H_{T} [GeV]	n_{jet}	S_{T} [GeV]	T5q^{4}1.2/1/0.8	B (only W, tt)	FOM
(500, -1)	(8, -1)	(350, -1)	1.216 ± 0.061	0.211 ± 0.149	2.648 ± 0.449
(500, -1)	(6, -1)	(350, -1)	3.356 ± 0.101	2.603 ± 0.508	2.08 ± 0.333
(500, -1)	(6, -1)	(450, -1)	1.863 ± 0.075	0.857 ± 0.278	2.013 ± 0.313
(500, 750)	(6, -1)	(350, -1)	1.59 ± 0.07	0.81 ± 0.277	1.767 ± 0.283
(500, -1)	(6, -1)	(250, -1)	5.131 ± 0.125	11.26 ± 1.089	1.529 ± 0.251
(500, -1)	(8, -1)	(250, -1)	1.745 ± 0.073	1.333 ± 0.406	1.511 ± 0.273
(750, -1)	(6, -1)	(450, -1)	1.161 ± 0.059	0.668 ± 0.26	1.421 ± 0.237
(750, -1)	(6, -1)	(350, -1)	1.766 ± 0.073	1.793 ± 0.425	1.319 ± 0.216
(750, -1)	(8, -1)	(250, -1)	1.179 ± 0.06	0.877 ± 0.323	1.259 ± 0.226
(500, 750)	(6, -1)	(250, -1)	2.766 ± 0.092	5.279 ± 0.78	1.204 ± 0.208
(500, -1)	(6, -1)	(350, 450)	1.493 ± 0.067	1.746 ± 0.425	1.129 ± 0.189
(750, -1)	(6, -1)	(250, -1)	2.365 ± 0.085	5.981 ± 0.76	0.967 ± 0.154
(750, 1000)	(6, -1)	(250, -1)	1.353 ± 0.064	2.848 ± 0.54	0.802 ± 0.134
(500, -1)	(6, -1)	(250, 350)	1.775 ± 0.073	8.657 ± 0.964	0.603 ± 0.102
(1000, -1)	(6, -1)	(250, -1)	1.012 ± 0.055	3.133 ± 0.536	0.572 ± 0.092
(500, 750)	(6, -1)	(250, 350)	1.176 ± 0.06	4.469 ± 0.729	0.556 ± 0.1
(500, -1)	(5, 5)	(250, -1)	1.246 ± 0.062	18.524 ± 1.4	0.29 ± 0.049

Tab. 1: T5q^{4}1.2/1/0.8

$t\bar{t}$ + jets	Y(0b)	Y(1b)	R_{CS} (0b)	R_{CS} (1b)	Norm
dihadronic	0.0	0.14	nan	0.0	1.0
di τ	1.26	3.08	0.8	0.1579	2.44
$W \to \tau + \nu \to$ had. $+ 2\nu \mid W \to$ had.	0.56	0.56	0.0	0.0	1.0
$W \to \tau + \nu \to$ had. $+ 2\nu \mid W \to e/\mu + \nu$	10.08	20.17	0.3333	0.3714	2.0
$W \to \tau + \nu \to e/\mu + 3\nu \mid W \to$ had.	8.26	13.87	0.0	0.0	1.68
$W \to \tau + \nu \to e/\mu + 3\nu \mid W \to e/\mu + \nu$	4.34	12.33	0.4762	0.2941	2.84
dileptonic	11.77	33.05	0.2727	0.3039	2.81
single lep. (e/μ)	79.84	129.98	0.0364	0.0311	1.63
total	116.11	213.18	0.0922	0.1053	1.84

Tab. 2: Yields and Rcs, $t\bar{t}$ Jets, inclusive, njets=2

Results

W+Jets	Y(0b)	Y(1b)	R_{CS} (0b)	R_{CS} (1b)	Norm
$W \to \tau + \nu \to$ had. $+ 2\nu$	6.01	0.88	0.0129	0.0	0.15
$W \to \tau + \nu \to e/\mu + 3\nu$	150.79	16.95	0.012	0.01	0.11
single lep. (e/μ)	1484.93	166.05	0.0518	0.0597	0.11
total	1641.01	183.88	0.0479	0.0547	0.11

