

Events / 0.20

**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

$t\bar{t} \rightarrow bWcH \times 100$

70

60

50

40

30

20

10

0

Data/Bkg

1.4

1.2

0.8

0.6

-1

-0.8

-0.6

-0.4

-0.2

0

0.2

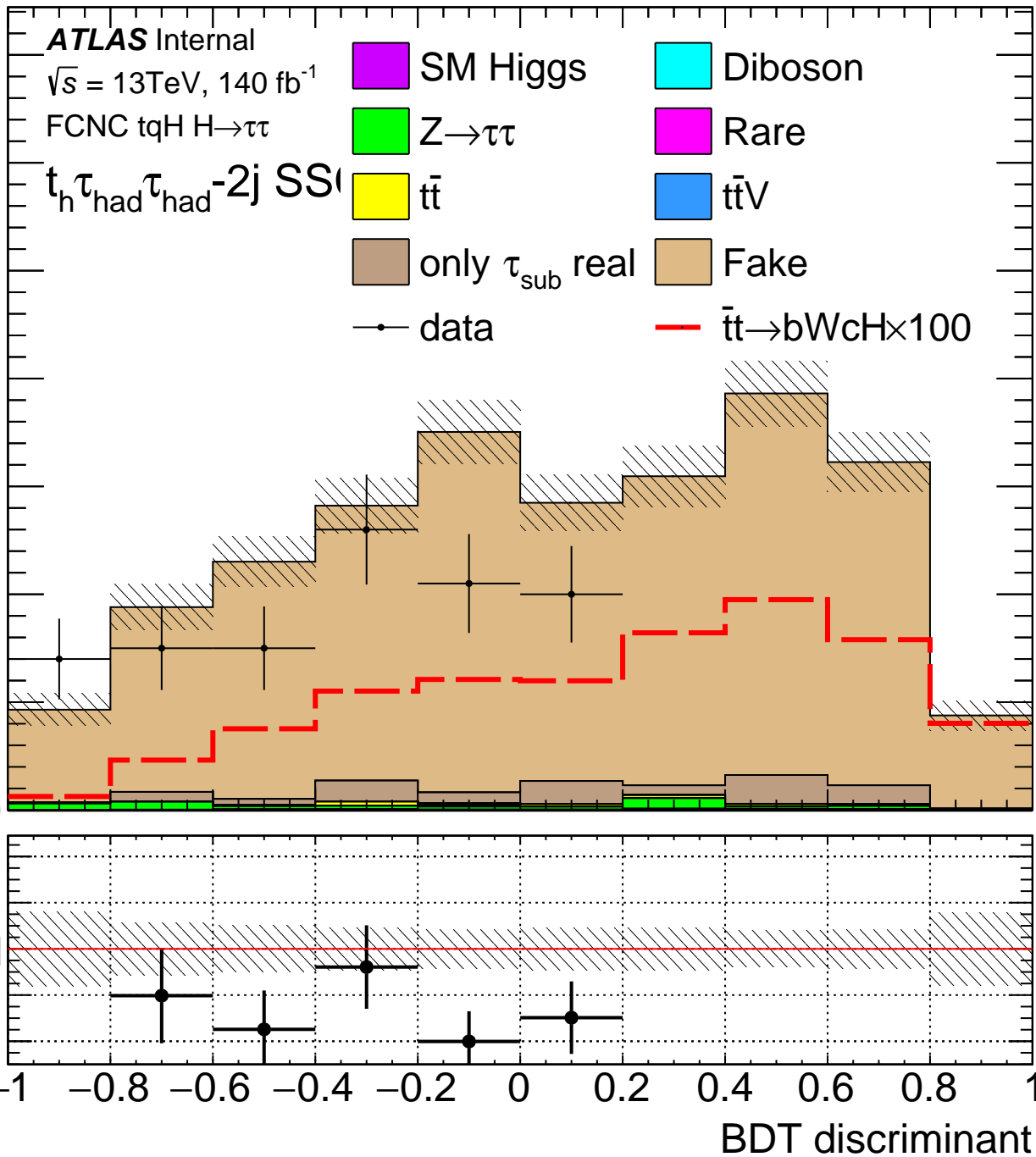
0.4

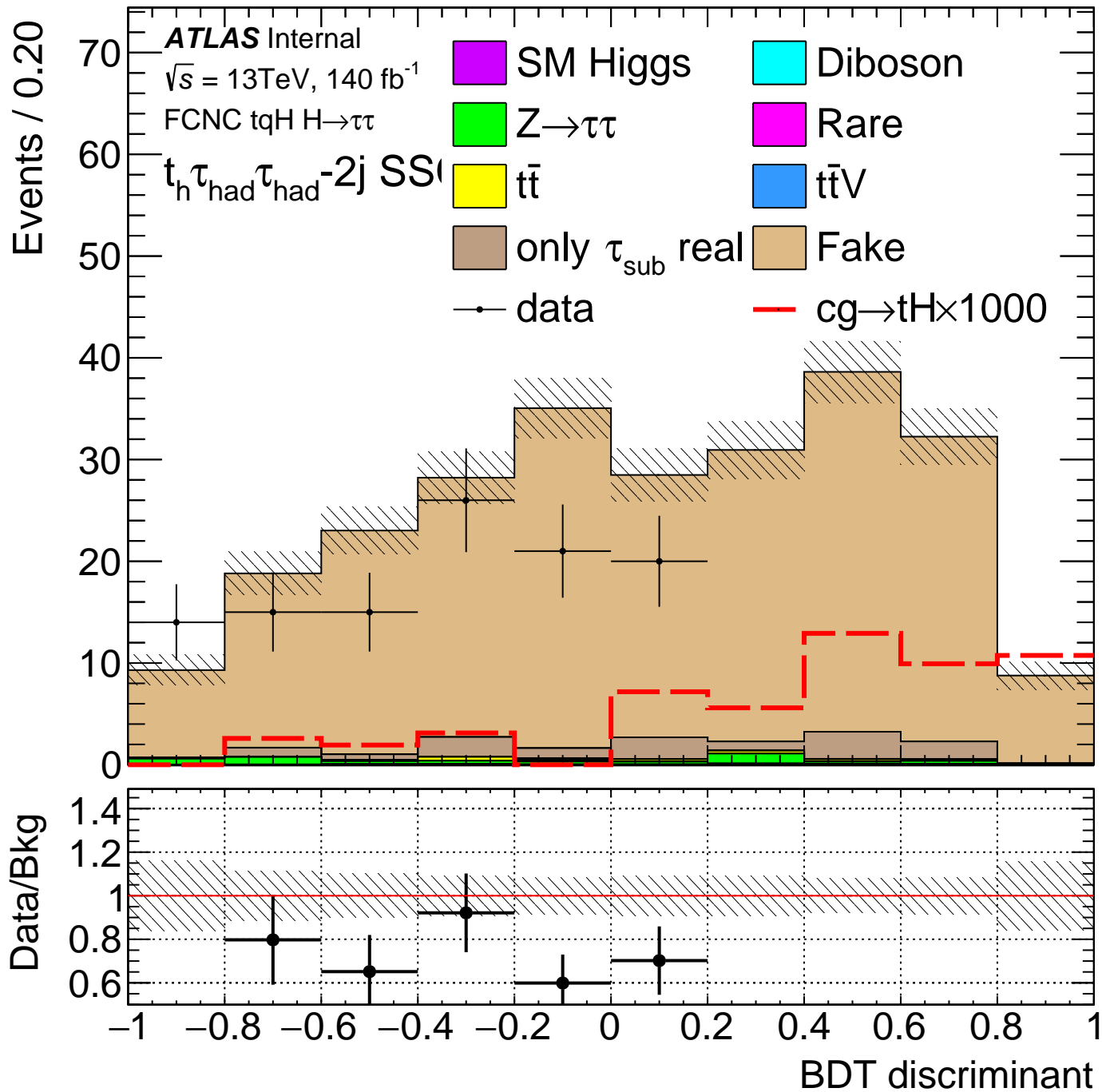
0.6

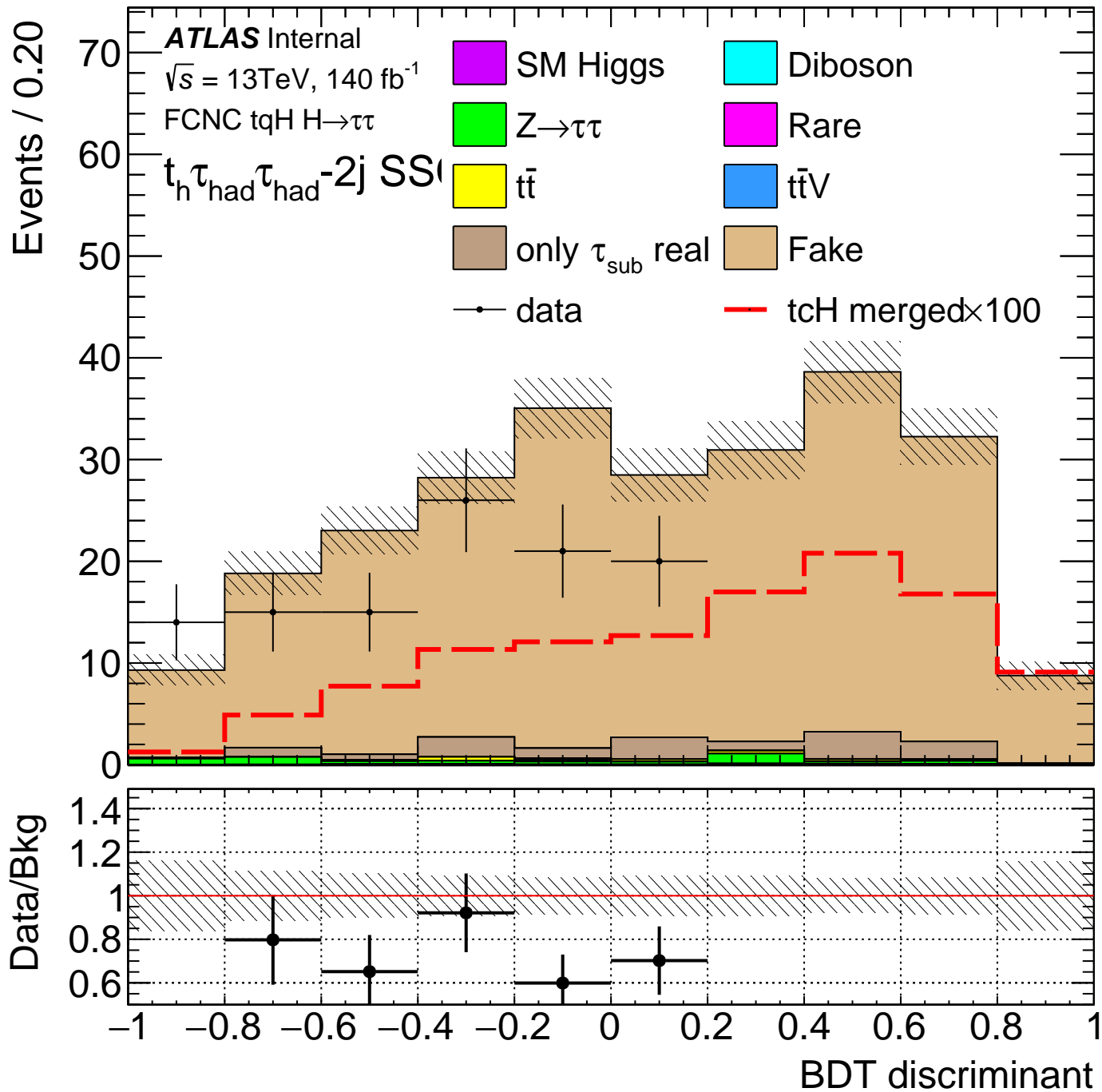
