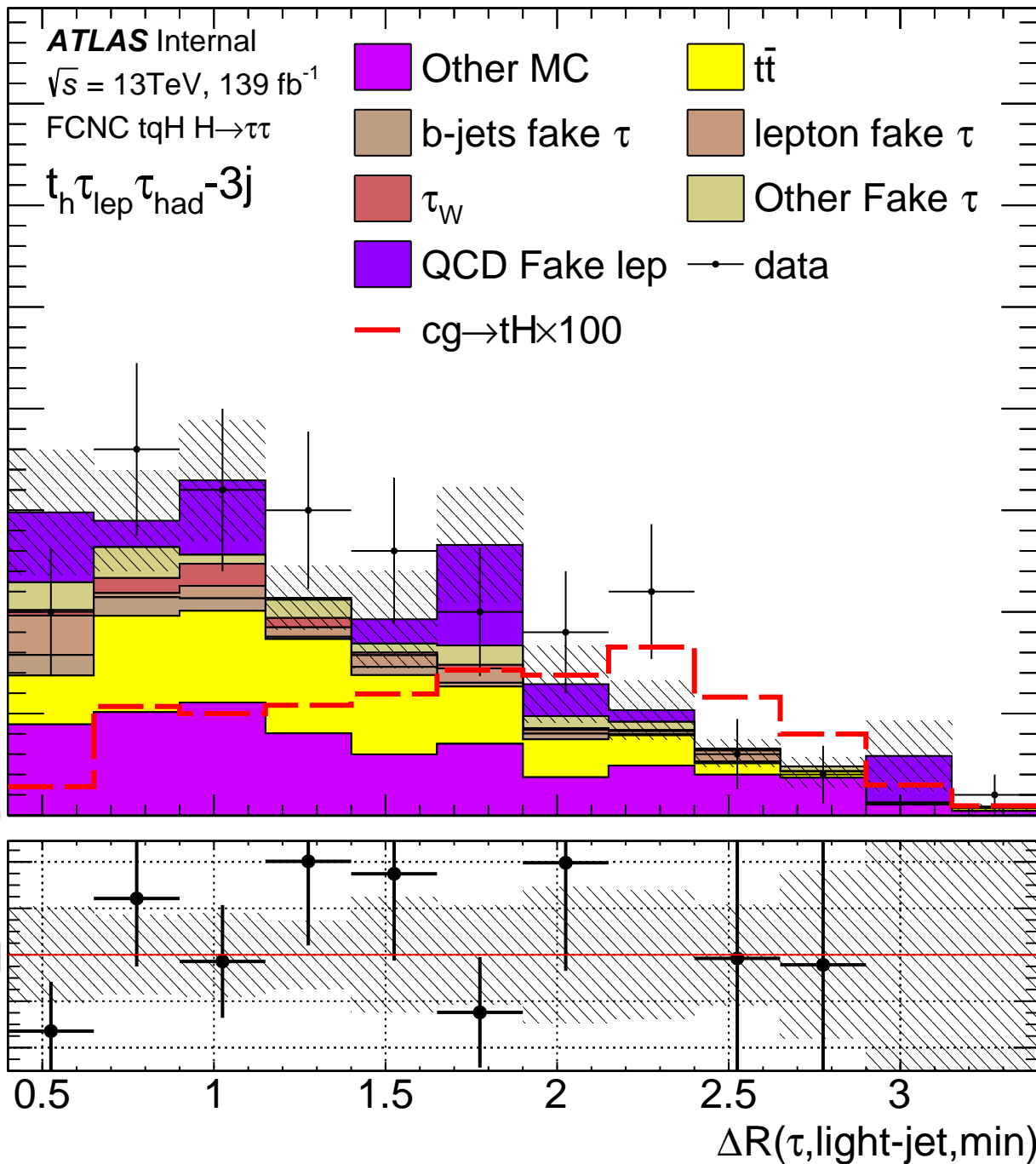
lepton fake  $\tau$

Other Fake  $\tau$

data

Data/Bkg

$\Delta R(\tau, \text{light-jet}, \text{min})$



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Other MC

