

tHq(2ISS+1 $\tau$ )

SR

CR  $t\bar{t}+t\bar{t}X$

$t\bar{t}$  hdamp=3mtp

$t\bar{t}$  FSR

$t\bar{t}$  ISR

$t\bar{t}$   $\mu_R$  scale

$t\bar{t}$   $\mu_F$  scale

$t\bar{t}$   $\mu_R$  scale

$t\bar{t}$  PS + had.

$t\bar{t}$  NLO gen.

$t\bar{t}Z$  ISR

$t\bar{t}Z$   $\mu_R$  scale

$t\bar{t}Z$   $\mu_F$  scale

$t\bar{t}Z$   $\mu_R$  scale

$t\bar{t}Z$  NLO gen. + PS + had.

$t\bar{t}W$  ISR

$t\bar{t}W$   $\mu_R$  scale

$t\bar{t}W$   $\mu_F$  scale

$t\bar{t}W$   $\mu_R$  scale

$t\bar{t}W$  NLO gen. + PS + had.

$tW$  FSR

$tW$  ISR

$tW$   $\mu_R$  scale

$tW$   $\mu_F$  scale

$tW$   $\mu_R$  scale

$tW$  PS + had.

$tW$  NLO gen.

$tW$  (DR vs. DS)

Diboson  $\mu_R$  scale

Diboson  $\mu_F$  scale

Diboson  $\mu_R$  scale

Diboson NLO gen. + PS + had.

$t\bar{t}H$  FSR

$t\bar{t}H$  ISR

$t\bar{t}H$   $\mu_R$  scale

$t\bar{t}H$   $\mu_F$  scale

$t\bar{t}H$   $\mu_R$  scale

$t\bar{t}H$  PS + had.

$t\bar{t}H$  NLO gen.

$tZq$  ISR

$tZq$   $\mu_R$  scale

$tZq$   $\mu_F$  scale

$tZq$   $\mu_R$  scale

$tZq$  PS + had.

$tWZ$   $\mu_R$  scale

$tWZ$   $\mu_F$  scale

$tWZ$   $\mu_R$  scale

$tWZ$  (alt. DR)

$tWH$   $\mu_R$  scale

$tWH$   $\mu_F$  scale

$tWH$   $\mu_R$  scale

$tWH$  PS + had.

$tHq$   $\mu_R$  scale

$tHq$   $\mu_F$  scale

$tHq$   $\mu_R$  scale

$tHq$  PS + had.

$tWH$  XS

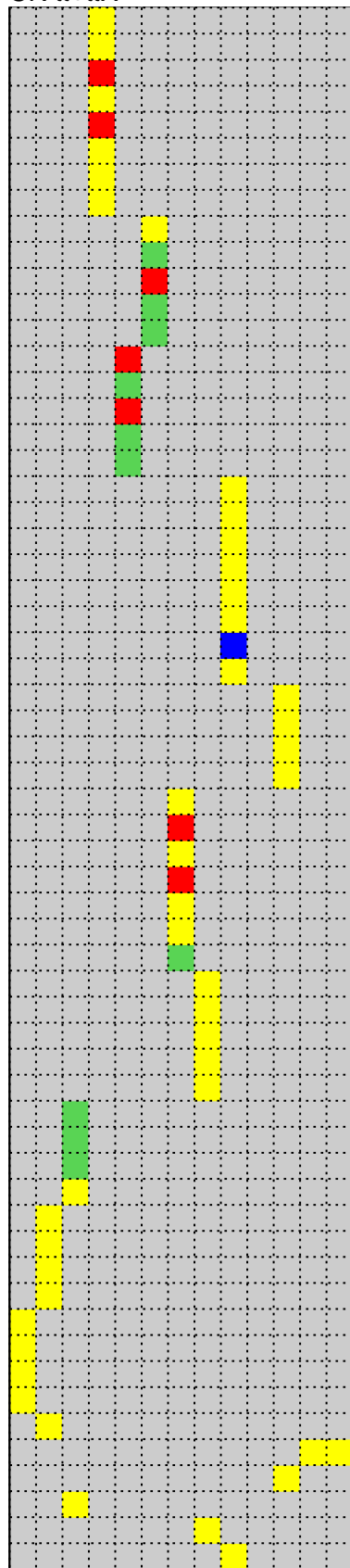
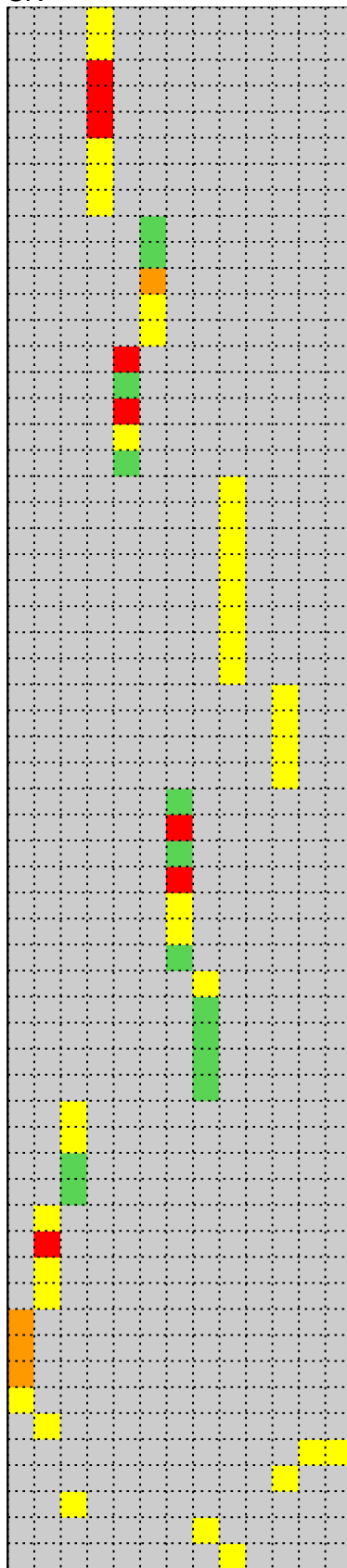
Minor bkg. XS

Diboson XS

$tWZ$  XS

$tZq$  XS

$tW$  XS



Not present  
 Kept  
 Shape dropped  
 Norm. dropped  
 Dropped  
 Norm >99% (dropped)  
 Bad shape (dropped)  
 Bad shape & norm. (dropped)