

Events / 0.20

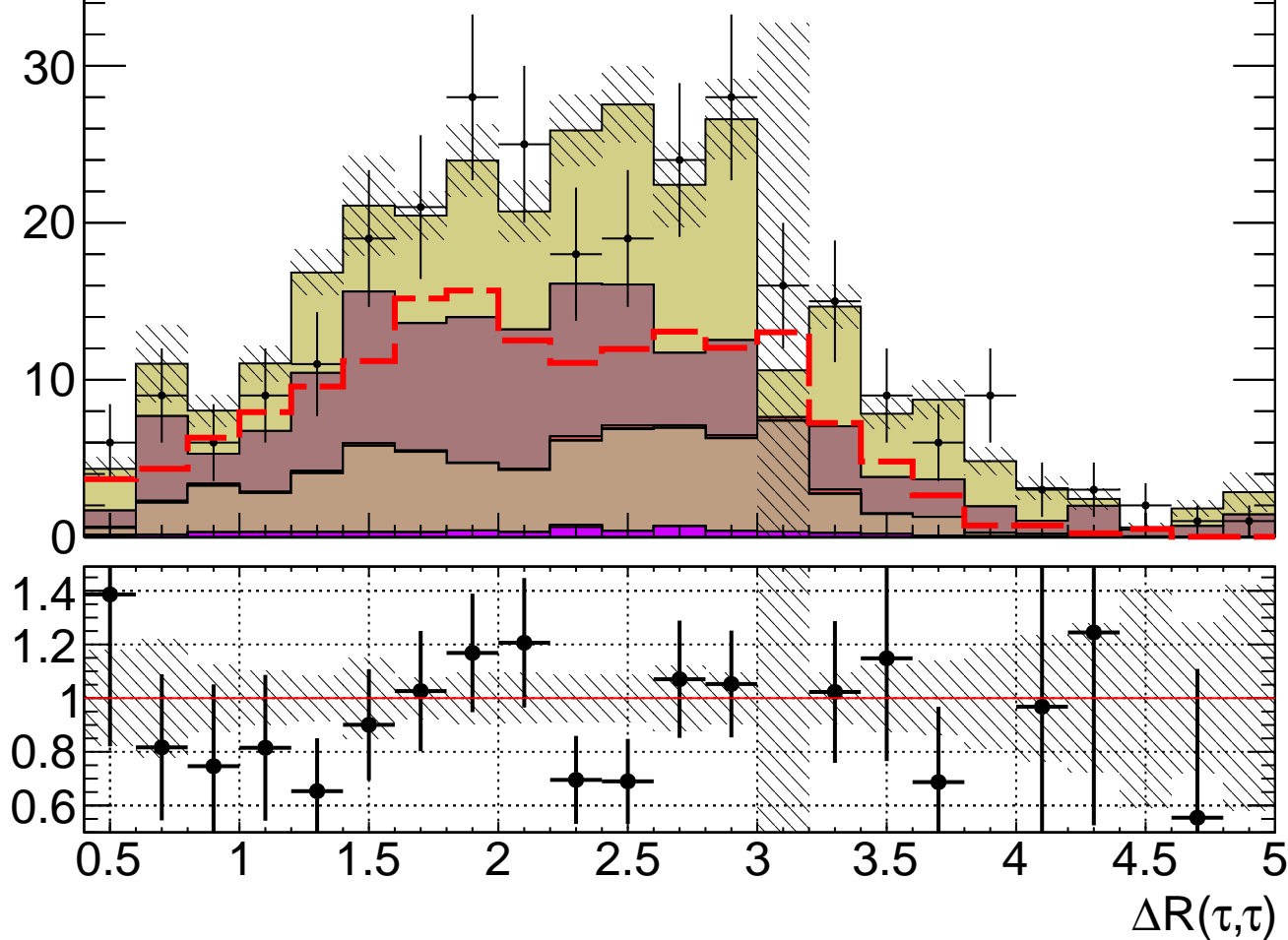
ATLAS Internal $\sqrt{s} = 13\text{TeV}, 139\text{ fb}^{-1}$ FCNC tqH $H \rightarrow \tau\tau$ $t_l \tau_{\text{had}} \tau_{\text{had}}$ SS

