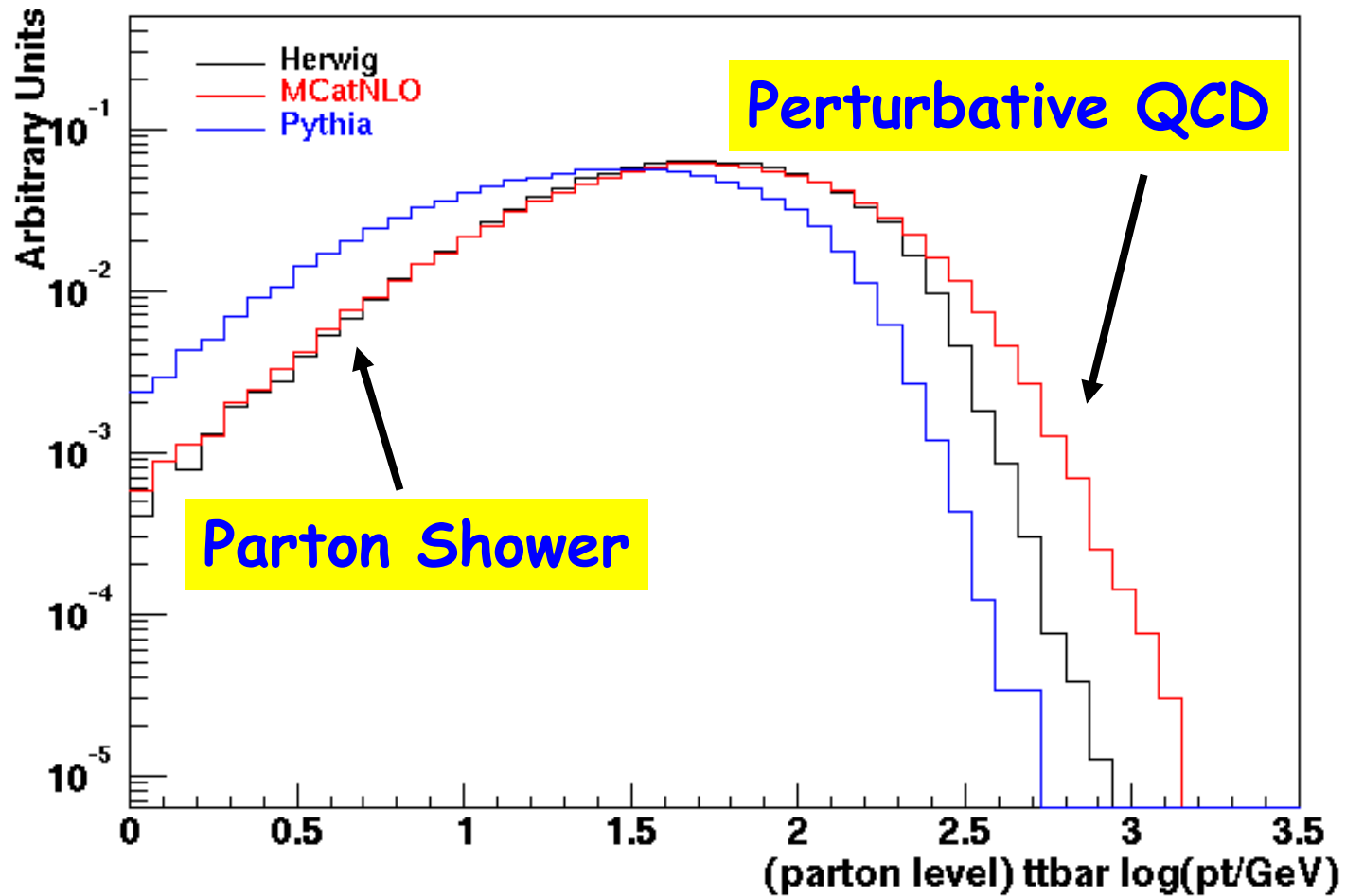


tt+jets at LHC (1)

