

Process	Groups	ME order	Generator	Notes
$t\bar{t}H$	$t\bar{t}H(H\rightarrow c\bar{c}), t\bar{t}H(H\rightarrow b\bar{b}),$ $t\bar{t}H(H\rightarrow \text{Other})$	NLO	POWHEG v2	
$t\bar{t}Z$	$t\bar{t}Z(Z\rightarrow c\bar{c}), t\bar{t}Z(Z\rightarrow b\bar{b}),$ $t\bar{t}Z(Z\rightarrow \text{Other})$	NLO	MADGRAPH5_aMC@NLO v2.6.1	MADSPIN for heavy particle decays [86]
$t\bar{t}$	$t\bar{t}+\text{light}, t\bar{t}+\geq 2c, t\bar{t}+c$	NLO	POWHEG v2	
$t\bar{t}b\bar{b}$	$t\bar{t}+\geq 2b, t\bar{t}+b$	NLO	POWHEG-BOX-RES	
$t\bar{t}b\bar{b}$ DPS	$t\bar{t}+\geq 2b, t\bar{t}+b$	NLO / LO	POWHEG v2 / PYTHIA v8.240	$t\bar{t}$ NLO ME with POWHEG/ LO $b\bar{b}$ DPS with PYTHIA