

Distribution	χ^2/dof	p -value	χ^2/dof	p -value	χ^2/dof	p -value
	POWHEG+P8 with unc.		SHERPA with unc.		POWHEG+P8	
$p_T(\mathbf{t}_h)$	15.9/12	0.197	7.21/12	0.844	29.5/12	<0.01
$ \mathbf{y}(\mathbf{t}_h) $	1.96/11	0.999	1.48/11	1.000	2.23/11	0.997
$p_T(\mathbf{t}_\ell)$	27.0/12	<0.01	22.3/12	0.034	80.2/12	<0.01
$ \mathbf{y}(\mathbf{t}_\ell) $	4.55/11	0.951	5.07/11	0.928	4.99/11	0.932
$M(\mathbf{t}\bar{\mathbf{t}})$	5.83/10	0.829	2.40/10	0.992	9.07/10	0.525
$p_T(\mathbf{t}\bar{\mathbf{t}})$	4.96/8	0.761	28.9/8	<0.01	41.2/8	<0.01
$ \mathbf{y}(\mathbf{t}\bar{\mathbf{t}}) $	5.93/10	0.821	6.63/10	0.760	8.61/10	0.570
$ \mathbf{y}(\mathbf{t}_h) $ vs. $p_T(\mathbf{t}_h)$	35.7/44	0.810	29.6/44	0.953	64.1/44	0.025
$M(\mathbf{t}\bar{\mathbf{t}})$ vs. $ \mathbf{y}(\mathbf{t}\bar{\mathbf{t}}) $	25.9/35	0.867	24.2/35	0.914	56.2/35	0.013
$p_T(\mathbf{t}_h)$ vs. $M(\mathbf{t}\bar{\mathbf{t}})$	47.4/32	0.039	57.2/32	<0.01	73.2/32	<0.01
	SHERPA		POWHEG+H++		MG5_aMC@NLO+P8 FxFx	
$p_T(\mathbf{t}_h)$	13.5/12	0.335	32.1/12	<0.01	17.4/12	0.137
$ \mathbf{y}(\mathbf{t}_h) $	2.32/11	0.997	4.89/11	0.936	3.16/11	0.988
$p_T(\mathbf{t}_\ell)$	39.4/12	<0.01	21.8/12	0.040	47.7/12	<0.01
$ \mathbf{y}(\mathbf{t}_\ell) $	5.54/11	0.902	4.04/11	0.969	7.22/11	0.781
$M(\mathbf{t}\bar{\mathbf{t}})$	2.86/10	0.985	52.8/10	<0.01	5.45/10	0.859
$p_T(\mathbf{t}\bar{\mathbf{t}})$	68.7/8	<0.01	46.8/8	<0.01	21.3/8	<0.01
$ \mathbf{y}(\mathbf{t}\bar{\mathbf{t}}) $	12.1/10	0.276	18.6/10	0.046	8.13/10	0.616
$ \mathbf{y}(\mathbf{t}_h) $ vs. $p_T(\mathbf{t}_h)$	48.3/44	0.305	116/44	<0.01	44.9/44	0.434
$M(\mathbf{t}\bar{\mathbf{t}})$ vs. $ \mathbf{y}(\mathbf{t}\bar{\mathbf{t}}) $	41.5/35	0.208	219/35	<0.01	55.7/35	0.014
$p_T(\mathbf{t}_h)$ vs. $M(\mathbf{t}\bar{\mathbf{t}})$	66.5/32	<0.01	152/32	<0.01	48.9/32	0.028