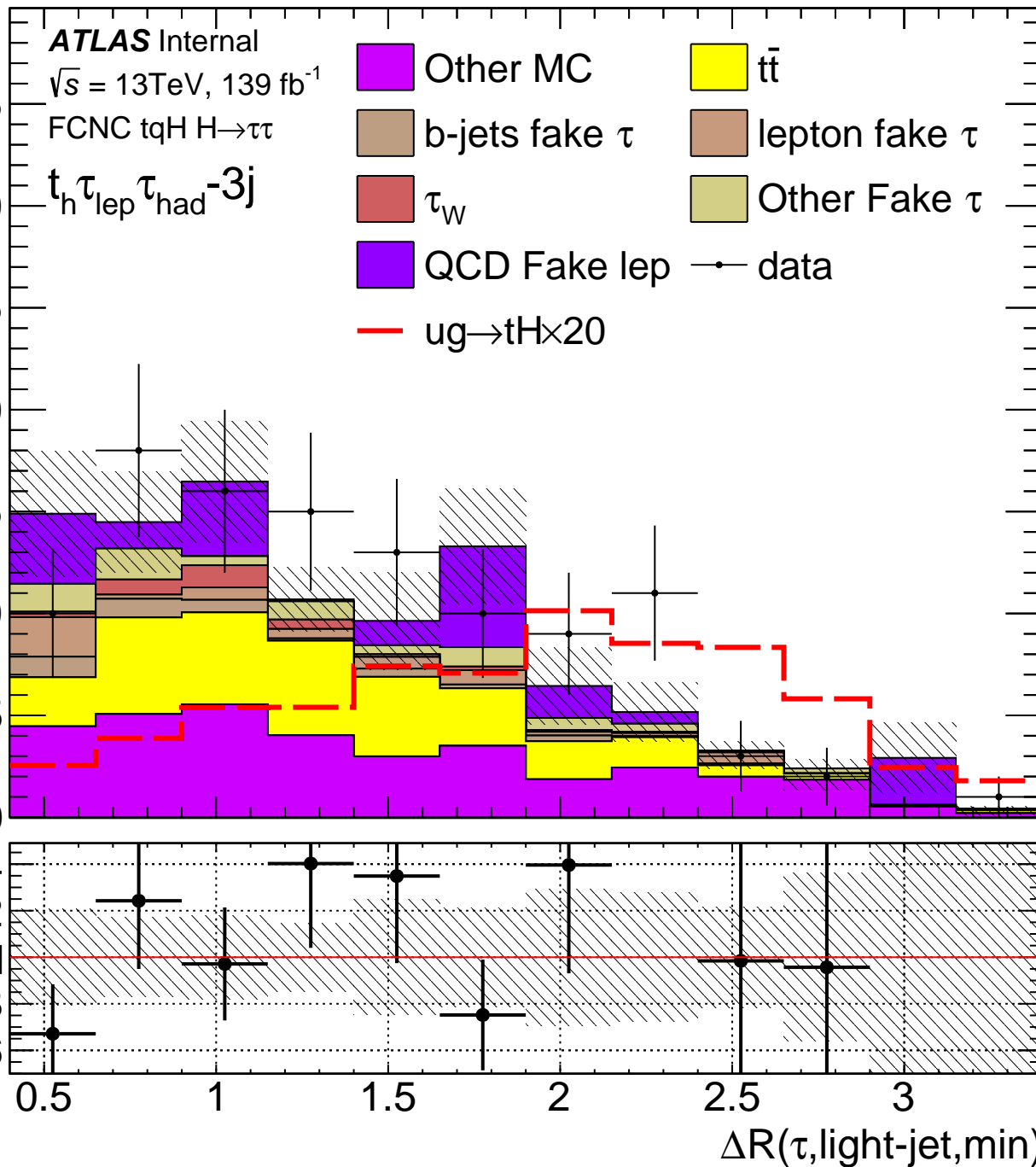
b-jets fake  $\tau$  $\tau_W$ 

QCD Fake lep

—  $u\bar{g} \rightarrow t\bar{t}H \times 20$  $t\bar{t}$ lepton fake  $\tau$ Other Fake  $\tau$ 