Tab. 3: ABCD

W+Jets	Y(0b)	Y(1b)	R_{CS} (0b)	R_{CS} (1b)	Norm
$W \to \tau + \nu \to$ had. $+ 2\nu$	6.7	1.39	0.0228	0.043	0.21
$W \to \tau + \nu \to e/\mu + 3\nu$	171.22	34.51	0.0125	0.0162	0.2
single lep. (e/μ)	1763.58	369.38	0.0539	0.061	0.21
total	1941.11	405.29	0.05	0.057	0.21

Tab. 4: W+jets, inclusive, njets=4

W+Jets	Y(0b)	Y(1b)	R_{CS} (0b)	R_{CS} (1b)	Norm
$W \to \tau + \nu \to$ had. $+ 2\nu$	3.56	1.44	0.0853	0.0414	0.41
$W \to \tau + \nu \to e/\mu + 3\nu$	87.89	22.92	0.0127	0.0189	0.26
single lep. (e/μ)	933.44	239.61	0.0546	0.0581	0.26
total	1025.08	263.98	0.051	0.0545	0.26

Tab. 5: W+jets, inclusive, njets=5

W+Jets	Y(0b)	Y(1b)	R_{CS} (0b)	R_{CS} (1b)	Norm
$W \to \tau + \nu \to$ had. $+ 2\nu$	2.22	0.57	0.0944	0.0345	0.26
$W \to \tau + \nu \to e/\mu + 3\nu$	48.13	15.16	0.0175	0.0102	0.32
single lep. (e/μ)	511.57	170.42	0.0567	0.0664	0.33
total	561.93	186.16	0.0534	0.0615	0.33

Tab. 6: W+Jets, inclusive, njets$\geq$ 6

$t\bar{t}+$jets	Y(0b)	Y(1b)	R_{CS} (0b)	R_{CS} (1b)	Norm
dihadronic	0.0	0.14	nan	0.0	1.0
di τ	1.26	3.08	0.8	0.1579	2.44
$W \to \tau + \nu \to$ had. $+ 2\nu \mid W \to$ had.	0.56	0.56	0.0	0.0	1.0
$W \to \tau + \nu \to$ had. $+ 2\nu \mid W \to e/\mu + \nu$	10.08	20.17	0.3333	0.3714	2.0
$W \to \tau + \nu \to e/\mu + 3\nu \mid W \to e/\mu + \nu$	4.34	12.33	0.4762	0.2941	2.84
$W \to \tau + \nu \to e/\mu + 3\nu \mid W \to$ had.	8.26	13.87	0.0	0.0	1.68
dileptonic	11.77	33.05	0.2727	0.3039	2.81
single lep. (e/μ)	79.84	129.98	0.0364	0.0311	1.63
total	116.11	213.18	0.0922	0.1053	1.84

Tab. 7: $t\bar{t}+$jets, inclusive, njets=2

$t\bar{t}+$jets	Y(0b)	Y(1b)	R_{CS} (0b)	R_{CS} (1b)	Norm
dihadronic	0.98	0.7	0.0	0.0	0.71
di τ	4.34	12.47	0.24	0.2535	2.87
$W \to \tau + \nu \to$ had. $+ 2\nu \mid W \to$ had.	1.26	2.94	0.0	0.1053	2.33
$W \to \tau + \nu \to$ had. $+ 2\nu \mid W \to e/\mu + \nu$	43.84	114.57	0.4905	0.4607	2.61
$W \to \tau + \nu \to e/\mu + 3\nu \mid W \to e/\mu + \nu$	14.15	51.54	0.4429	0.4839	3.64
$W \to \tau + \nu \to e/\mu + 3\nu \mid W \to$ had.	39.78	84.74	0.0107	0.01	2.13
dileptonic	41.88	117.37	0.323	0.3626	2.8
single lep. (e/μ)	410.94	886.61	0.0426	0.0456	2.16
total	557.17	1270.94	0.0923	0.1105	2.28

Tab. 8: , inclusive, njets=3

$t\bar{t}+$jets	Y(0b)	Y(1b)	R_{CS} (0b)	R_{CS} (1b)	Norm
dihadronic	1.68	5.04	0.0	0.0	3.0
di τ	8.96	21.43	0.28	0.319	2.39
$W \to \tau + \nu \to$ had. $+ 2\nu \mid W \to$ had.	1.82	7.84	0.0	0.098	4.31
$W \to \tau + \nu \to$ had. $+ 2\nu \mid W \to e/\mu + \nu$	72.13	227.74	0.3881	0.5083	3.16
$W \to \tau + \nu \to e/\mu + 3\nu \mid W \to e/\mu + \nu$	22.27	69.89	0.4455	0.4548	3.14
$W \to \tau + \nu \to e/\mu + 3\nu \mid W \to$ had.	84.74	201.83	0.0134	0.0169	2.38
dileptonic	52.94	173.12	0.3897	0.3888	3.27
single lep. (e/μ)	902.29	2368.84	0.0559	0.0599	2.63
total	1146.82	3075.73	0.088	0.1042	2.68