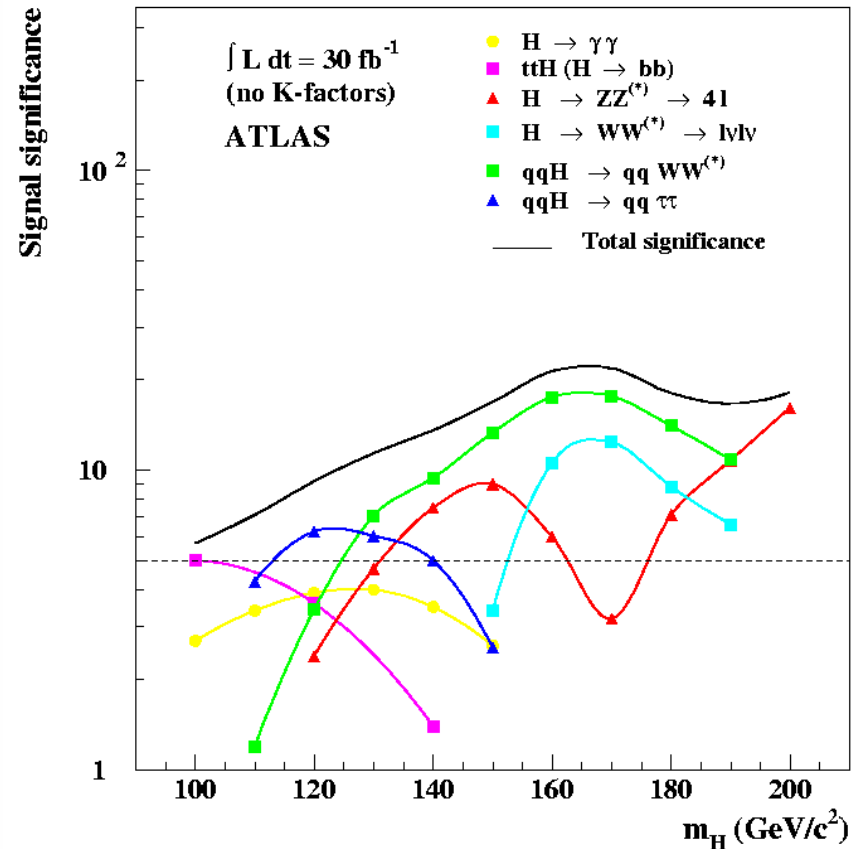
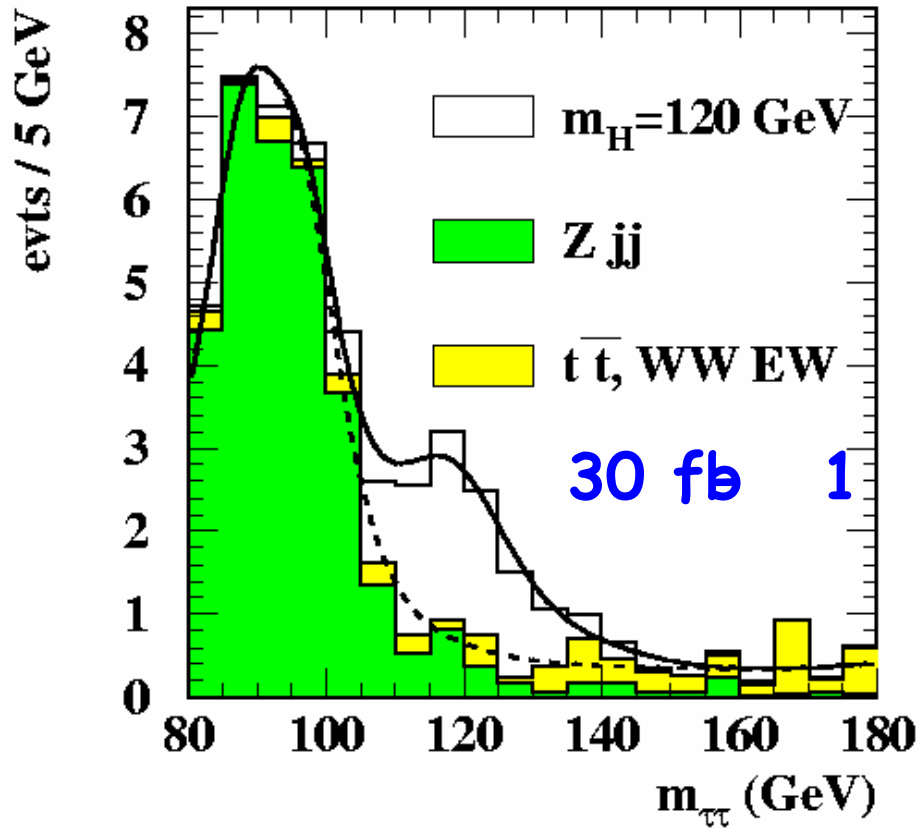
Process (SM Higgs)	$t\bar{t}$ background contribution
$pp \rightarrow WH \rightarrow Wb\bar{b}$ $t\bar{t} H \rightarrow t\bar{t} b\bar{b}$ $H \rightarrow ZZ^* \rightarrow 4l$ $H \rightarrow WW^*$ (VBF) $WH \rightarrow WWW^* \rightarrow l\nu l\nu$ Heavy $H \rightarrow WW \rightarrow l\nu jj$ (VBF) Heavy $H \rightarrow ZZ \rightarrow lljj$ (VBF)	$t\bar{t} \rightarrow WWb\bar{b}$ 2nd-most dominant $t\bar{t} jj$ dominant $t\bar{t} \rightarrow WbW\bar{b}$ dominant $t\bar{t} \rightarrow WWb\bar{b} \rightarrow l\nu l\nu + X$ dominant $t\bar{t}$ dominant $t\bar{t} \rightarrow l\nu jjb\bar{b}$ $t\bar{t} \rightarrow l\nu jjb\bar{b}$ 2nd-most dominant
Process (BSM)	
SUSY: $t\bar{t} + h \rightarrow t\bar{t} b\bar{b}$ SUSY: $H/A \rightarrow \tau\tau$ SUSY: $b\bar{b} H/A \rightarrow \tau\tau$ (large $\tan\beta$) SUSY: $H/A \rightarrow t\bar{t}$ SUSY: $b\bar{b} H/A \rightarrow b\bar{b} b\bar{b}$ SUSY: $H \rightarrow hh \rightarrow b\bar{b} b\bar{b}, b\bar{b} \tau\tau$ SUSY: $A \rightarrow Zh \rightarrow llb\bar{b}$ SUSY: $H^\pm \rightarrow cs$ SUSY: $bg \rightarrow H^\pm t \rightarrow tb t$	$t\bar{t}$ +jets $t\bar{t}$ +jets $t\bar{t}$ +jets $t\bar{t}$ +jets dominant $t\bar{t}$ +jets (needs to be checked) $t\bar{t}$ dominant or 2nd dominant $t\bar{t}$ dominant for parts of the phase space $t\bar{t}$ +jets dominant $t\bar{t}$ +jets dominant

tt +jets at LHC (2)



UE & VBF $H \rightarrow \tau\tau$ (1)

Need to know well shape of $Z \rightarrow \tau\tau \rightarrow ll$ spectrum



UE & VBF $H \rightarrow \tau\tau$ (2)

Effect of underlying event in $Z \rightarrow \text{all}$