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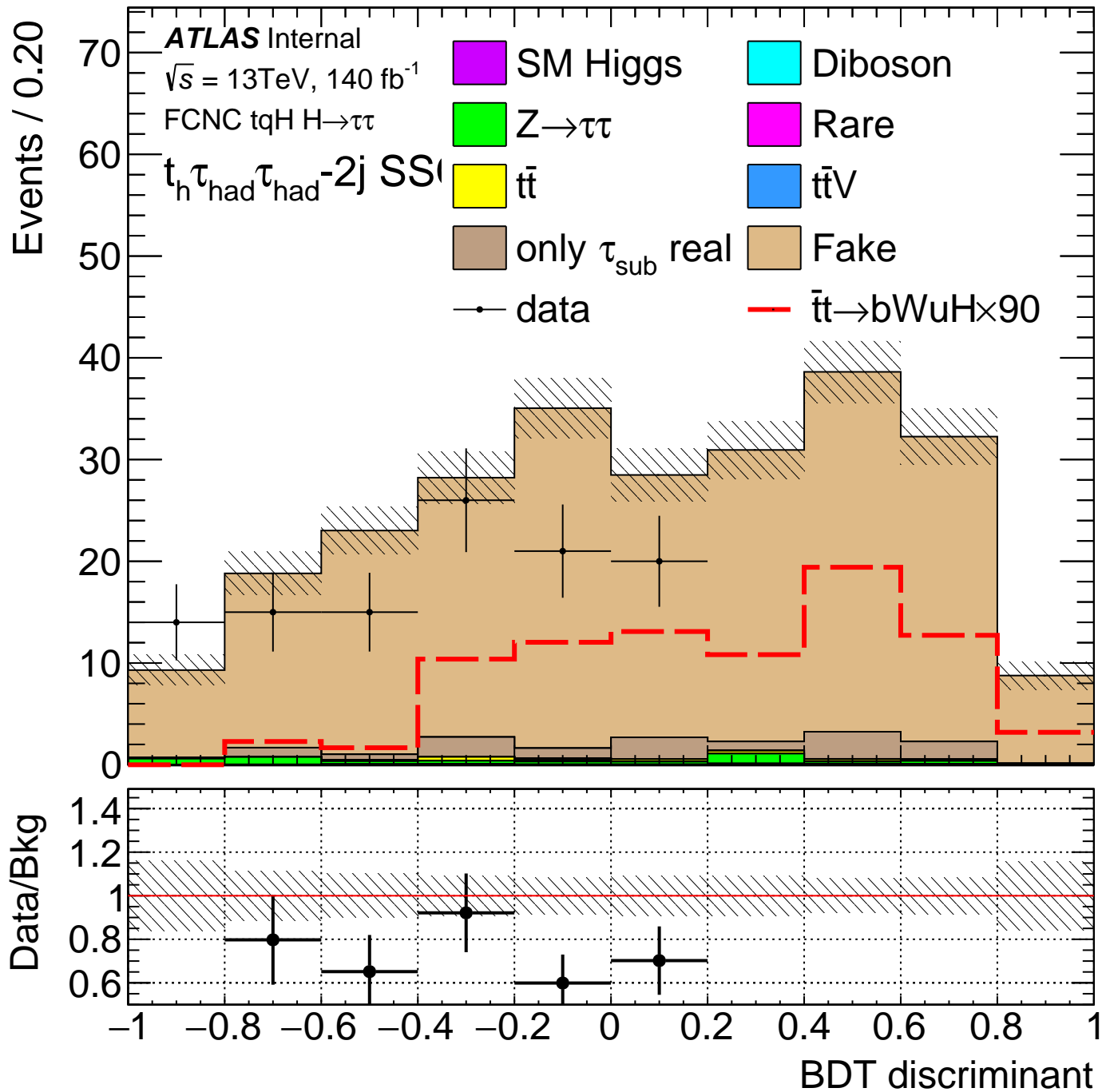
1

