Channel	Preselection cuts
$ au_{ m lep} au_{ m lep}$	Exactly two isolated opposite-sign leptons
	Events with $\tau_{\rm had}$ candidates are rejected
	$30~{\rm GeV} < m_{ au au}^{ m vis} < 100~(75)~{\rm GeV}$ for DF (SF) events
	$\Delta \phi_{\ell\ell} < 2.5$
	$E_{\rm T}^{\rm miss} > 20$ (40) GeV for DF (SF) events
	$E_{\rm T}^{\rm miss, HPTO} > 40$ GeV for SF events
	$p_{\rm T}^{\ell_1} + p_{\rm T}^{\ell_2} > 35 \text{ GeV}$
	Events with a b-tagged jet with $p_{\rm T} > 25~{\rm GeV}$ are rejected
	$0.1 < x_{\tau_1}, x_{\tau_2} < 1$
	$m_{\tau\tau}^{\text{coll}} > m_Z - 25 \text{ GeV}$
$ au_{ m lep} au_{ m had}$	Exactly one isolated lepton and one medium τ_{had} candidate with opposite charges
	$m_{ m T} < 70~{ m GeV}$
	Events with a b-tagged jet with $p_T > 30 \text{ GeV}$ are rejected
	One isolated medium and one isolated tight opposite-sign $ au_{ m had}$ -candidate
$ au_{ ext{had}} au_{ ext{had}}$	Events with leptons are vetoed $E_{\rm T}^{\rm miss} > 20~{ m GeV}$
	$E_{\rm T} = 20~{\rm GeV}$ $E_{\rm T}^{\rm miss}$ points between the two visible taus in ϕ , or min[$\Delta\phi(\tau, E_{\rm T}^{\rm miss})$] $<\pi/4$
	$L_{\rm T}$ points between the two visible taus in ϕ , or $\min[\Delta\phi(\tau, L_{\rm T})] < \pi/4$ $0.8 < \Delta R(\tau_{\rm had_1}, \tau_{\rm had_2}) < 2.4$
	$\Delta \eta(\tau_{\mathrm{had}_1}, \tau_{\mathrm{had}_2}) < 2.4$ $\Delta \eta(\tau_{\mathrm{had}_1}, \tau_{\mathrm{had}_2}) < 1.5$
Channel	VBF category selection cuts
Chamier	9 4
$ au_{ m lep} au_{ m lep}$	At least two jets with $p_{\rm T}^{j_1} > 40~{\rm GeV}$ and $p_{\rm T}^{j_2} > 30~{\rm GeV}$
	$\Delta \eta(j_1,j_2) > 2.2$
$ au_{ m lep} au_{ m had}$	At least two jets with $p_{\rm T}^{j_1} > 50 \text{ GeV}$ and $p_{\rm T}^{j_2} > 30 \text{ GeV}$
	$\Delta \eta(j_1, j_2) > 3.0$
	$m_{\tau\tau}^{\text{vis}} > 40 \text{ GeV}$
$ au_{ m had} au_{ m had}$	At least two jets with $p_{\rm T}^{j_1} > 50 \text{ GeV}$ and $p_{\rm T}^{j_2} > 30 \text{ GeV}$
	$p_{\rm T}^{j_2} > 35 \text{ GeV for jets with } \eta > 2.4$
	$\Delta \eta(j_1, j_2) > 2.0$
Channel	Boosted category selection cuts
$ au_{ m lep} au_{ m lep}$	At least one jet with $p_{\rm T} > 40~{\rm GeV}$
All	Failing the VBF selection
	$p_{\mathrm{T}}^{H} > 100 \; \mathrm{GeV}$