

Production Mode**Particle-Level Production Bins****STXS Reduced Stage 1.2 Category****Reconstructed Signal Region****ggH**

= 0-jet

 $p_{\tau^H} < 200 \text{ GeV}$ **ggH 0j, low p_{τ^H}** $p_{\tau^H} < 60 \text{ GeV}$ **ggH 1j, very low p_{τ^H}**

= 1-jet

 $60 \leq p_{\tau^H} < 120 \text{ GeV}$ **ggH 1j, low p_{τ^H}** $120 \leq p_{\tau^H} < 200 \text{ GeV}$ **ggH 1j, med p_{τ^H}** ≥ 2 -jets $p_{\tau^H} < 200 \text{ GeV}$ **ggH 2j, low p_{τ^H}** $p_{\tau^H} \geq 200 \text{ GeV}$ **ggH, high p_{τ^H}** **EW qqH** $N_{\text{jets}} \geq 2$ $p_{\tau^H} < 200 \text{ GeV}$ $350 \leq m_{jj} < 700 \text{ GeV}$ **EW qqH, low m_{jj} -low p_{τ^H}** $700 \leq m_{jj} < 1000 \text{ GeV}$ **EW qqH, med m_{jj} -low p_{τ^H}** $1000 \leq m_{jj} < 1500 \text{ GeV}$ **EW qqH, high m_{jj} -low p_{τ^H}** $m_{jj} \geq 1500 \text{ GeV}$ **EW qqH, very high m_{jj} -low p_{τ^H}** $p_{\tau^H} \geq 200 \text{ GeV}$ $m_{jj} \geq 350 \text{ GeV}$ **EW qqH, high p_{τ^H}** $p_{\tau^{\text{sublead}}} \leq 20 \text{ GeV}$ $p_{\tau^{\text{sublead}}} > 20 \text{ GeV}$ $p_{\tau^{\text{sublead}}} \leq 20 \text{ GeV}$ $p_{\tau^{\text{sublead}}} > 20 \text{ GeV}$ $p_{\tau^H} < 60 \text{ GeV}$ $60 \leq p_{\tau^H} < 120 \text{ GeV}$ $120 \leq p_{\tau^H} < 200 \text{ GeV}$ $m_{\ell\ell} \leq 30 \text{ GeV}$ $m_{\ell\ell} > 30 \text{ GeV}$ $p_{\tau^H} \geq 200 \text{ GeV}$ $m_{\ell\ell} \leq 30 \text{ GeV}$ $m_{\ell\ell} > 30 \text{ GeV}$ $350 \leq m_{jj} < 700 \text{ GeV}$ $700 \leq m_{jj} < 1000 \text{ GeV}$ $1000 \leq m_{jj} < 1500 \text{ GeV}$ $m_{jj} \geq 1500 \text{ GeV}$ $m_{jj} \geq 350 \text{ GeV}$ $m_{\ell\ell} \leq 30 \text{ GeV}$ $m_{\ell\ell} > 30 \text{ GeV}$ $N_{\text{jets}} = 0$ $p_{\tau^H} < 200 \text{ GeV}$ $N_{\text{jets}} = 1$ Fail Central Jet Veto
or Outside Lepton Veto $N_{\text{jets}} \geq 2$ $p_{\tau^H} < 200 \text{ GeV}$ $N_{\text{jets}} = 1$ Fail Central Jet Veto
or Outside Lepton Veto $N_{\text{jets}} \geq 2$ $p_{\tau^H} \geq 200 \text{ GeV}$ $p_{\tau^H} < 200 \text{ GeV}$ $N_{\text{jets}} \geq 2$ Pass Central Jet Veto
and Outside Lepton Veto $p_{\tau^H} \geq 200 \text{ GeV}$