

Distribution	χ^2/dof	p-value	χ^2/dof	p-value	χ^2/dof	p-value
	POWHEG+P8		POWHEG+H++		MG5_aMC@NLO+P8 MLM	
	Order: NLO		Order: NLO		Order: LO, up to 3 add. partons	
$p_T(\mathbf{t}_h)$	12.0/9	0.216	9.43/9	0.398	20.5/9	0.015
$ y(\mathbf{t}_h) $	5.02/7	0.657	5.59/7	0.589	5.81/7	0.562
$p_T(\mathbf{t}_\ell)$	18.1/9	0.034	10.9/9	0.285	48.5/9	<0.01
$ y(\mathbf{t}_\ell) $	13.2/7	0.067	15.2/7	0.034	14.0/7	0.051
$M(\mathbf{t}\bar{\mathbf{t}})$	6.08/8	0.639	11.6/8	0.172	48.1/8	<0.01
$p_T(\mathbf{t}\bar{\mathbf{t}})$	1.35/5	0.930	5.53/5	0.354	18.3/5	<0.01
$ y(\mathbf{t}\bar{\mathbf{t}}) $	2.35/6	0.885	2.43/6	0.876	5.85/6	0.440
Additional jets	9.55/5	0.089	6.47/5	0.263	5.71/5	0.335
Additional jets vs. $p_T(\mathbf{t}\bar{\mathbf{t}})$	90.6/20	<0.01	144/20	<0.01	145/20	<0.01
Additional jets vs. $p_T(\mathbf{t}_h)$	108/36	<0.01	49.5/36	0.067	84.2/36	<0.01
$ y(\mathbf{t}_h) $ vs. $p_T(\mathbf{t}_h)$	59.4/36	<0.01	57.3/36	0.014	67.2/36	<0.01
$M(\mathbf{t}\bar{\mathbf{t}})$ vs. $ y(\mathbf{t}\bar{\mathbf{t}}) $	20.4/24	0.674	19.6/24	0.719	51.5/24	<0.01
$p_T(\mathbf{t}\bar{\mathbf{t}})$ vs. $M(\mathbf{t}\bar{\mathbf{t}})$	15.8/32	0.993	27.8/32	0.679	109/32	<0.01
	MG5_aMC@NLO+P8		MG5_aMC@NLO+H++		MG5_aMC@NLO+P8 FxFx	
	Order: NLO		Order: NLO		Order: NLO, up to 2 add. partons	
$p_T(\mathbf{t}_h)$	11.6/9	0.240	16.8/9	0.052	10.6/9	0.301
$ y(\mathbf{t}_h) $	6.91/7	0.438	6.85/7	0.444	5.23/7	0.632
$p_T(\mathbf{t}_\ell)$	18.7/9	0.028	32.4/9	<0.01	14.6/9	0.102
$ y(\mathbf{t}_\ell) $	19.1/7	<0.01	12.7/7	0.079	18.7/7	<0.01
$M(\mathbf{t}\bar{\mathbf{t}})$	11.3/8	0.186	6.59/8	0.582	29.8/8	<0.01
$p_T(\mathbf{t}\bar{\mathbf{t}})$	40.0/5	<0.01	25.8/5	<0.01	19.7/5	<0.01
$ y(\mathbf{t}\bar{\mathbf{t}}) $	3.01/6	0.808	2.52/6	0.866	2.86/6	0.826
Additional jets	19.9/5	<0.01	4.37/5	0.497	6.78/5	0.237
Additional jets vs. $p_T(\mathbf{t}\bar{\mathbf{t}})$	390/20	<0.01	294/20	<0.01	127/20	<0.01
Additional jets vs. $p_T(\mathbf{t}_h)$	112/36	<0.01	49.0/36	0.072	56.5/36	0.016
$ y(\mathbf{t}_h) $ vs. $p_T(\mathbf{t}_h)$	91.8/36	<0.01	123/36	<0.01	53.1/36	0.033
$M(\mathbf{t}\bar{\mathbf{t}})$ vs. $ y(\mathbf{t}\bar{\mathbf{t}}) $	29.8/24	0.192	19.2/24	0.741	38.7/24	0.030
$p_T(\mathbf{t}\bar{\mathbf{t}})$ vs. $M(\mathbf{t}\bar{\mathbf{t}})$	275/32	<0.01	78.2/32	<0.01	104/32	<0.01
	appr. NNLO		appr. NNNLO		NLO+NNLL'	
$p_T(\mathbf{t}_h)$	25.3/9	<0.01	69.1/9	<0.01	9.68/9	0.377
$ y(\mathbf{t}_h) $	8.90/7	0.260	4.78/7	0.686	—	—
$p_T(\mathbf{t}_\ell)$	23.1/9	<0.01	189/9	<0.01	4.41/9	0.882
$ y(\mathbf{t}_\ell) $	6.40/7	0.494	7.28/7	0.400	—	—
$M(\mathbf{t}\bar{\mathbf{t}})$	—	—	—	—	12.2/8	0.143
	NNLO					
$p_T(\mathbf{t}_h)$	9.40/9	0.402				
$ y(\mathbf{t}_h) $	4.08/7	0.770				
$p_T(\mathbf{t}_\ell)$	10.8/9	0.291				
$ y(\mathbf{t}_\ell) $	10.4/7	0.168				
$M(\mathbf{t}\bar{\mathbf{t}})$	11.2/8	0.190				
$p_T(\mathbf{t}\bar{\mathbf{t}})$	4.61/5	0.466				
$ y(\mathbf{t}\bar{\mathbf{t}}) $	2.26/6	0.894				