

Events / 6.00 GeV

**ATLAS** Internal

$\sqrt{s} = 13\text{TeV}, 140\text{ fb}^{-1}$

FCNC tqH  $H \rightarrow \tau\tau$

$t_h \tau_{\text{had}} \tau_{\text{had}} - 2j \text{ SS}($

SM Higgs

$Z \rightarrow \tau\tau$

$t\bar{t}$

only  $\tau_{\text{sub}}$  real

data

Diboson

Rare

$t\bar{t}V$

Fake

$t\bar{t} \rightarrow bWcH \times 40$

50

20

10

0

Data/Bkg

1.4

1.2

1.0

0.8

0.6

60

70

80

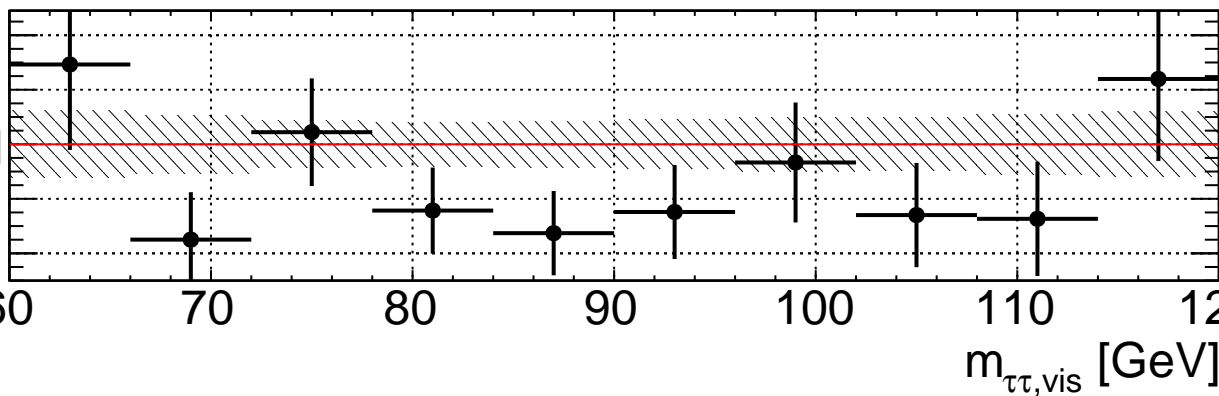
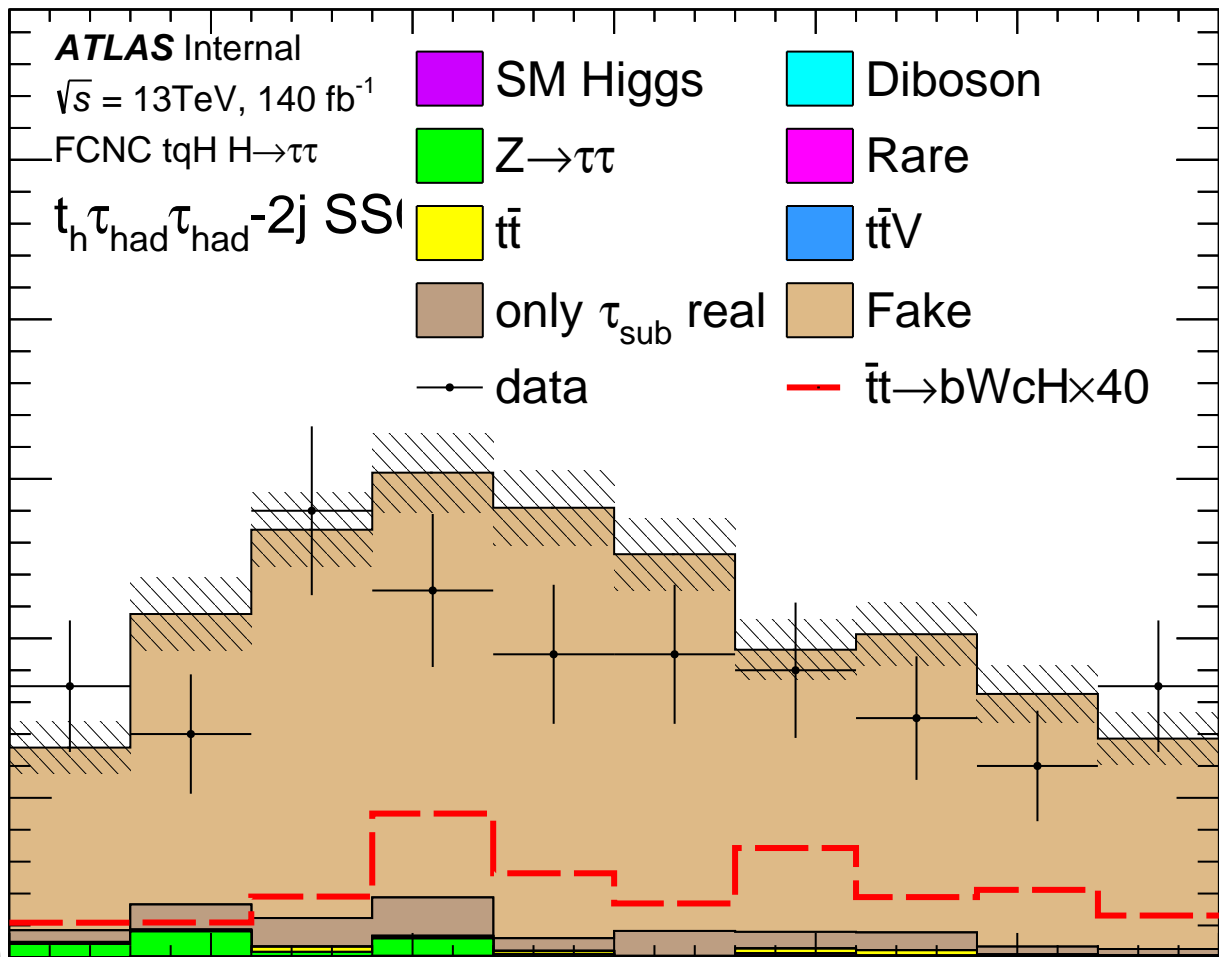
90