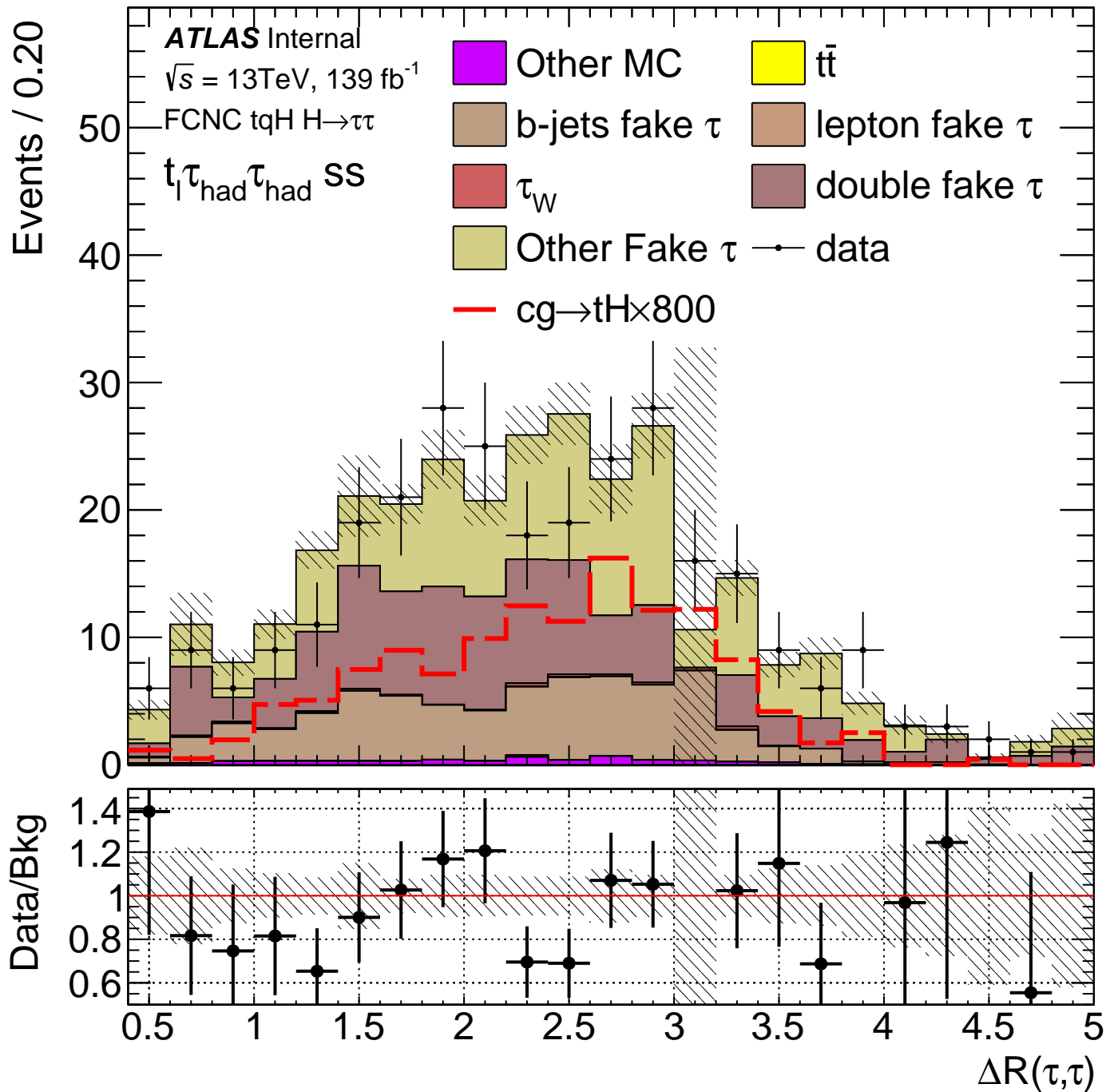
Other MC

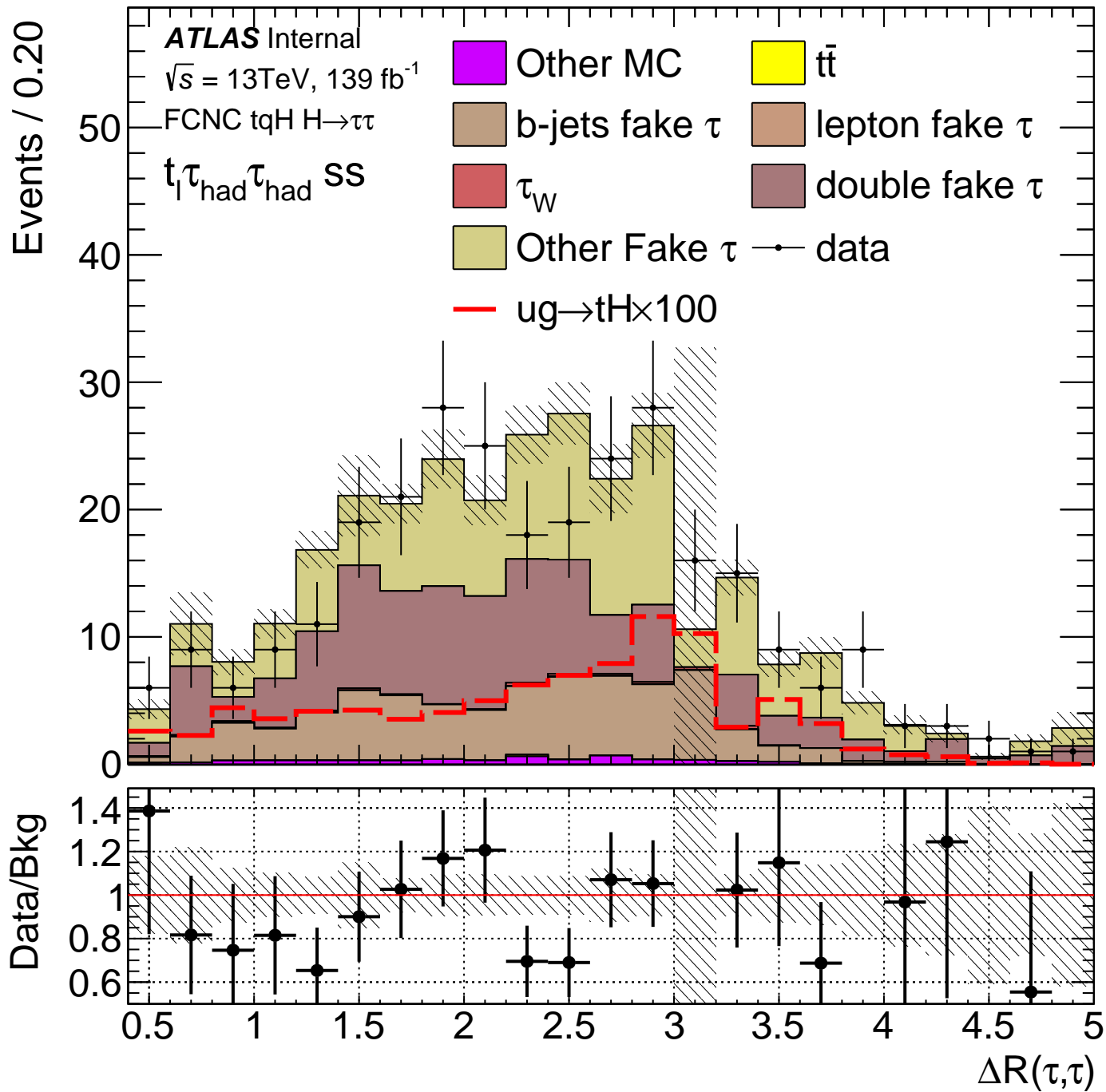
b-jets fake τ τ_W Other Fake τ $\bar{t}t \rightarrow bWcH \times 70$ $t\bar{t}$ lepton fake τ double fake τ

