

Events / 10.00 GeV

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

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

Other MC

b-jets fake τ

τ_W

Other Fake τ

$t\bar{t} \rightarrow bWcH \times 50$

$t\bar{t}$

lepton fake τ

double fake τ

data

25

20

15

10

5

0

Data/Bkg

1.4

1.2

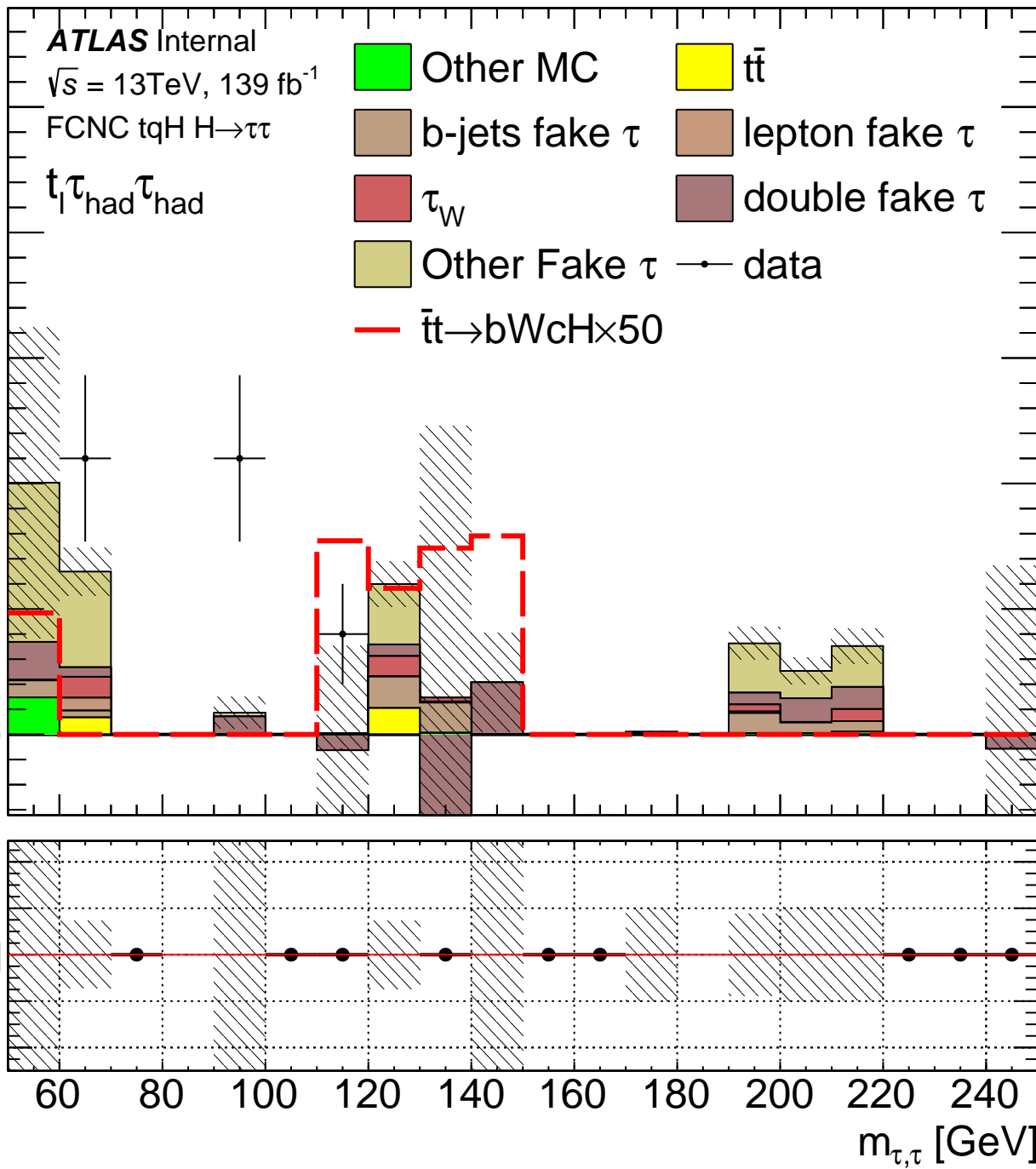
1.0

0.8

0.6

60 80 100 120 140 160 180 200 220 240

$m_{\tau,\tau} [\text{GeV}]$



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Other MC