—•— data

Data/Bkg

 $\Delta R(\tau, \text{light-jet}, \text{min})$ 

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Other MC

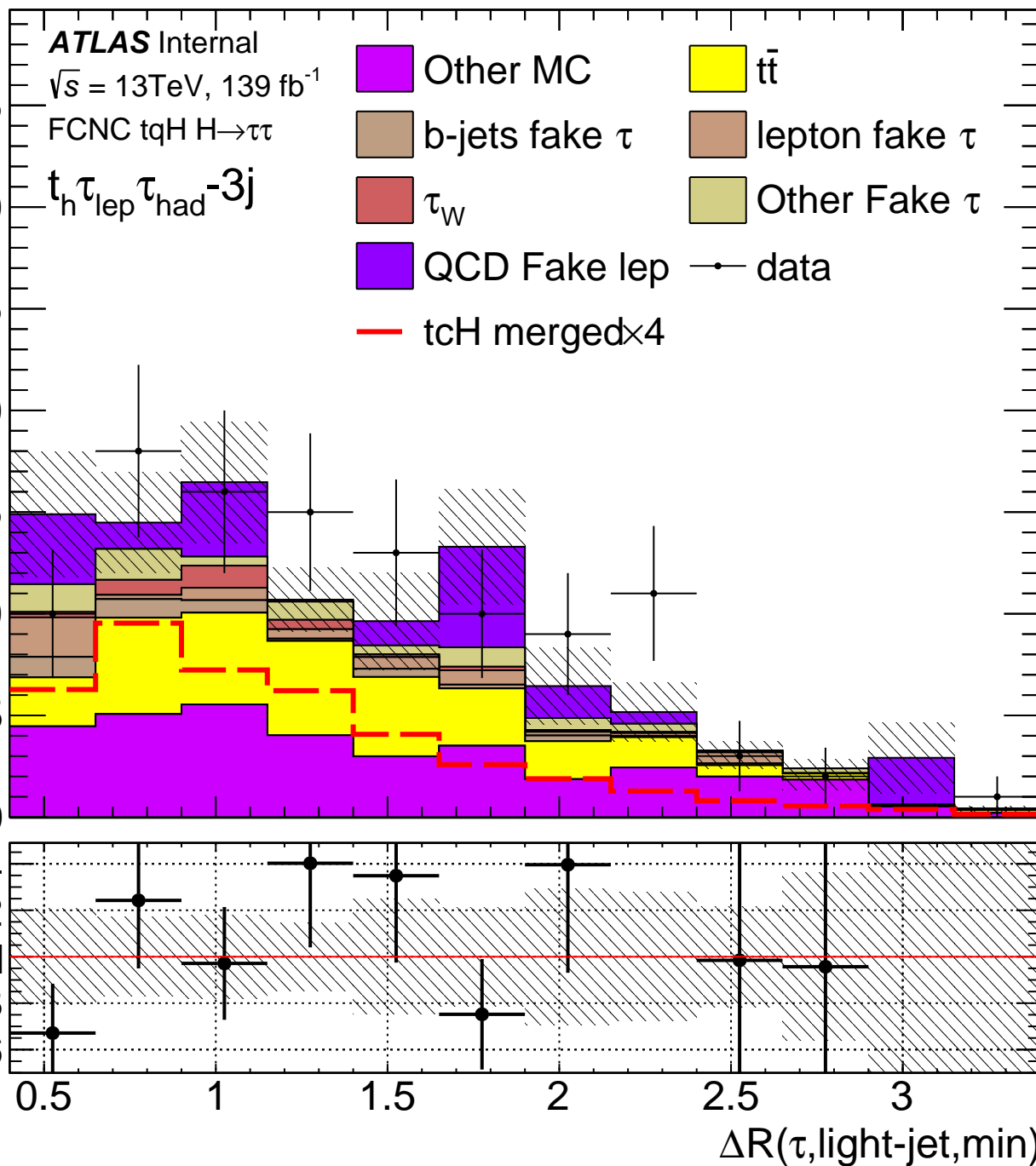
b-jets fake  $\tau$  $\tau_W$ 

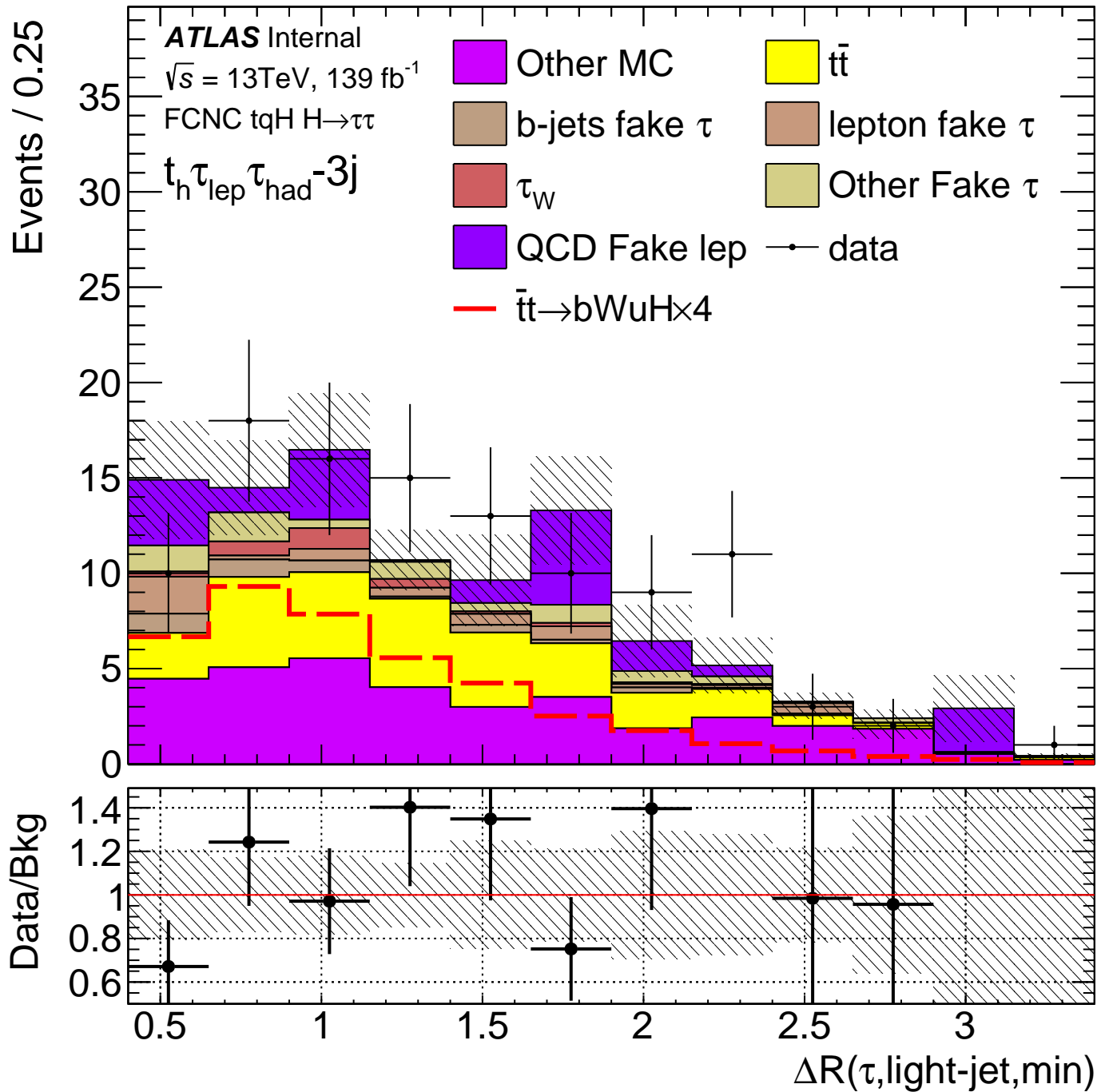