100

110

120

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



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SM Higgs

$Z \rightarrow \tau\tau$

$t\bar{t}$

only  $\tau_{\text{sub}}$  real

data

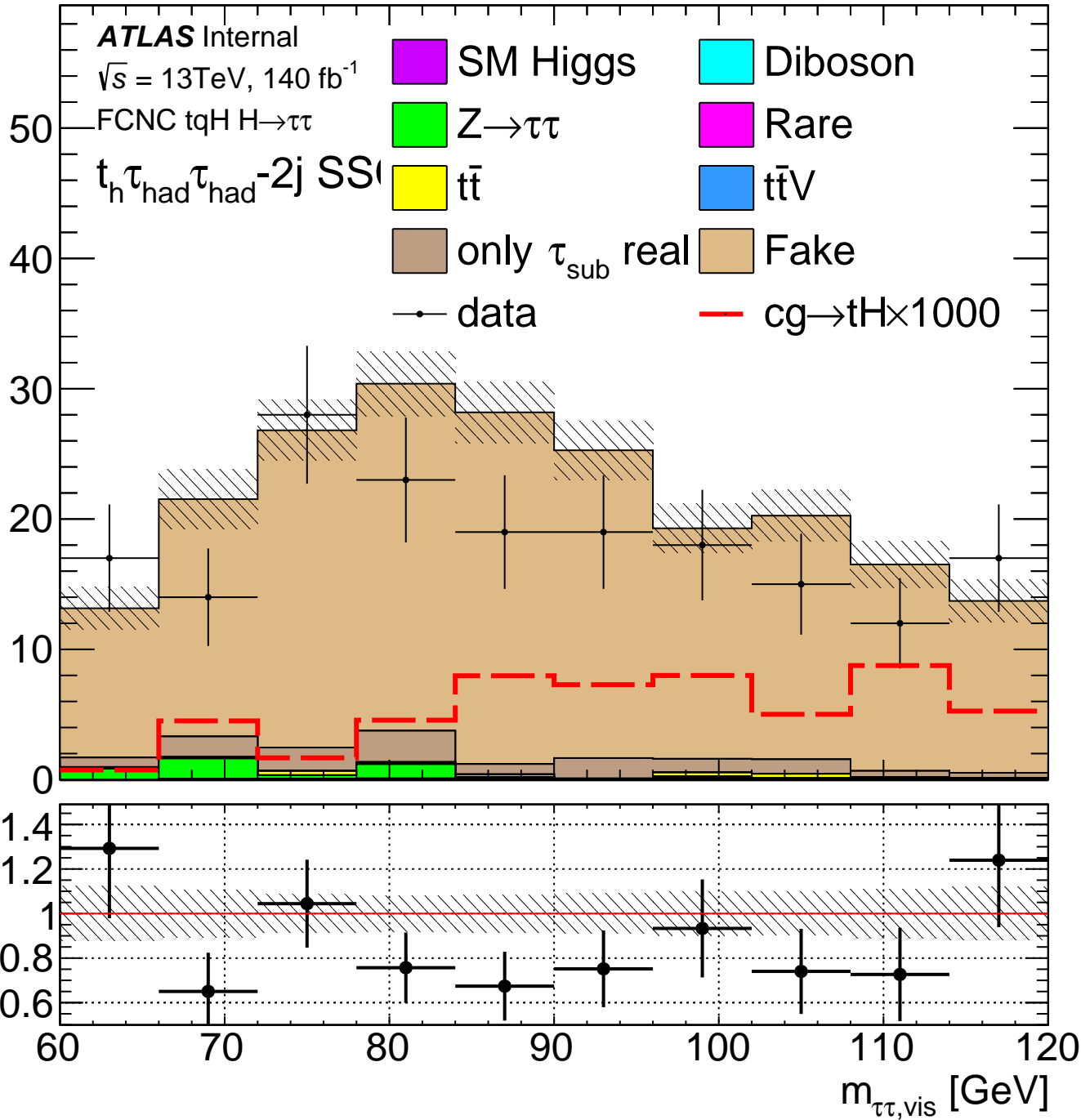
Diboson

Rare

$t\bar{t}V$

Fake

$cg \rightarrow tH \times 1000$