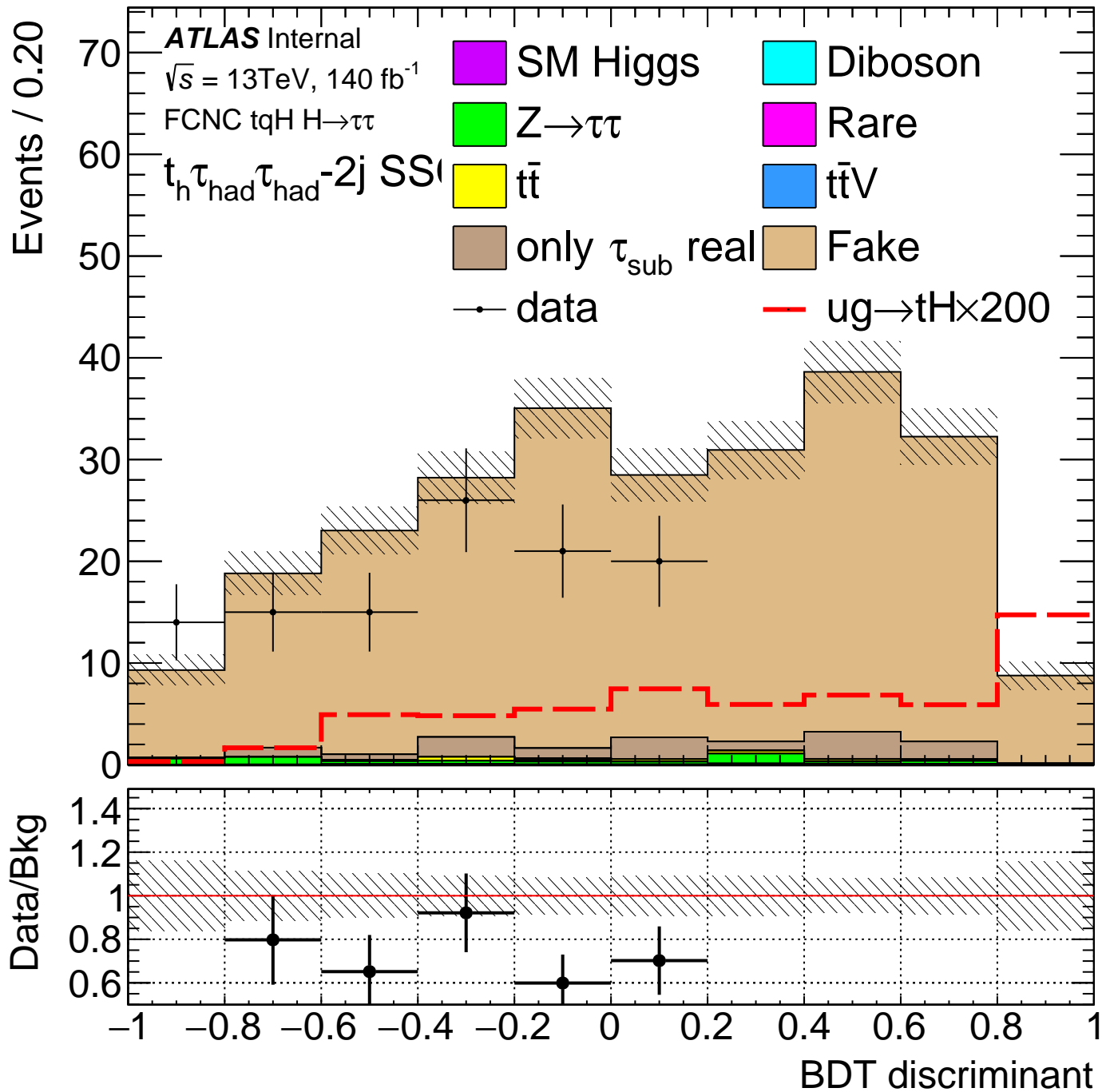
BDT discriminant











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SM Higgs

 $Z \rightarrow \tau\tau$  $t\bar{t}$ only  $\tau_{\text{sub}}$  real

—•— data

Diboson

Rare

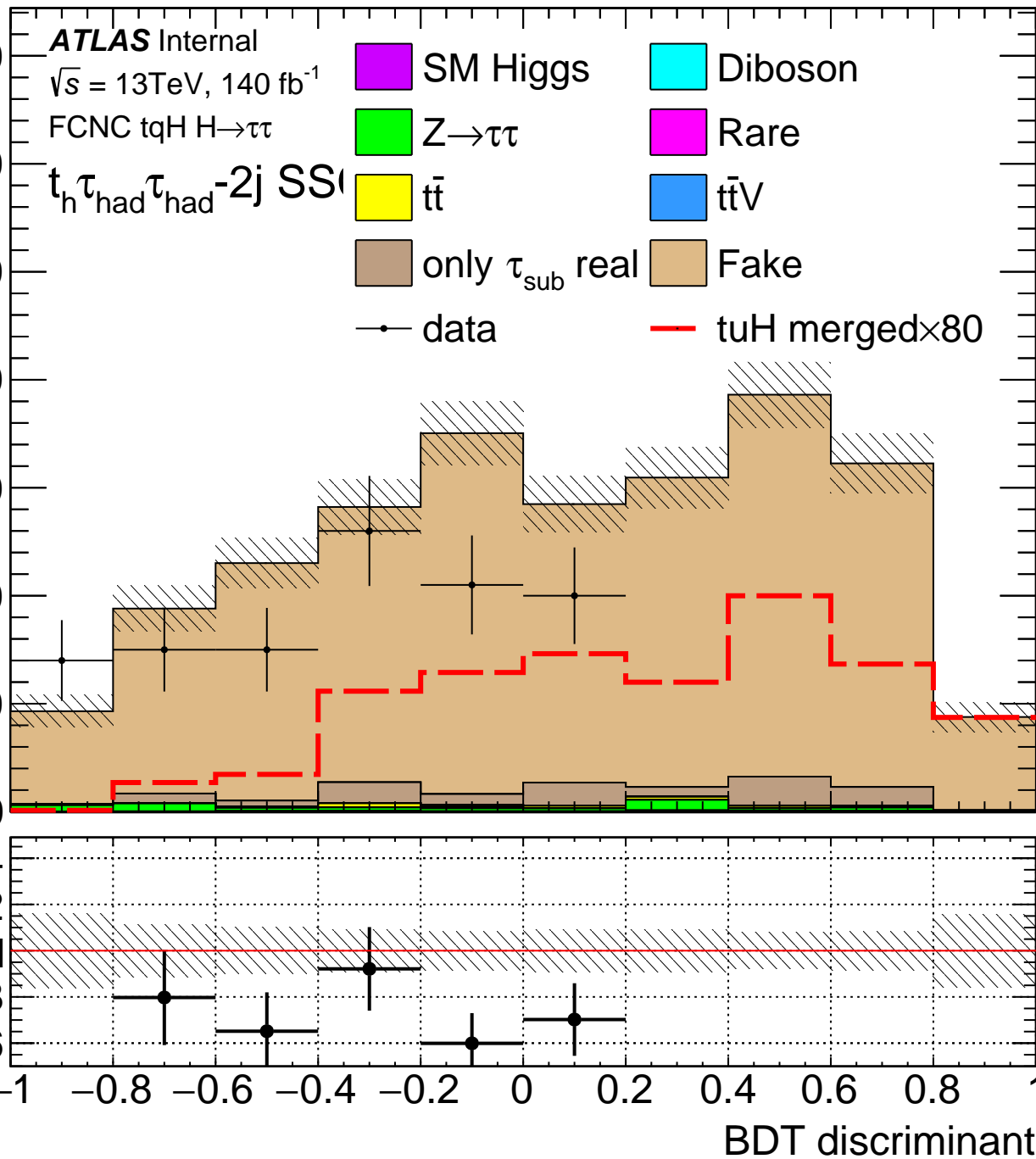
 $t\bar{t}V$ 

Fake

— tuH merged $\times 80$ 

Data/Bkg

BDT discriminant



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**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

 $cg \rightarrow tH \times 1000$  $ug \rightarrow tH \times 200$ 

Diboson

Rare

 $t\bar{t}V$ 

Fake

 $t\bar{t} \rightarrow bWcH \times 100$  $t\bar{t} \rightarrow bWuH \times 90$ 

Data/Bkg

BDT discriminant