QCD Fake lep

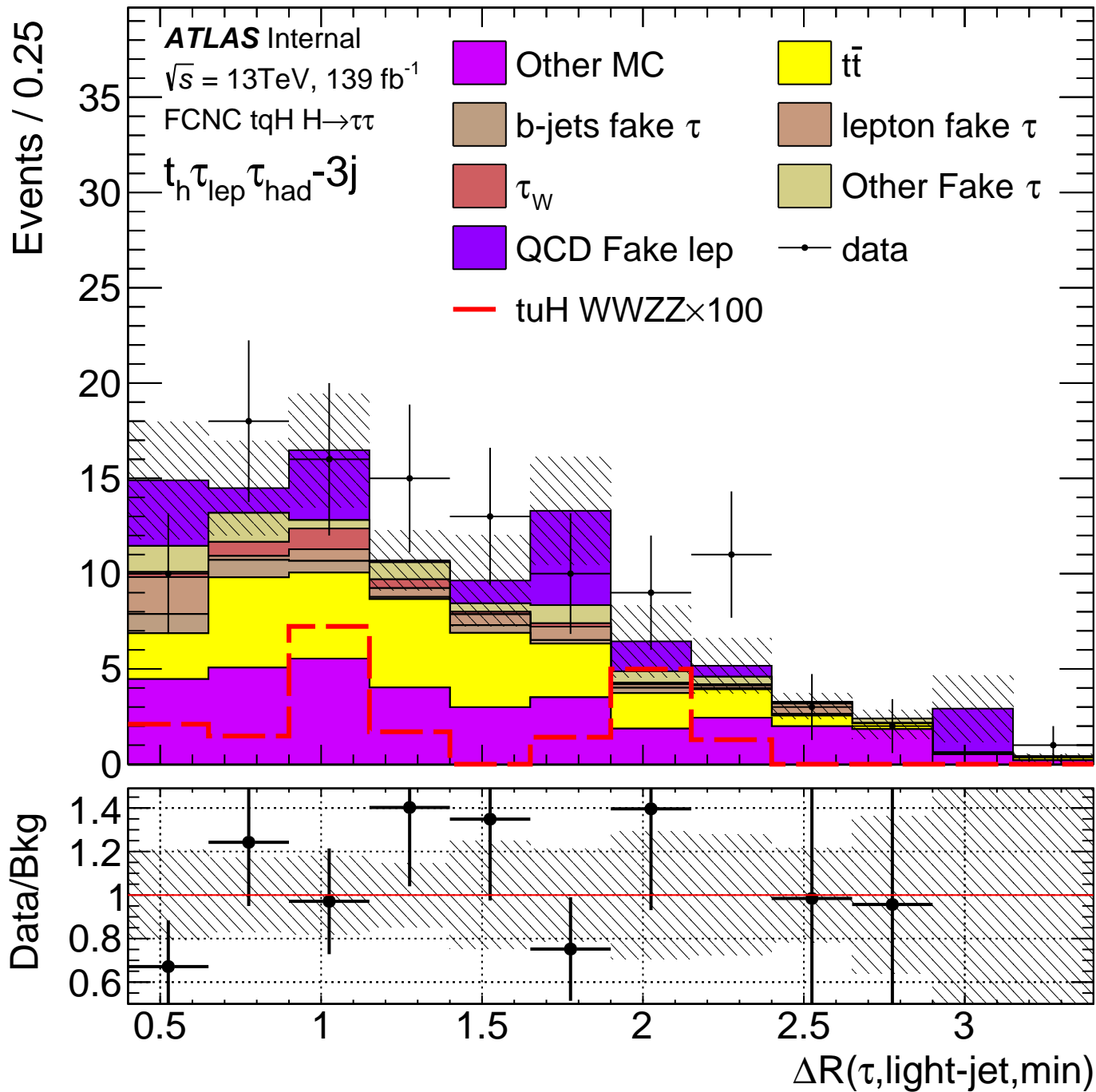
tcH merged $\times 4$  $t\bar{t}$ lepton fake  $\tau$ Other Fake  $\tau$ 

