

$n_{\text{jet}}$	$t\bar{t}$ + jets	0b	1b	1b/0b	0b( $\Delta\Phi < 0$ )	0b( $\Delta\Phi > 0$ )	1b( $\Delta\Phi < 0$ )	1b( $\Delta\Phi > 0$ )	$R_{CS}$ (0b)	$R_{CS}$ (1b)
[2, 3]	dihadronic	0.98	0.84	0.86	0.98	0.0	0.84	0.0	0.0 $\pm$ 0.0	0.0 $\pm$ 0.0
	di $\tau$	5.6	15.55	2.77	4.2	1.4	12.61	2.94	0.333 $\pm$ 0.122	0.233 $\pm$ 0.057
	$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu$   $W \rightarrow \text{had.}$	1.82	3.5	1.92	1.82	0.0	3.22	0.28	0.0 $\pm$ 0.0	0.087 $\pm$ 0.064
	$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu$   $W \rightarrow e/\mu + \nu$	53.92	134.74	2.5	36.98	16.95	93.14	41.6	0.458 $\pm$ 0.05	0.447 $\pm$ 0.031
	$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu$   $W \rightarrow e/\mu + \nu$	18.49	63.87	3.45	12.75	5.74	44.26	19.61	0.451 $\pm$ 0.085	0.443 $\pm$ 0.045
	$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu$   $W \rightarrow \text{had.}$	48.04	98.6	2.05	47.62	0.42	97.76	0.84	0.009 $\pm$ 0.005	0.009 $\pm$ 0.004
	dileptonic	53.64	150.43	2.8	40.9	12.75	111.49	38.94	0.312 $\pm$ 0.037	0.349 $\pm$ 0.024
	single lep. ( $e/\mu$ )	490.8	1016.64	2.07	471.19	19.61	974.06	42.58	0.042 $\pm$ 0.004	0.044 $\pm$ 0.003
	total	673.31	1484.06	2.2	616.45	56.87	1337.28	146.78	0.092 $\pm$ 0.005	0.11 $\pm$ 0.004
[4, 5]	dihadronic	5.04	12.47	2.47	4.76	0.28	12.19	0.28	0.059 $\pm$ 0.043	0.023 $\pm$ 0.016
	di $\tau$	16.11	43.56	2.7	12.33	3.78	31.51	12.05	0.307 $\pm$ 0.068	0.382 $\pm$ 0.048
	$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu$   $W \rightarrow \text{had.}$	4.48	16.95	3.78	4.2	0.28	15.41	1.54	0.067 $\pm$ 0.049	0.1 $\pm$ 0.032
	$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu$   $W \rightarrow e/\mu + \nu$	144.96	454.08	3.13	102.67	42.3	301.84	152.25	0.412 $\pm$ 0.028	0.504 $\pm$ 0.019
	$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu$   $W \rightarrow e/\mu + \nu$	37.68	129.28	3.43	25.07	12.61	88.8	40.48	0.503 $\pm$ 0.065	0.456 $\pm$ 0.032
	$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu$   $W \rightarrow \text{had.}$	173.68	464.74	2.68	171.72	1.96	457.74	7.0	0.011 $\pm$ 0.003	0.015 $\pm$ 0.002
	dileptonic	100.29	329.28	3.28	71.71	28.57	234.46	94.82	0.398 $\pm$ 0.033	0.404 $\pm$ 0.018
	single lep. ( $e/\mu$ )	1924.82	5446.98	2.83	1815.15	109.67	5107.74	339.24	0.06 $\pm$ 0.002	0.066 $\pm$ 0.001
	total	2407.06	6897.96	2.87	2207.61	199.45	6250.27	647.68	0.09 $\pm$ 0.002	0.104 $\pm$ 0.002
[6, 7]	dihadronic	6.16	15.27	2.48	5.74	0.42	14.57	0.7	0.073 $\pm$ 0.044	0.048 $\pm$ 0.022
	di $\tau$	6.72	19.89	2.96	5.18	1.54	13.73	6.16	0.297 $\pm$ 0.102	0.449 $\pm$ 0.081
	$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu$   $W \rightarrow \text{had.}$	4.34	11.49	2.65	3.5	0.84	10.22	1.26	0.24 $\pm$ 0.109	0.123 $\pm$ 0.044
	$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu$   $W \rightarrow e/\mu + \nu$	64.57	218.5	3.38	42.02	22.55	144.96	73.53	0.537 $\pm$ 0.052	0.507 $\pm$ 0.027
	$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu$   $W \rightarrow e/\mu + \nu$	16.11	59.11	3.67	12.19	3.92	41.46	17.65	0.322 $\pm$ 0.07	0.426 $\pm$ 0.045
	$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu$   $W \rightarrow \text{had.}$	97.62	298.61	3.06	96.22	1.4	292.17	6.44	0.015 $\pm$ 0.005	0.022 $\pm$ 0.003
	dileptonic	42.86	134.46	3.14	30.25	12.61	96.64	37.82	0.417 $\pm$ 0.052	0.391 $\pm$ 0.028
	single lep. ( $e/\mu$ )	1096.76	3666.85	3.34	1023.37	73.39	3406.2	260.65	0.072 $\pm$ 0.003	0.077 $\pm$ 0.002
	total	1335.08	4424.51	3.31	1218.41	116.67	4020.28	404.23	0.096 $\pm$ 0.003	0.101 $\pm$ 0.002
$\geq 8$	dihadronic	2.66	4.62	1.74	2.66	0.0	4.48	0.14	0.0 $\pm$ 0.0	0.031 $\pm$ 0.032
	di $\tau$	1.26	4.34	3.44	0.84	0.42	3.22	1.12	0.5 $\pm$ 0.354	0.348 $\pm$ 0.143
	$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu$   $W \rightarrow \text{had.}$	0.56	2.24	4.0	0.42	0.14	1.68	0.56	0.333 $\pm$ 0.385	0.333 $\pm$ 0.192
	$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu$   $W \rightarrow e/\mu + \nu$	8.82	38.38	4.35	6.44	2.38	26.75	11.63	0.37 $\pm$ 0.105	0.435 $\pm$ 0.057
	$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu$   $W \rightarrow e/\mu + \nu$	1.54	7.7	5.0	1.12	0.42	5.32	2.38	0.375 $\pm$ 0.254	0.447 $\pm$ 0.131
	$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu$   $W \rightarrow \text{had.}$	18.91	60.93	3.22	18.77	0.14	59.95	0.98	0.007 $\pm$ 0.007	0.016 $\pm$ 0.006
	dileptonic	5.04	18.77	3.72	3.36	1.68	12.47	6.3	0.5 $\pm$ 0.177	0.506 $\pm$ 0.092
	single lep. ( $e/\mu$ )	207.29	713.93	3.44	191.32	15.97	658.05	55.89	0.083 $\pm$ 0.008	0.085 $\pm$ 0.004
	total	246.09	850.93	3.46	224.94	21.15	771.93	79.0	0.094 $\pm$ 0.008	0.102 $\pm$ 0.005