data

Data/Bkg







Events / 0.20

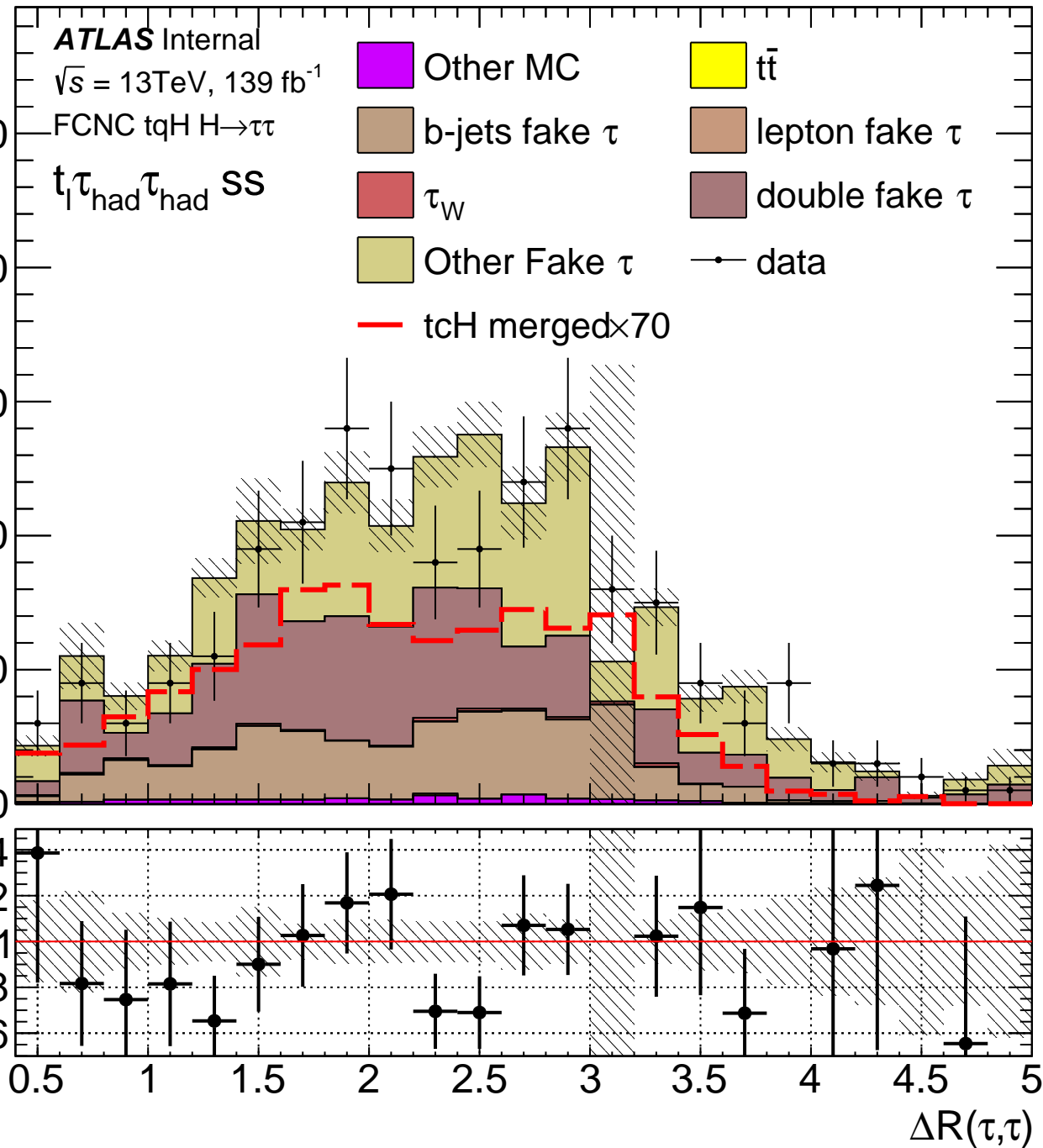
ATLAS Internal $\sqrt{s} = 13\text{TeV}, 139\text{ fb}^{-1}$ FCNC tqH $H \rightarrow \tau\tau$ $t_l \tau_{\text{had}} \tau_{\text{had}}$ SS