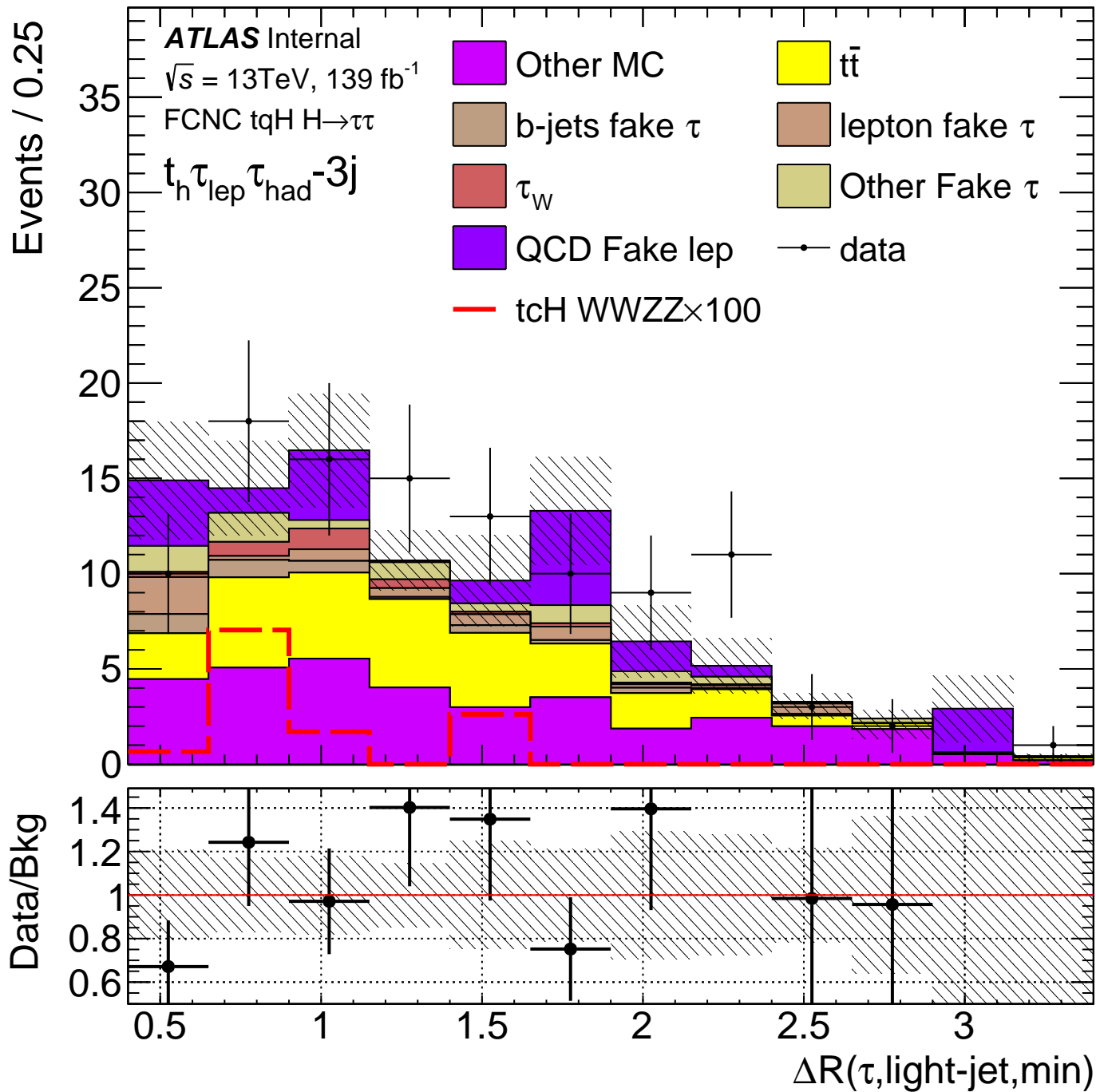
data

Data/Bkg

 $\Delta R(\tau, \text{light-jet}, \text{min})$ 







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**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