Tab. 9: $t\bar{t}+$jets, inclusive, njets=4

$t\bar{t}$ + jets	Y(0b)	Y(1b)	R_{CS} (0b)	R_{CS} (1b)	Norm
dihadronic	3.36	7.42	0.0909	0.0392	2.21
di τ	7.14	22.13	0.3421	0.4495	3.1
$W \to \tau + \nu \to$ had. $+ 2\nu \mid W \to$ had.	2.66	9.1	0.1176	0.1017	3.42
$W \to \tau + \nu \to$ had. $+ 2\nu \mid W \to e/\mu + \nu$	72.83	226.34	0.4365	0.5005	3.11
$W \to \tau + \nu \to e/\mu + 3\nu \mid W \to e/\mu + \nu$	15.41	59.39	0.5942	0.457	3.85
$W \to \tau + \nu \to e/\mu + 3\nu \mid W \to$ had.	88.94	262.9	0.0095	0.014	2.96
dileptonic	47.34	156.17	0.4083	0.4222	3.3
single lep. (e/μ)	1022.74	3076.97	0.0644	0.0715	3.01
total	1260.42	3820.43	0.0925	0.1032	3.03

Tab. 10: $t\bar{t}$ + jets, inclusive, njets=5

$t\bar{t}$ + jets	Y(0b)	Y(1b)	R_{CS} (0b)	R_{CS} (1b)	Norm
dihadronic	8.82	19.89	0.05	0.0441	2.25
di τ	7.98	24.23	0.3256	0.4298	3.04
$W \to \tau + \nu \to$ had. $+ 2\nu \mid W \to$ had.	4.9	13.73	0.25	0.1529	2.8
$W \to \tau + \nu \to$ had. $+ 2\nu \mid W \to e/\mu + \nu$	73.39	256.88	0.5145	0.4959	3.5
$W \to \tau + \nu \to e/\mu + 3\nu \mid W \to e/\mu + \nu$	17.65	66.81	0.3263	0.4281	3.79
$W \to \tau + \nu \to e/\mu + 3\nu \mid W \to$ had.	116.53	359.54	0.0134	0.0211	3.09
dileptonic	47.9	153.23	0.425	0.4044	3.2
single lep. (e/μ)	1303.96	4380.26	0.0736	0.0779	3.36
total	1581.14	5274.56	0.0955	0.1009	3.34

Tab. 11: $t\bar{t}$ + jets, inclusive, njets$\geq$ 6

$t\bar{t}$ + jets	Y(0b)	Y(1b)	R_{CS} (0b)	R_{CS} (1b)	Norm
dihadronic	0.0	0.0	nan	nan	1.0
di τ	0.28	0.98	0.0	0.1667	3.5
$W \to \tau + \nu \to$ had. $+ 2\nu \mid W \to$ had.	0.28	0.56	0.0	0.0	2.0
$W \to \tau + \nu \to$ had. $+ 2\nu \mid W \to e/\mu + \nu$	5.04	8.54	0.3846	0.22	1.69
$W \to \tau + \nu \to e/\mu + 3\nu \mid W \to e/\mu + \nu$	2.1	6.44	0.5	0.2432	3.07
$W \to \tau + \nu \to e/\mu + 3\nu \mid W \to$ had.	3.92	7.14	0.0	0.0	1.82
dileptonic	5.32	13.31	0.1515	0.2025	2.5
single lep. (e/μ)	36.7	57.15	0.0077	0.0	1.56
total	53.64	94.12	0.0609	0.0583	1.75