b-jets fake τ

τ_W

Other Fake τ

$cg \rightarrow tH \times 9$

$t\bar{t}$

lepton fake τ

double fake τ

data

25

20

15

10

5

0

Data/Bkg

1.4

1.2

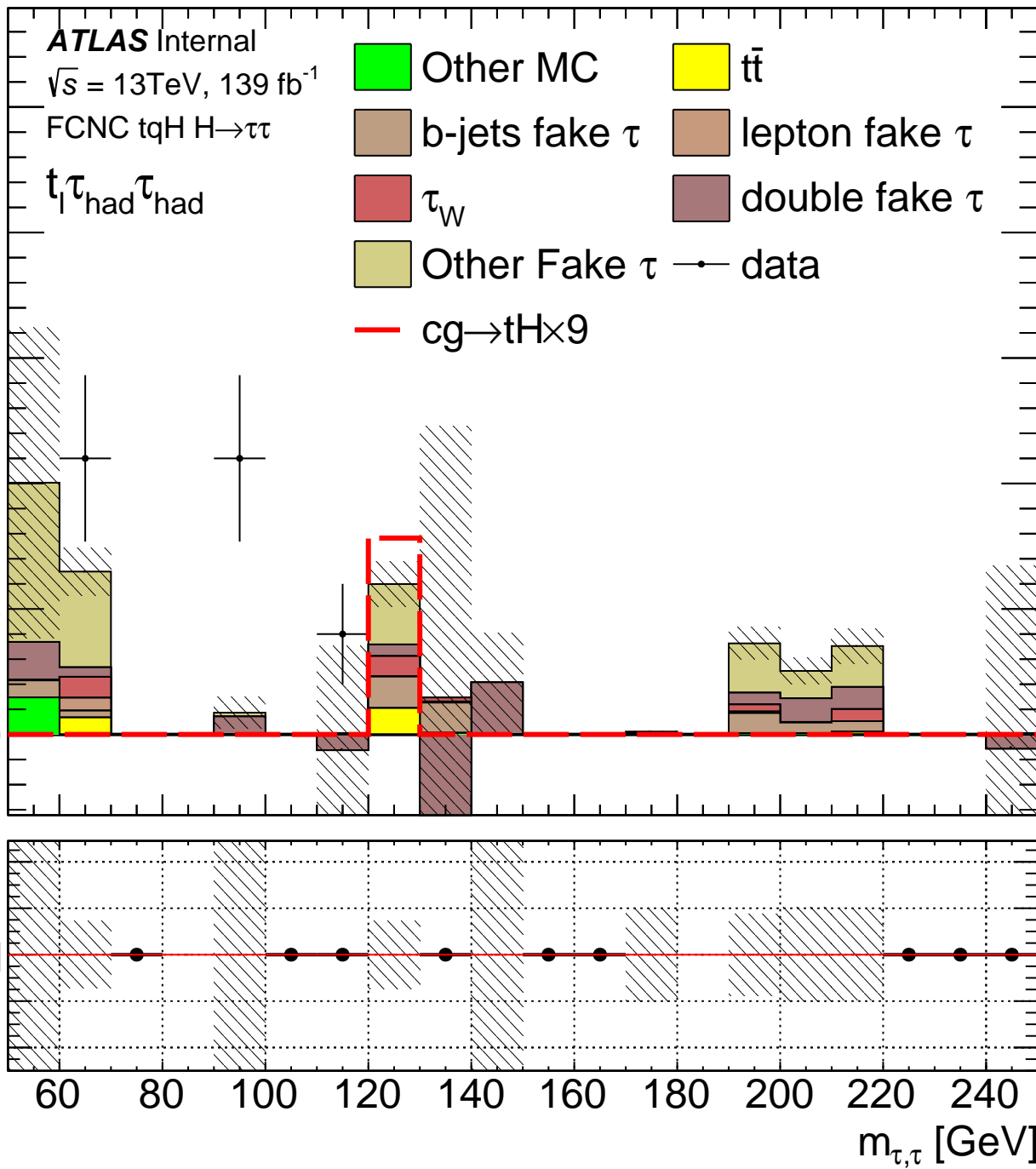
1.0

0.8

0.6

60 80 100 120 140 160 180 200 220 240