Tab. 1:  $t\bar{t}$  + jets sub-backgrounds,  $S_T \geq 150$ ,  $H_T \geq 500$

$n_{\text{jet}}$	W+jets	0b	1b	1b/0b	0b( $\Delta\Phi < 0$ )	0b( $\Delta\Phi > 0$ )	1b( $\Delta\Phi < 0$ )	1b( $\Delta\Phi > 0$ )	$R_{CS}$ (0b)	$R_{CS}$ (1b)
[2, 3]	$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu$	14.61	2.23	0.15	14.43	0.18	2.19	0.05	0.012 $\pm$ 0.004	0.021 $\pm$ 0.015
	$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu$	365.57	49.65	0.14	360.95	4.63	49.04	0.61	0.013 $\pm$ 0.001	0.012 $\pm$ 0.002
	single lep. ( $e/\mu$ )	3639.67	510.19	0.14	3460.05	179.62	481.95	28.24	0.052 $\pm$ 0.001	0.059 $\pm$ 0.002
	total	4017.69	562.1	0.14	3833.27	184.42	533.2	28.9	0.048 $\pm$ 0.001	0.054 $\pm$ 0.002
[4, 5]	$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu$	10.26	2.84	0.28	9.83	0.43	2.72	0.11	0.044 $\pm$ 0.01	0.042 $\pm$ 0.018
	$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu$	259.07	57.44	0.22	255.85	3.21	56.46	0.98	0.013 $\pm$ 0.001	0.017 $\pm$ 0.003
	single lep. ( $e/\mu$ )	2694.8	609.1	0.23	2556.31	138.49	574.71	34.4	0.054 $\pm$ 0.001	0.06 $\pm$ 0.002
	total	2962.64	669.4	0.23	2820.51	142.13	633.91	35.49	0.05 $\pm$ 0.001	0.056 $\pm$ 0.001
[6, 7]	$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu$	2.08	0.52	0.25	1.89	0.19	0.5	0.02	0.101 $\pm$ 0.038	0.038 $\pm$ 0.039
	$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu$	44.75	13.61	0.3	43.98	0.76	13.45	0.15	0.017 $\pm$ 0.003	0.011 $\pm$ 0.004
	single lep. ( $e/\mu$ )	473.71	155.5	0.33	448.5	25.21	146.03	9.47	0.056 $\pm$ 0.002	0.065 $\pm$ 0.003
	total	520.56	169.62	0.33	494.4	26.16	159.98	9.64	0.053 $\pm$ 0.002	0.06 $\pm$ 0.003
$\geq 8$	$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu$	0.14	0.06	0.41	0.14	0.0	0.06	0.0	0.0 $\pm$ 0.0	0.0 $\pm$ 0.0
	$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu$	3.38	1.56	0.46	3.31	0.07	1.56	0.0	0.02 $\pm$ 0.012	0.0 $\pm$ 0.0
	single lep. ( $e/\mu$ )	37.89	14.91	0.39	35.65	2.24	13.77	1.14	0.063 $\pm$ 0.006	0.083 $\pm$ 0.017
	total	41.41	16.53	0.4	39.11	2.3	15.38	1.14	0.059 $\pm$ 0.006	0.074 $\pm$ 0.015