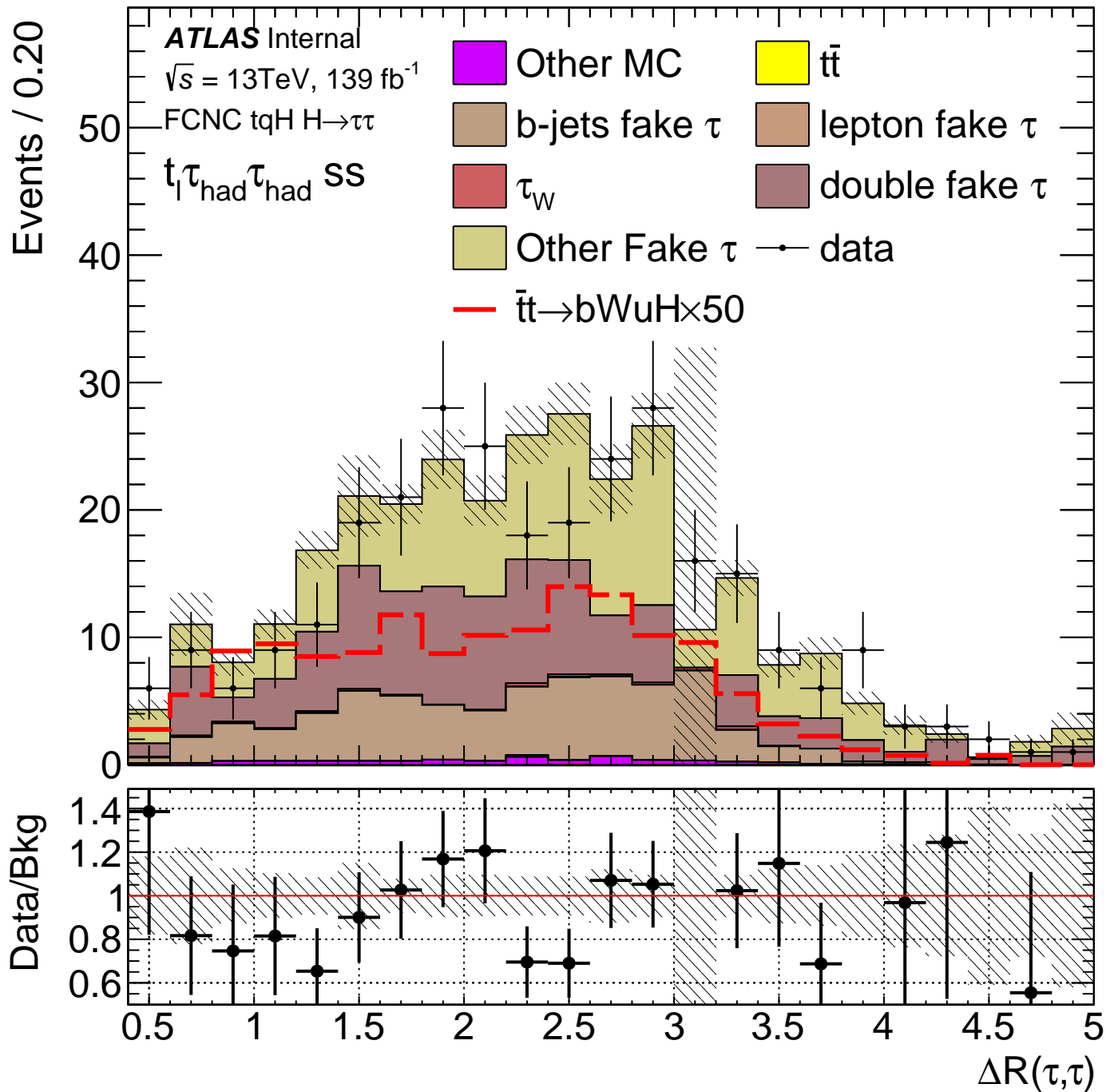
Other MC

b-jets fake τ τ_W Other Fake τ tcH merged $\times 70$ $t\bar{t}$ lepton fake τ double fake τ

—•— data

Data/Bkg





Events / 0.20

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

Other MC

b-jets fake τ τ_W Other Fake τ — $tuH\text{ WWZZ} \times 90$ $t\bar{t}$ lepton fake τ double fake τ