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τ_W

Other Fake τ

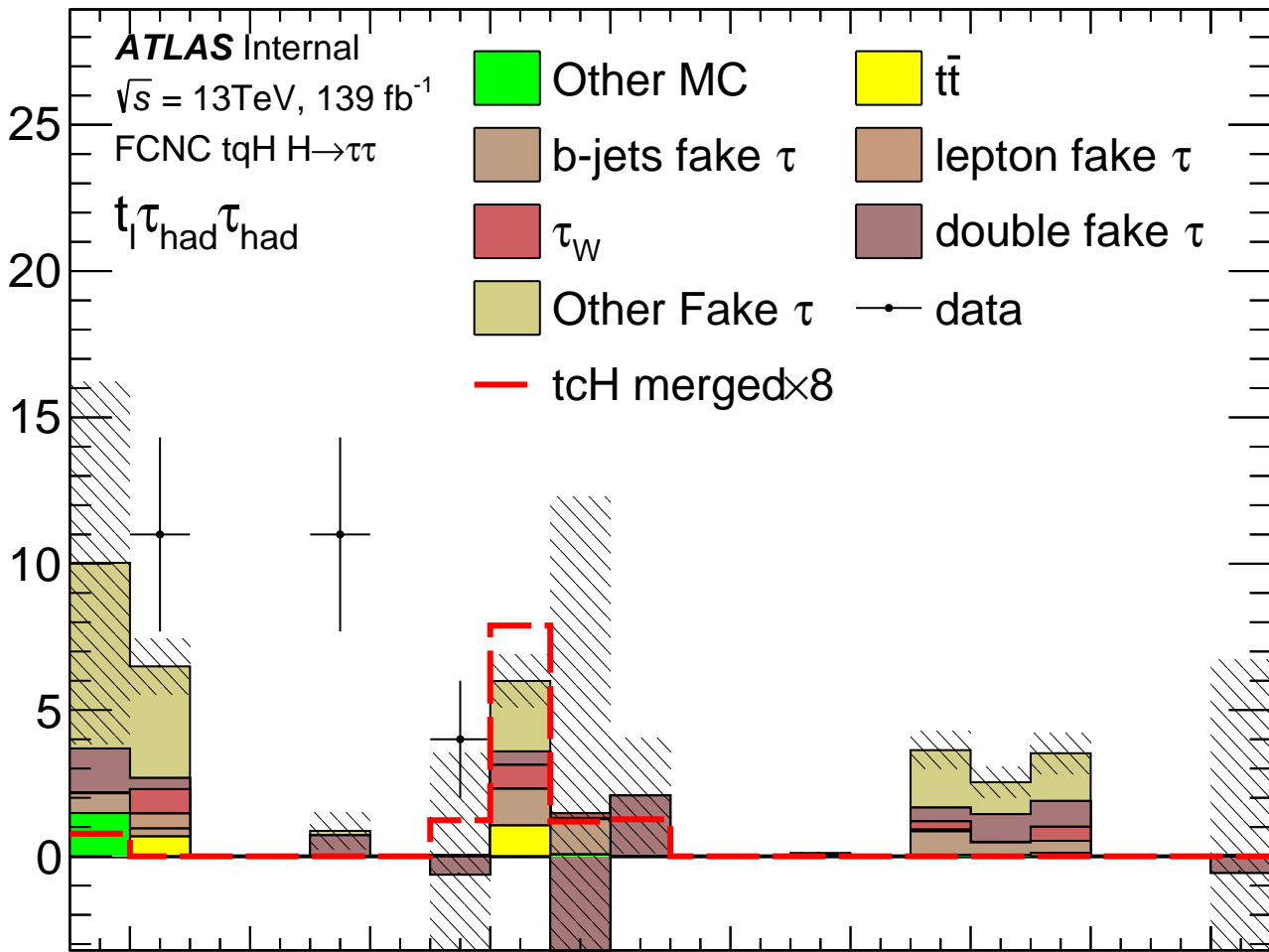
tcH merged $\times 8$

$t\bar{t}$

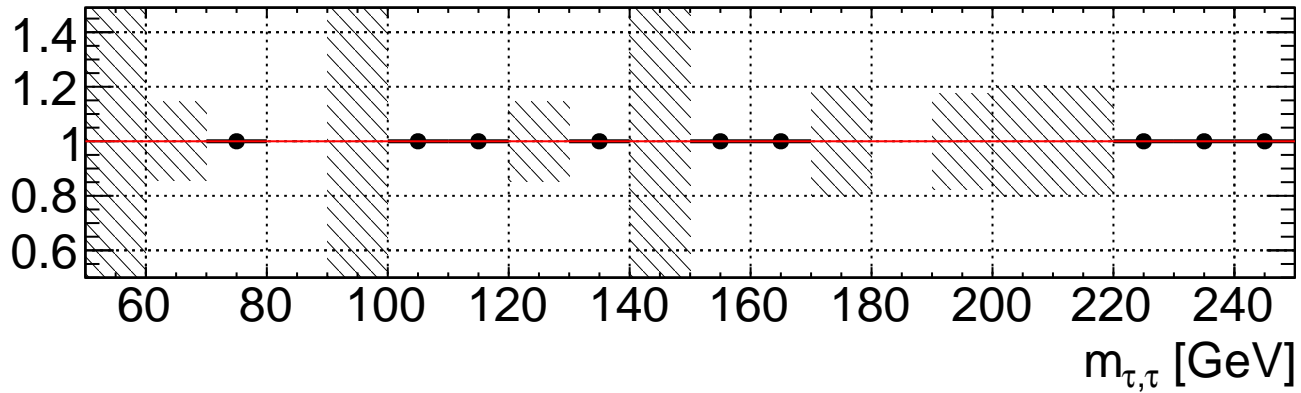
lepton fake τ

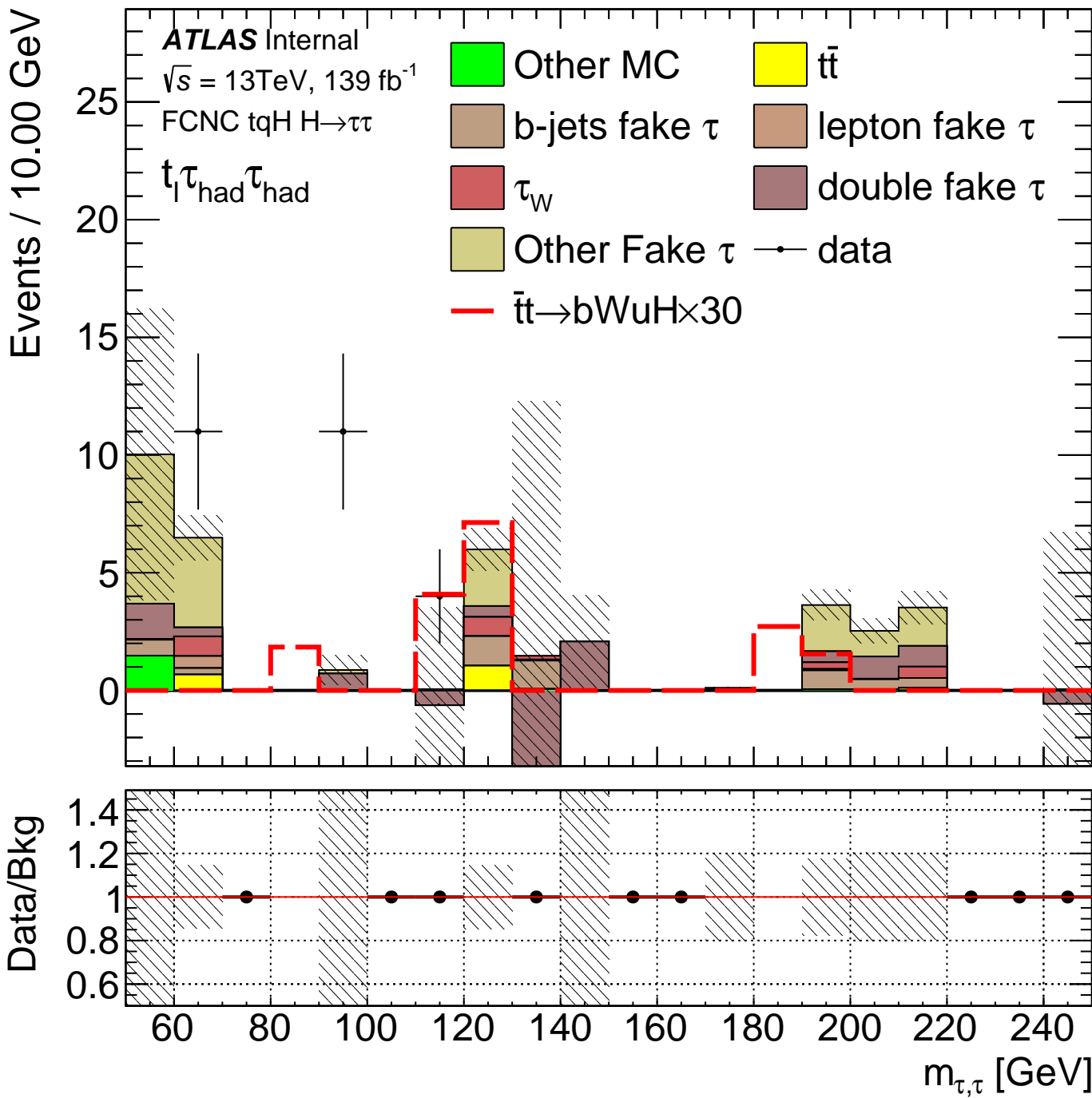