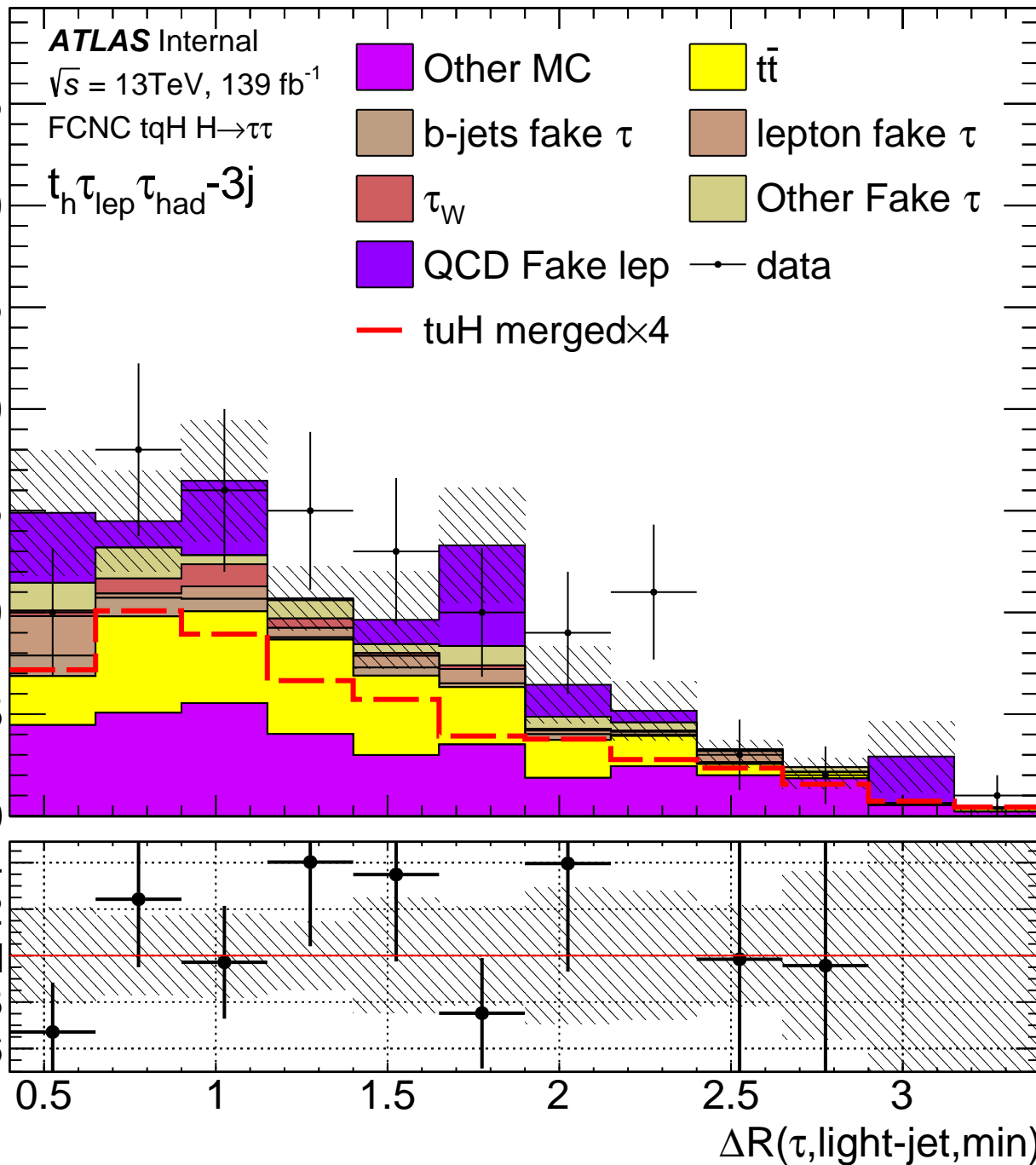
b-jets fake  $\tau$  $\tau_W$ 

QCD Fake lep

tuH merged $\times 4$  $t\bar{t}$ lepton fake  $\tau$ Other Fake  $\tau$ 

data

Data/Bkg

 $\Delta R(\tau, \text{light-jet}, \text{min})$ 



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**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	$t\bar{t}$
b-jets fake $\tau$	lepton fake $\tau$
$\tau_W$	Other Fake $\tau$
QCD Fake lep	data
$t\bar{t} \rightarrow bWcH \times 4$	$cg \rightarrow tH \times 100$
$ug \rightarrow tH \times 20$	$t\bar{t} \rightarrow bWuH \times 4$
$tuH\text{ WWZZ} \times 100$	$tcH\text{ WWZZ} \times 100$

Data/Bkg