—•— data

50

40

30

20

10

0

Data/Bkg

1.4

1.2

1.0

0.8

0.6

 $\Delta R(\tau, \tau)$

0.5

1

1.5

2

2.5

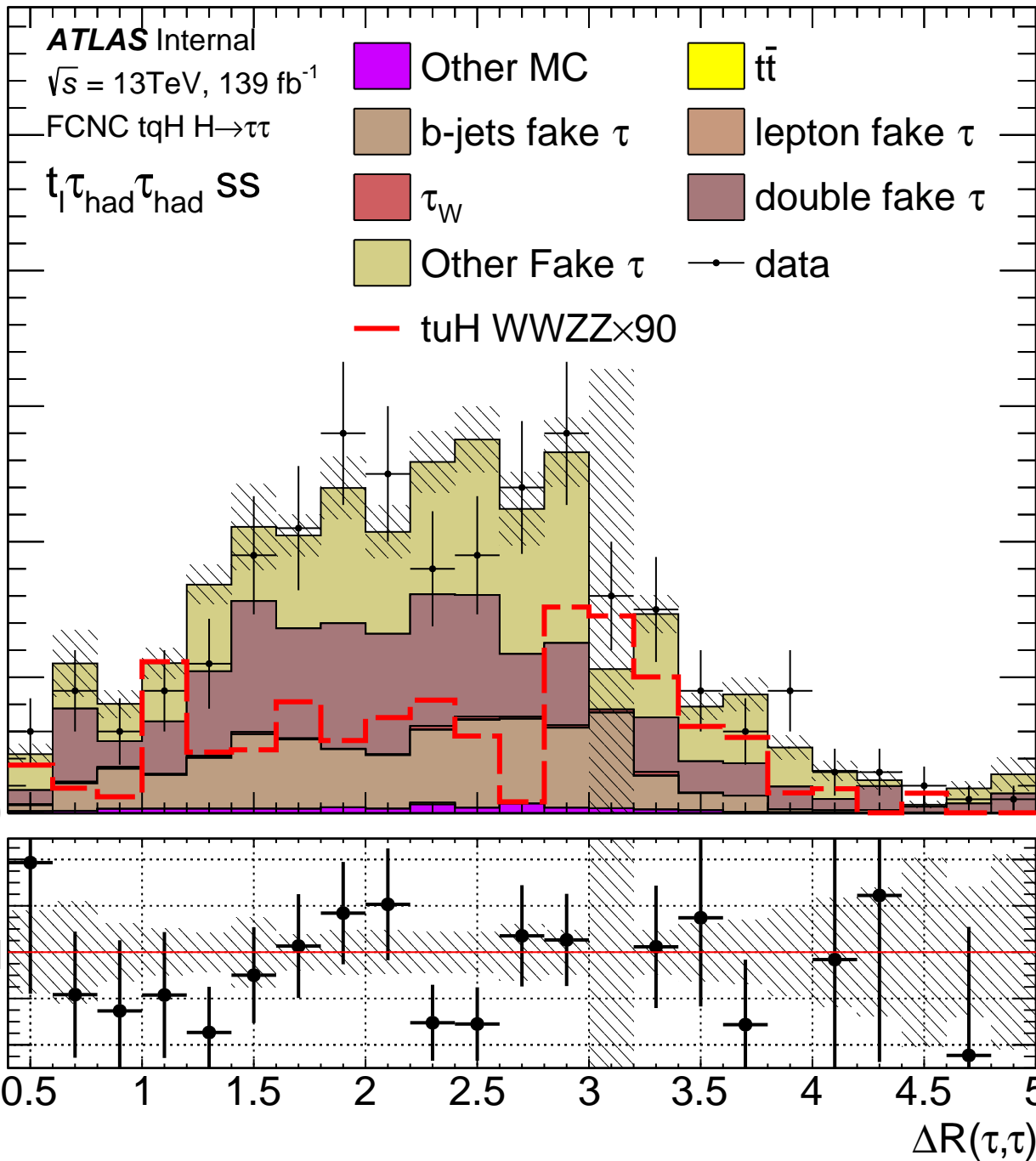
3

3.5

4

4.5

5



Events / 0.20

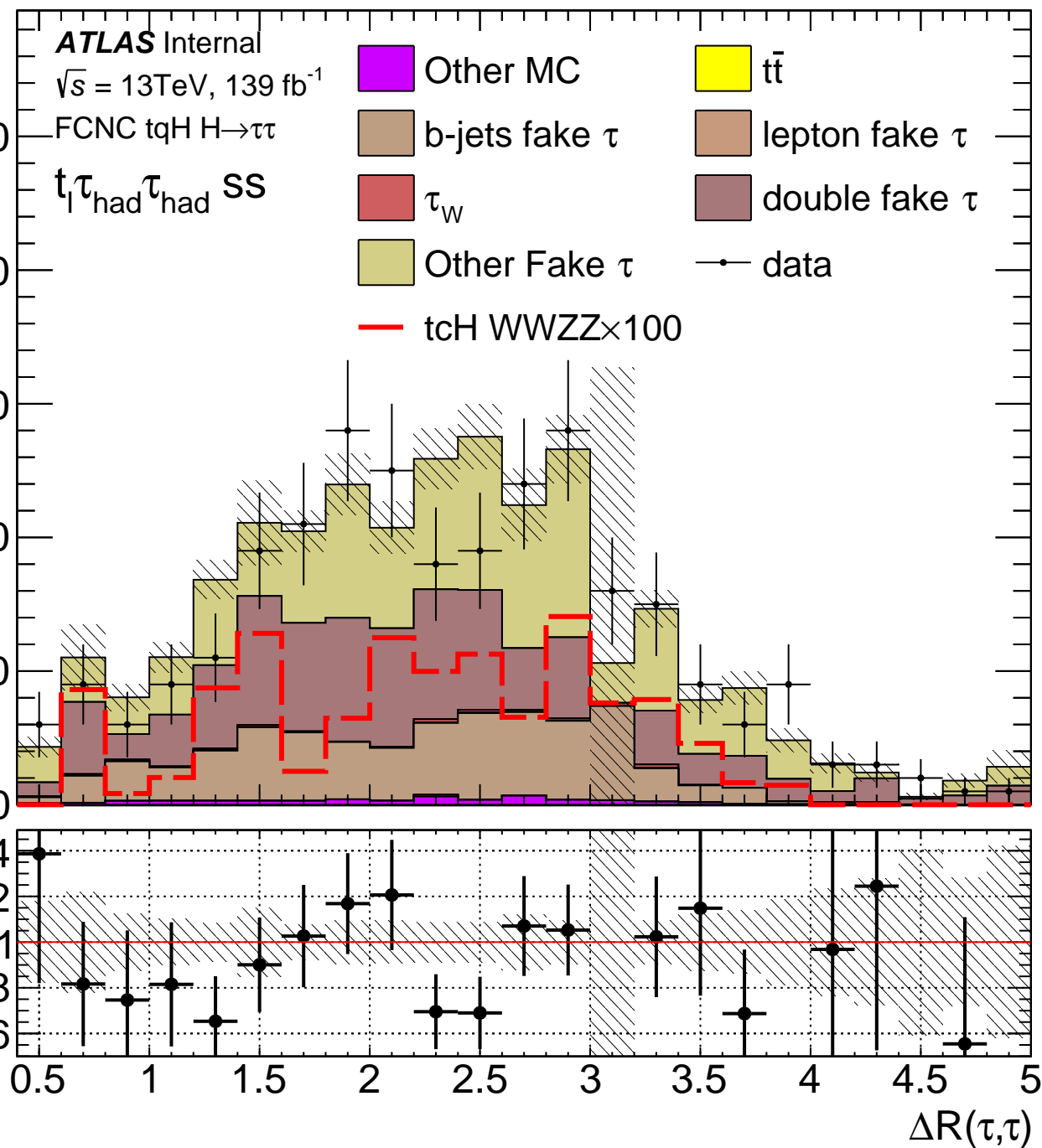
ATLAS Internal $\sqrt{s} = 13\text{TeV}, 139\text{ fb}^{-1}$ FCNC tqH $H \rightarrow \tau\tau$ $t_l \tau_{\text{had}} \tau_{\text{had}}$ SS

Other MC

b-jets fake τ τ_W Other Fake τ tcH WWZZ $\times 100$ $t\bar{t}$ lepton fake τ double fake τ