double fake τ

data



Data/Bkg





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Other Fake τ

$ug \rightarrow tH \times 1$

$t\bar{t}$

lepton fake τ

double fake τ

data

25

20

15

10

5

0

Data/Bkg

1.4

1.2

1.0

0.8

0.6

60

80

100

120

140

160

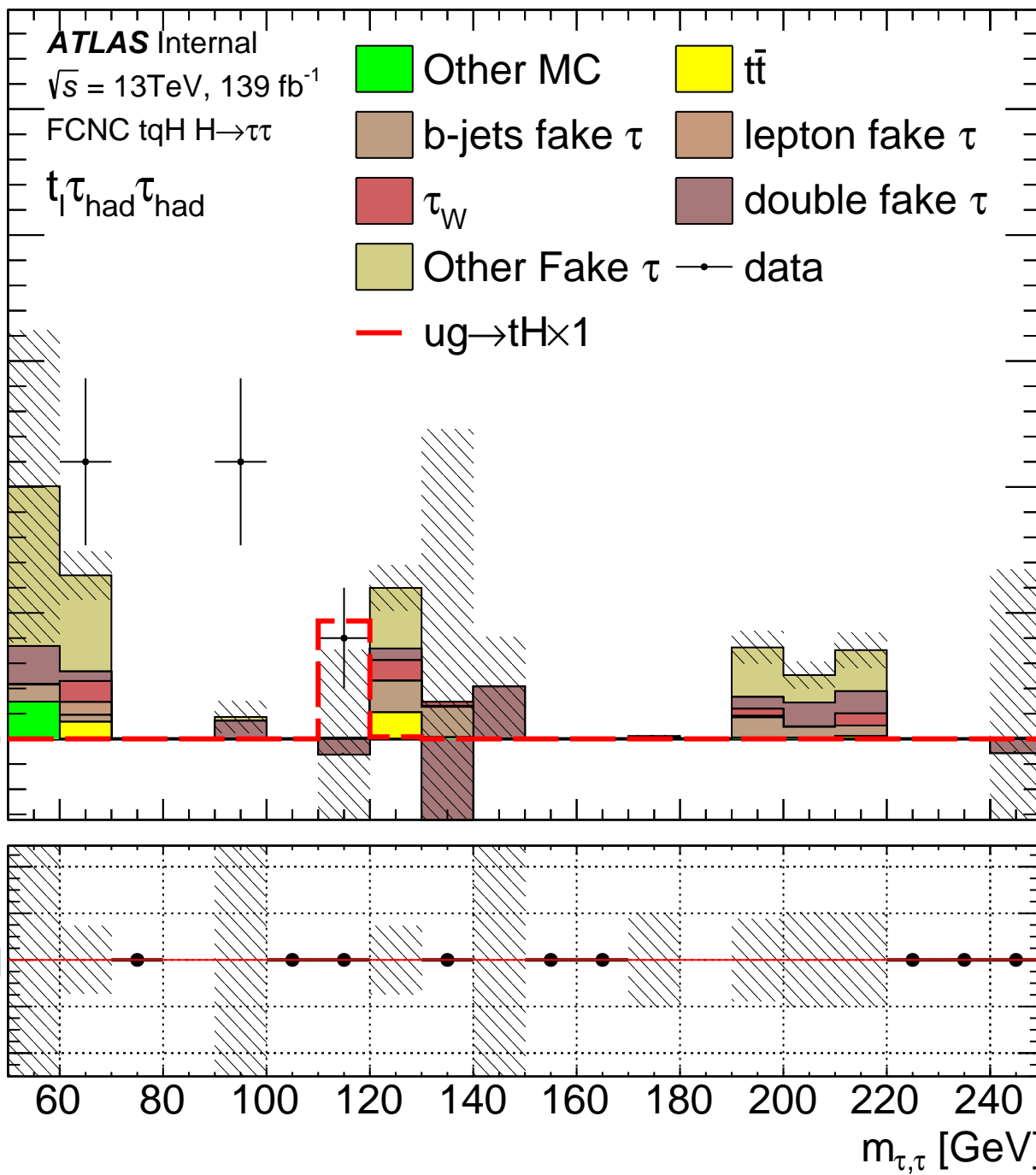
180

200

220

240

$m_{\tau,\tau} [\text{GeV}]$



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Other MC

b-jets fake τ

τ_W

Other Fake τ

tuH merged $\times 1$

