

Observable	$1\ell + 2\tau_h$	$2\ell_{ss}$	3ℓ	$3\ell + 1\tau_h$
$\Delta R(\ell_1, j)$	—	✓	✓	✓
$\Delta R(\ell_2, j)$	—	✓	✓	✓
$\langle \Delta R_{jj} \rangle$	✓	—	—	$\sqrt{2}$
$\Delta R_{\tau\tau}$	✓	—	—	—
$\max(\eta^{\ell_1} , \eta^{\ell_2})$	—	✓	✓	✓
H_T^{miss}	✓	—	—	$\sqrt{2}$
N_j	✓	✓	✓	✓
N_b	✓	—	—	—
$m_{\tau\tau}^{\text{vis}}$	✓	—	—	—
$m_T^{\ell_1}$	—	✓	✓	✓
$p_T^{\ell_1}$	—	$\sqrt{1}$	$\sqrt{1}$	$\sqrt{1}$
$p_T^{\ell_2}$	—	$\sqrt{1}$	-	-
$p_T^{\ell_3}$	—	—	$\sqrt{1}$	$\sqrt{1}$
$p_T^{\tau_1}$	✓	—	—	—
$p_T^{\tau_2}$	✓	—	—	—
$\text{LR}(3\ell)$	—	—	$\sqrt{1}$	—
$\text{MVA}_{\text{thad}}^{\text{max}}$	—	$\sqrt{2}$	—	—
$\text{MVA}_{\text{Hj}}^{\text{max}}$	—	$\sqrt{1}$	—	—

¹ Used only in BDT that separates $t\bar{t}H$ signal from $t\bar{t}V$ background.

² Used only in BDT that separates $t\bar{t}H$ signal from $t\bar{t}+\text{jets}$ background.