data

Data/Bkg



Events / 0.20

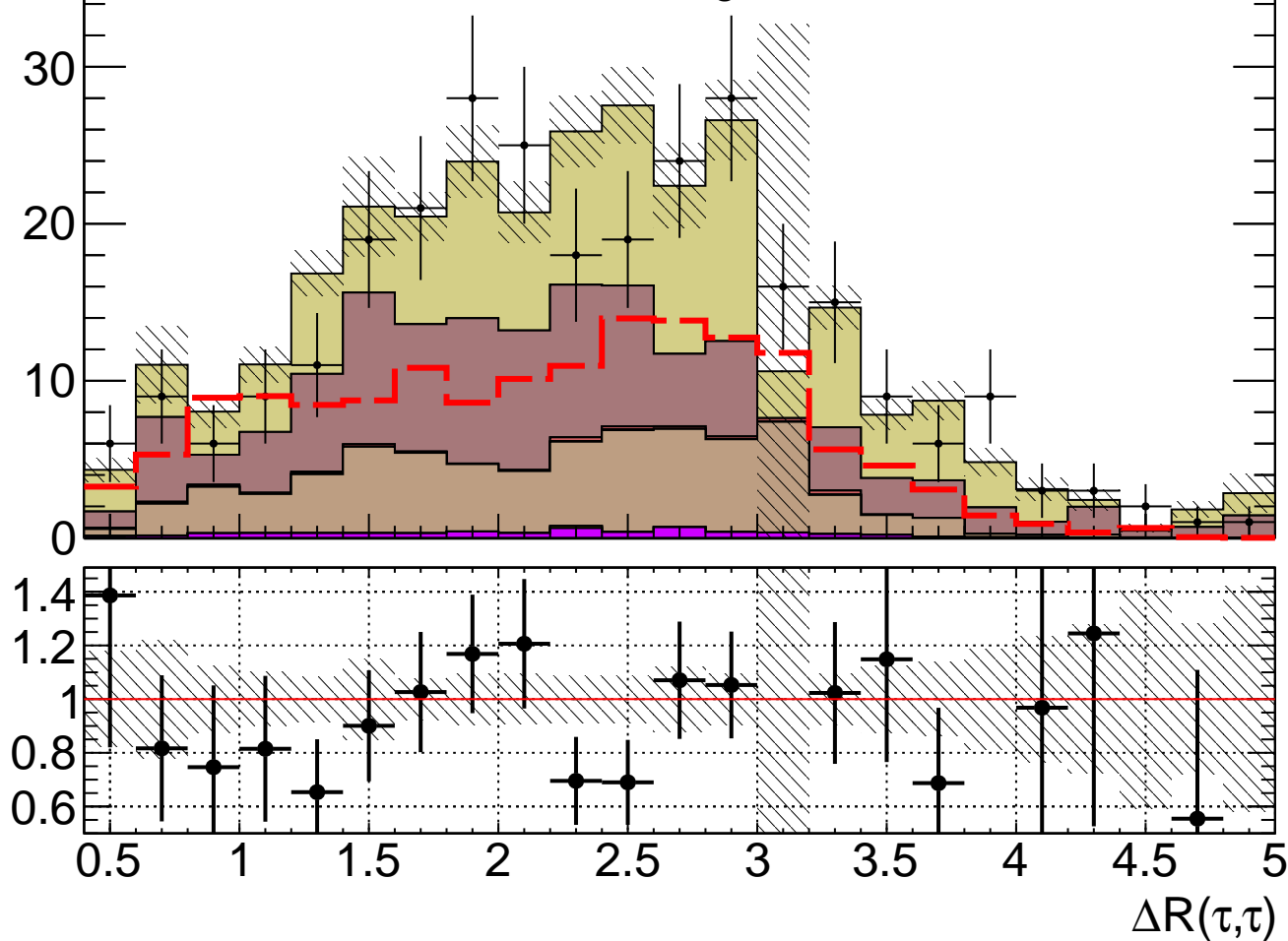
ATLAS Internal $\sqrt{s} = 13\text{TeV}, 139\text{ fb}^{-1}$ FCNC tqH $H \rightarrow \tau\tau$ $t_l \tau_{\text{had}} \tau_{\text{had}}$ SS

Other MC

b-jets fake τ τ_W Other Fake τ — tuH merged $\times 40$ $t\bar{t}$ lepton fake τ double fake τ

—•— data

Data/Bkg



Events / 0.20

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

$t_l \tau_{\text{had}} \tau_{\text{had}}$ SS

- | | |
|---------------------------------------|---------------------------------------|
| Other MC | $t\bar{t}$ |
| b-jets fake τ | lepton fake τ |
| τ_W | double fake τ |
| Other Fake τ | data |
| $t\bar{t} \rightarrow bWcH \times 70$ | $c\bar{g} \rightarrow tH \times 800$ |
| $u\bar{g} \rightarrow tH \times 100$ | $t\bar{t} \rightarrow bWuH \times 50$ |

Data/Bkg