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data

Diboson

Rare

$t\bar{t}V$

Fake

tcH merged $\times 40$

50

40

30

20

10

0

Data/Bkg

1.4

1.2

1.0

0.8

0.6

60

70

80

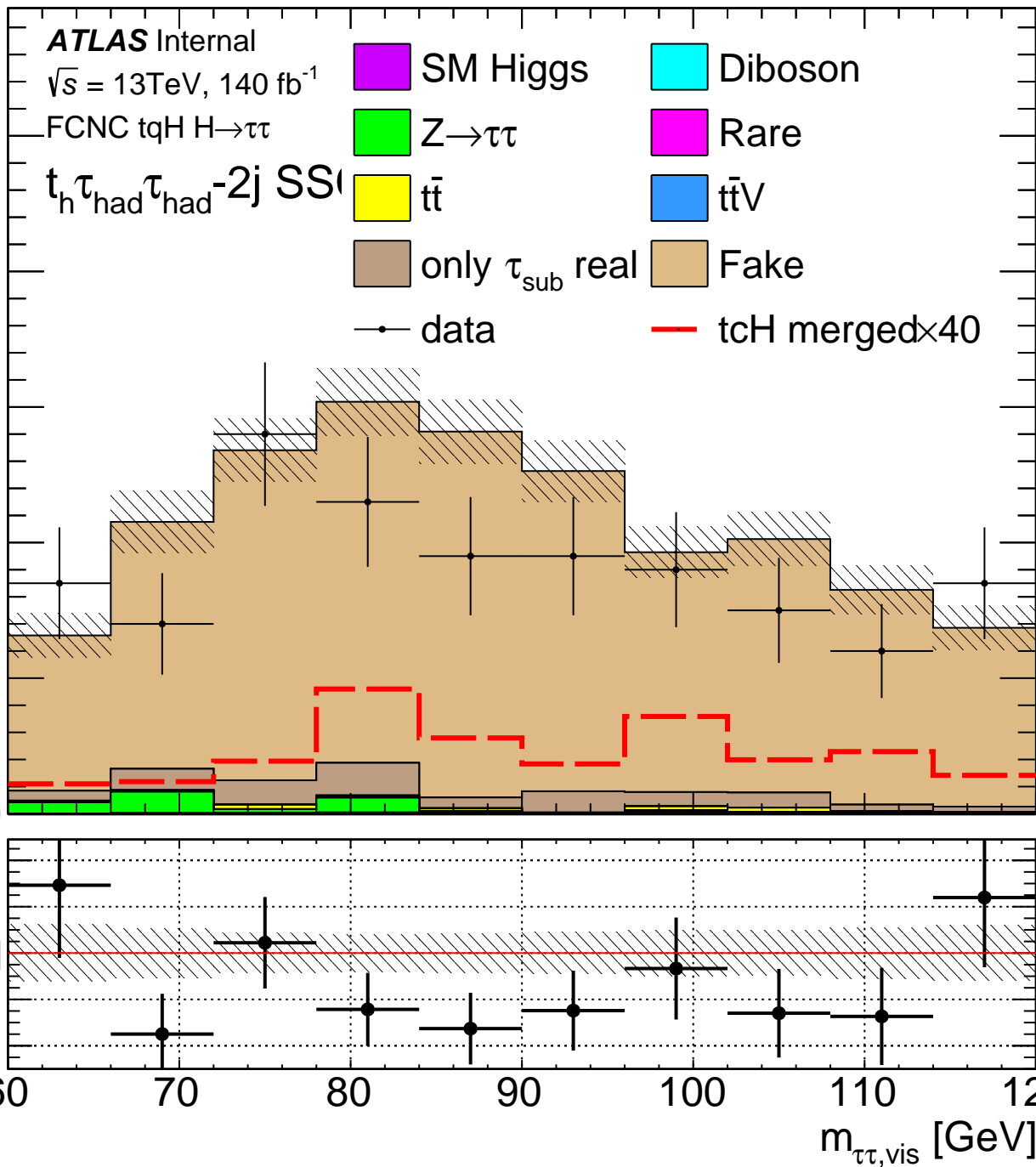
90

100

110

120

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



