

Distribution	χ^2/dof	p-value	χ^2/dof	p-value	χ^2/dof	p-value
	POWHEG+P8 with unc.		POWHEG+P8		NNLO QCD+NLO EW	
$p_T(\mathbf{t}_{\text{high}})$	16.4/12	0.173	27.4/12	< 0.01	36.9/12	< 0.01
$p_T(\mathbf{t}_{\text{low}})$	22.4/12	0.033	42.7/12	< 0.01	77.2/12	< 0.01
$p_T(\mathbf{t}_h)$	16.4/12	0.175	24.0/12	0.020	5.13/12	0.953
$ y(\mathbf{t}_h) $	1.28/11	1.000	1.41/11	1.000	2.27/11	0.997
$p_T(\mathbf{t}_\ell)$	22.2/12	0.035	38.3/12	< 0.01	9.56/12	0.654
$ y(\mathbf{t}_\ell) $	2.04/11	0.998	2.42/11	0.996	8.14/11	0.700
$M(\mathbf{t}\bar{\mathbf{t}})$	7.67/10	0.661	11.6/10	0.314	24.7/10	< 0.01
$ y(\mathbf{t}\bar{\mathbf{t}}) $	3.98/10	0.948	5.66/10	0.843	9.26/10	0.507
$p_T(\mathbf{t}\bar{\mathbf{t}})$	5.38/8	0.717	46.5/8	< 0.01		
$ y(\mathbf{t}_h) $ vs. $p_T(\mathbf{t}_h)$	23.6/44	0.995	41.6/44	0.577		
$M(\mathbf{t}\bar{\mathbf{t}})$ vs. $ y(\mathbf{t}\bar{\mathbf{t}}) $	20.6/35	0.975	35.0/35	0.469		
$M(\mathbf{t}\bar{\mathbf{t}})$ vs. Δy	24.9/40	0.971	35.1/40	0.689		
$p_T(\mathbf{t}_h)$ vs. $M(\mathbf{t}\bar{\mathbf{t}})$	38.9/32	0.188	59.3/32	< 0.01		
	POWHEG+H++		MG5_aMC@NLO+P8 FxFx		—	
$p_T(\mathbf{t}_{\text{high}})$	6.60/12	0.883	16.3/12	0.180		
$p_T(\mathbf{t}_{\text{low}})$	28.5/12	< 0.01	15.3/12	0.225		
$p_T(\mathbf{t}_h)$	5.09/12	0.955	11.0/12	0.530		
$ y(\mathbf{t}_h) $	2.39/11	0.997	2.21/11	0.998		
$p_T(\mathbf{t}_\ell)$	6.55/12	0.886	17.4/12	0.136		
$ y(\mathbf{t}_\ell) $	2.54/11	0.995	3.99/11	0.970		
$M(\mathbf{t}\bar{\mathbf{t}})$	4.16/10	0.940	12.1/10	0.275		
$ y(\mathbf{t}\bar{\mathbf{t}}) $	11.9/10	0.292	8.92/10	0.540		
$p_T(\mathbf{t}\bar{\mathbf{t}})$	55.0/8	< 0.01	26.8/8	< 0.01		
$ y(\mathbf{t}_h) $ vs. $p_T(\mathbf{t}_h)$	57.9/44	0.077	40.2/44	0.634		
$M(\mathbf{t}\bar{\mathbf{t}})$ vs. $ y(\mathbf{t}\bar{\mathbf{t}}) $	40.8/35	0.229	58.7/35	< 0.01		
$p_T(\mathbf{t}_h)$ vs. $M(\mathbf{t}\bar{\mathbf{t}})$	93.0/32	< 0.01	166/32	< 0.01		