Tab. 12: $t\bar{t}$ + jets, tighter, njets=2

$t\bar{t}+$jets	Y(0b)	Y(1b)	R_{CS} (0b)	R_{CS} (1b)	Norm
dihadronic	0.42	0.14	0.0	0.0	0.33
di τ	2.24	4.76	0.0667	0.2143	2.12
$W \to \tau + \nu \to$ had. $+ 2\nu \mid W \to$ had.	0.28	1.4	0.0	0.1111	5.0
$W \to \tau + \nu \to$ had. $+ 2\nu \mid W \to e/\mu + \nu$	17.65	43.56	0.3696	0.4952	2.47
$W \to \tau + \nu \to e/\mu + 3\nu \mid W \to e/\mu + \nu$	4.9	20.45	0.2963	0.4747	4.17
$W \to \tau + \nu \to e/\mu + 3\nu \mid W \to$ had.	14.57	33.19	0.0	0.0	2.28
dileptonic	15.55	39.64	0.3059	0.3286	2.55
single lep. (e/μ)	144.55	288.25	0.0088	0.0059	1.99
total	200.15	431.39	0.0577	0.0841	2.16

Tab. 13: $t\bar{t}+$jets, tighter, njets=3

$t\bar{t}+$jets	Y(0b)	Y(1b)	R_{CS} (0b)	R_{CS} (1b)	Norm
dihadronic	0.84	1.12	0.0	0.0	1.33
di τ	3.5	6.72	0.087	0.1707	1.92
$W \to \tau + \nu \to$ had. $+ 2\nu \mid W \to$ had.	0.42	2.66	0.0	0.1176	6.33
$W \to \tau + \nu \to$ had. $+ 2\nu \mid W \to e/\mu + \nu$	24.79	66.53	0.3409	0.5224	2.68
$W \to \tau + \nu \to e/\mu + 3\nu \mid W \to e/\mu + \nu$	7.42	20.03	0.2927	0.5053	2.7
$W \to \tau + \nu \to e/\mu + 3\nu \mid W \to$ had.	29.97	66.67	0.0	0.0	2.22
dileptonic	16.67	50.0	0.3077	0.3891	3.0
single lep. (e/μ)	248.05	647.37	0.0057	0.0052	2.61
total	331.67	861.11	0.0427	0.0593	2.6

Tab. 14: $t\bar{t}+$jets, tighter, njets=4

$t\bar{t}+$jets	Y(0b)	Y(1b)	R_{CS} (0b)	R_{CS} (1b)	Norm
dihadronic	0.7	1.4	0.0	0.0	2.0
di τ	2.38	6.3	0.4167	0.3636	2.65
$W \to \tau + \nu \to$ had. $+ 2\nu \mid W \to$ had.	0.42	1.82	0.0	0.0833	4.33
$W \to \tau + \nu \to$ had. $+ 2\nu \mid W \to e/\mu + \nu$	20.31	61.35	0.5426	0.5587	3.02
$W \to \tau + \nu \to e/\mu + 3\nu \mid W \to e/\mu + \nu$	5.18	14.99	0.3704	0.4267	2.89
$W \to \tau + \nu \to e/\mu + 3\nu \mid W \to$ had.	24.93	72.69	0.0	0.0	2.92
dileptonic	13.45	39.22	0.3521	0.3592	2.92
single lep. (e/μ)	241.61	662.92	0.0076	0.0053	2.74
total	308.98	860.69	0.0495	0.0515	2.79

Tab. 15: $t\bar{t}+$jets, tighter, njets=5

$t\bar{t}$ + jets	Y(0b)	Y(1b)	R_{CS} (0b)	R_{CS} (1b)	Norm
dihadronic	0.98	2.38	0.1667	0.0	2.43
di τ	1.4	4.76	0.0	0.4783	3.4
$W \to \tau + \nu \to$ had. $+ 2\nu \mid W \to$ had.	0.7	2.38	0.0	0.2143	3.4
$W \to \tau + \nu \to$ had. $+ 2\nu \mid W \to e/\mu + \nu$	13.03	55.18	0.55	0.5697	4.24
$W \to \tau + \nu \to e/\mu + 3\nu \mid W \to e/\mu + \nu$	4.2	14.29	0.4286	0.3784	3.4
$W \to \tau + \nu \to e/\mu + 3\nu \mid W \to$ had.	23.11	60.23	0.0	0.0023	2.61
dileptonic	12.19	25.63	0.3594	0.4758	2.1
single lep. (e/μ)	200.99	638.41	0.0056	0.0057	3.18
total	256.6	803.26	0.0421	0.0496	3.13

Tab. 16: $t\bar{t}$ + jets, tighter, njets≤ 6