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SM Higgs

$Z \rightarrow \tau\tau$

$t\bar{t}$

only  $\tau_{\text{sub}}$  real

data

Diboson

Rare

$t\bar{t}V$

Fake

$t\bar{t} \rightarrow bWuH \times 70$

50

20

10

0

Data/Bkg

1.4

1.2

1.0

0.8

0.6

60

70

80

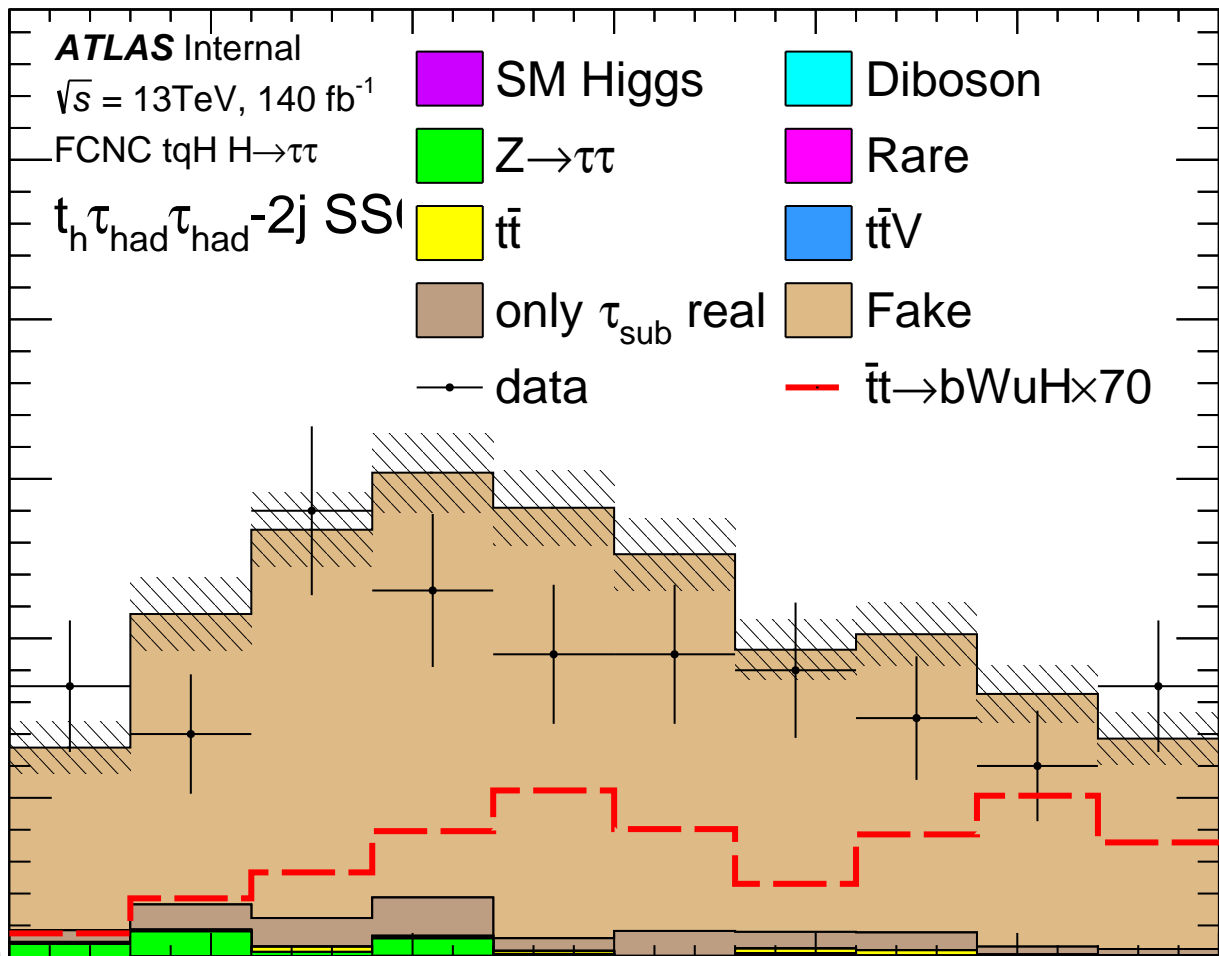