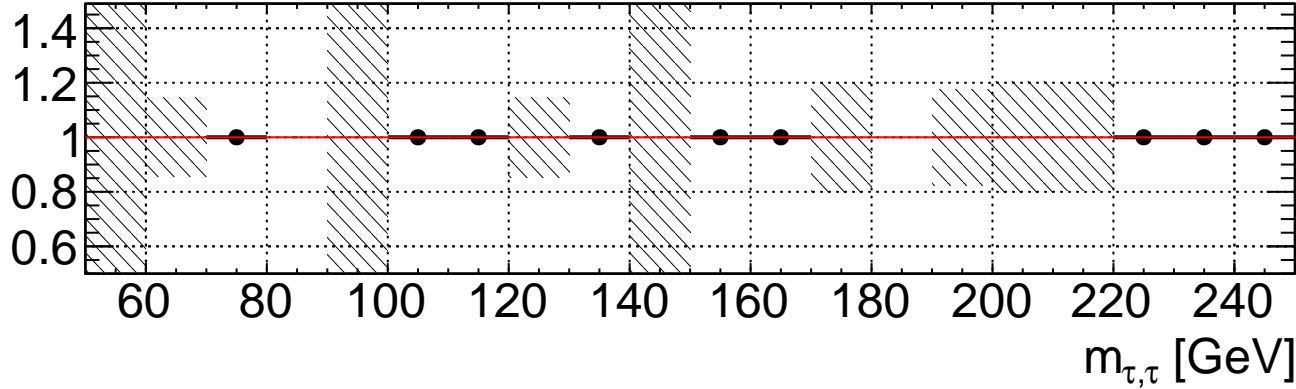
$t\bar{t}$

lepton fake τ

double fake τ

data

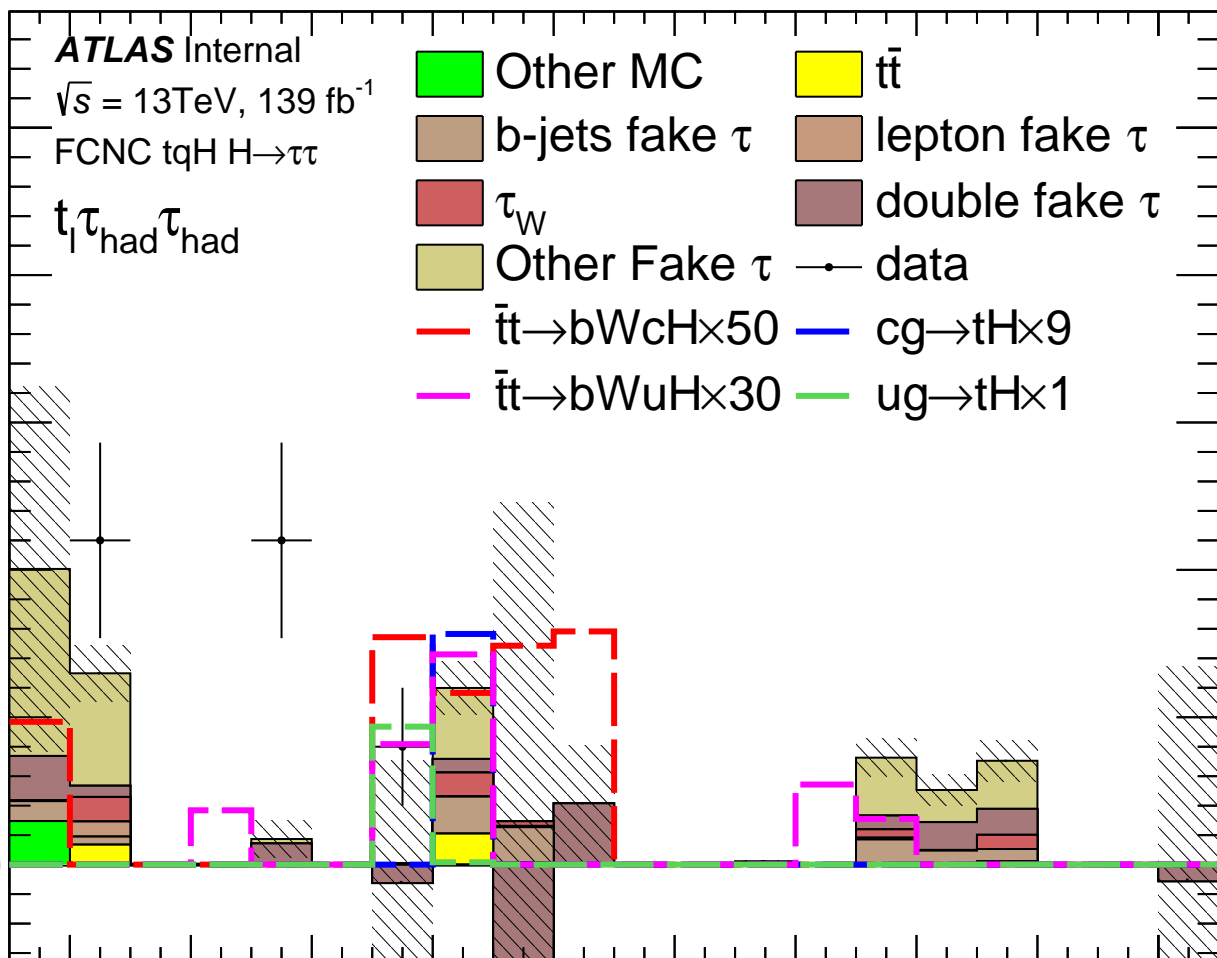
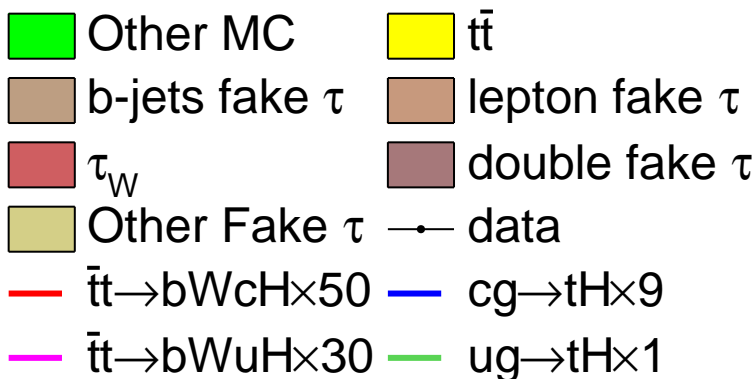
Data/Bkg



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