Category	Selection	Observables $\vec{x}$ for fitting
Scheme 1		
VBF-1jet	$\mathcal{D}_{\text{1jet}}^{\text{VBF}} > 0.7$	$\mathcal{D}_{\text{bkg}}$
VBF-2jet	$\mathcal{D}_{\text{2jet}}^{\text{VBF}} > 0.5$	$\mathcal{D}_{\text{bkg}}, \mathcal{D}_{\text{2jet}}^{\text{VBF}}, \mathcal{D}_{0-}^{\text{ggH}}, \mathcal{D}_{\text{CP}}^{\text{ggH}}$
VH-hadronic	$\mathcal{D}_{\text{2jet}}^{\text{VH}} > 0.5$	$\mathcal{D}_{\text{bkg}}$
VH-leptonic	see Section **??**	$\mathcal{D}_{\text{bkg}}$
$t\bar{t}$H-hadronic	see Section **??**	$\mathcal{D}_{\text{bkg}}, \mathcal{D}_{0-}^{t\bar{t}H}$
$t\bar{t}$H-leptonic	see Section **??**	$\mathcal{D}_{\text{bkg}}, \mathcal{D}_{0-}^{t\bar{t}H}$
Untagged	none of the above	$\mathcal{D}_{\text{bkg}}$
Scheme 2		
Boosted	$p_{\text{T}}^{4\ell} > 120\,\text{GeV}$	$\mathcal{D}_{\text{bkg}}, p_{\text{T}}^{4\ell}$
VBF-1jet	$\mathcal{D}_{\text{1jet}}^{\text{VBF}} > 0.7$	$\mathcal{D}_{\text{bkg}}, p_{\text{T}}^{4\ell}$
VBF-2jet	$\mathcal{D}_{\text{2jet}}^{\text{VBF}} > 0.5$	$\mathcal{D}_{\text{bkg}}^{\text{EW}}, \mathcal{D}_{0h+}^{\text{VBF+dec}}, \mathcal{D}_{0-}^{\text{VBF+dec}}, \mathcal{D}_{\Lambda 1}^{\text{VBF+dec}}, \mathcal{D}_{\Lambda 1}^{Z\gamma,\text{VBF+dec}}, \mathcal{D}_{\text{int}}^{\text{VBF}}, \mathcal{D}_{\text{CP}}^{\text{VBF}}$
VH-hadronic	$\mathcal{D}_{\text{2jet}}^{\text{VH}} > 0.5$	$\mathcal{D}_{\text{bkg}}^{\text{EW}}, \mathcal{D}_{0h+}^{\text{VH+dec}}, \mathcal{D}_{0-}^{\text{VH+dec}}, \mathcal{D}_{\Lambda 1}^{\text{VH+dec}}, \mathcal{D}_{\Lambda 1}^{Z\gamma,\text{VH+dec}}, \mathcal{D}_{\text{int}}^{\text{VH}}, \mathcal{D}_{\text{CP}}^{\text{VH}}$
VH-leptonic	see Section **??**	$\mathcal{D}_{\text{bkg}}, p_{\text{T}}^{4\ell}$
Untagged	none of the above	$\mathcal{D}_{\text{bkg}}, \mathcal{D}_{0h+}^{\text{dec}}, \mathcal{D}_{0-}^{\text{dec}}, \mathcal{D}_{\Lambda 1}^{\text{dec}}, \mathcal{D}_{\Lambda 1}^{Z\gamma,\text{dec}}, \mathcal{D}_{\text{int}}^{\text{dec}}, \mathcal{D}_{\text{CP}}^{\text{dec}}$