90

100

110

120

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



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SM Higgs

$Z \rightarrow \tau\tau$

$t\bar{t}$

only  $\tau_{\text{sub}}$  real

data

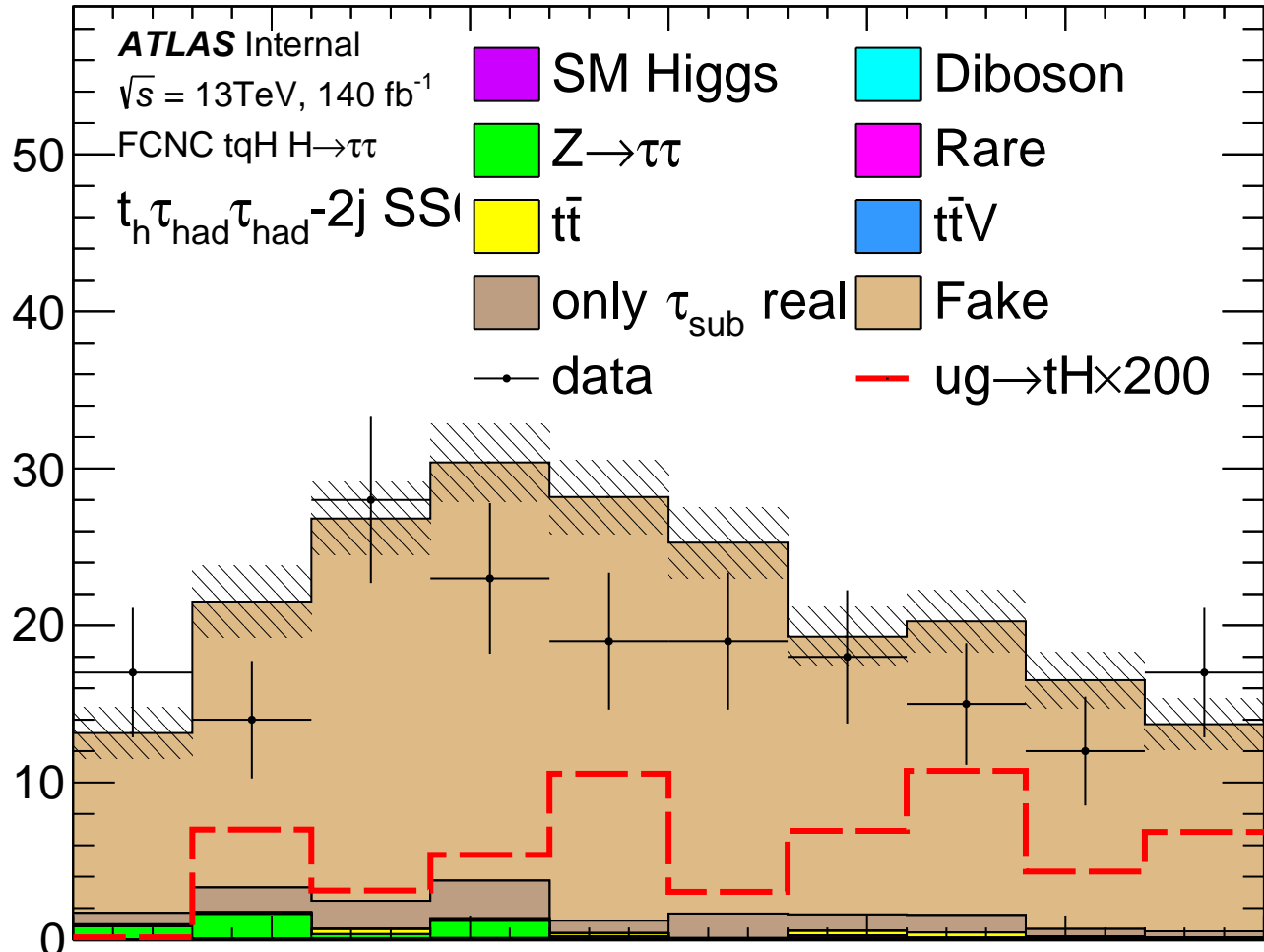
Diboson

Rare

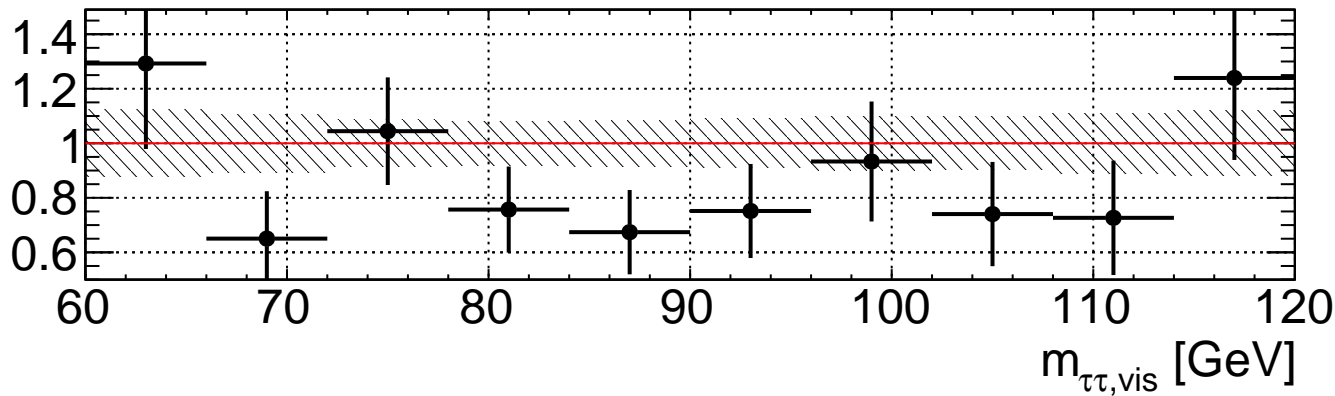
$t\bar{t}V$

Fake

$u g \rightarrow t H \times 200$



Data/Bkg



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SM Higgs

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$t\bar{t}$

only  $\tau_{\text{sub}}$  real

data

Diboson

Rare

$t\bar{t}V$

Fake

tuH merged $\times 50$

Data/Bkg