Tab. 2: W+jets sub-backgrounds,  $S_T \geq 150$ ,  $H_T \geq 500$

$t\bar{t}$ + jets	0b	1b	1b/0b	0b( $\Delta\Phi < 0$ )	0b( $\Delta\Phi > 0$ )	1b( $\Delta\Phi < 0$ )	1b( $\Delta\Phi > 0$ )	$R_{CS}$ (0b)	$R_{CS}$ (1b)
dihadronic	0.0	0.14	1.0	0.0	0.0	0.14	0.0	nan	0.0
di $\tau$	1.26	3.08	2.44	0.7	0.56	2.66	0.42	0.8	0.1579
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu \mid W \rightarrow \text{had.}$	0.56	0.56	1.0	0.56	0.0	0.56	0.0	0.0	0.0
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu \mid W \rightarrow e/\mu + \nu$	10.08	20.17	2.0	7.56	2.52	14.71	5.46	0.3333	0.3714
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu \mid W \rightarrow e/\mu + \nu$	4.34	12.33	2.84	2.94	1.4	9.52	2.8	0.4762	0.2941
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu \mid W \rightarrow \text{had.}$	8.26	13.87	1.68	8.26	0.0	13.87	0.0	0.0	0.0
dileptonic	11.77	33.05	2.81	9.24	2.52	25.35	7.7	0.2727	0.3039
single lep. ( $e/\mu$ )	79.84	129.98	1.63	77.03	2.8	126.06	3.92	0.0364	0.0311
total	116.11	213.17	1.84	106.31	9.8	192.86	20.31	0.0922	0.1053

Tab. 3:  $t\bar{t}$  + jets, inclusive, njets=2

$t\bar{t}$ + jets	0b	1b	1b/0b	0b( $\Delta\Phi < 0$ )	0b( $\Delta\Phi > 0$ )	1b( $\Delta\Phi < 0$ )	1b( $\Delta\Phi > 0$ )	$R_{CS}$ (0b)	$R_{CS}$ (1b)
dihadronic	0.98	0.7	0.71	0.98	0.0	0.7	0.0	0.0	0.0
di $\tau$	4.34	12.47	2.87	3.5	0.84	9.94	2.52	0.24	0.2535
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu \mid W \rightarrow \text{had.}$	1.26	2.94	2.33	1.26	0.0	2.66	0.28	0.0	0.1053
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu \mid W \rightarrow e/\mu + \nu$	43.84	114.57	2.61	29.41	14.43	78.44	36.14	0.4905	0.4607
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu \mid W \rightarrow e/\mu + \nu$	14.15	51.54	3.64	9.8	4.34	34.74	16.81	0.4429	0.4839
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu \mid W \rightarrow \text{had.}$	39.78	84.74	2.13	39.36	0.42	83.9	0.84	0.0107	0.01
dileptonic	41.88	117.37	2.8	31.65	10.22	86.14	31.23	0.323	0.3626
single lep. ( $e/\mu$ )	410.95	886.65	2.16	394.15	16.81	847.99	38.66	0.0426	0.0456
total	557.19	1270.96	2.28	510.13	47.06	1144.48	126.48	0.0923	0.1105

Tab. 4:  $t\bar{t}$  + jets, inclusive, njets=3

$t\bar{t}$ + jets	0b	1b	1b/0b	0b( $\Delta\Phi < 0$ )	0b( $\Delta\Phi > 0$ )	1b( $\Delta\Phi < 0$ )	1b( $\Delta\Phi > 0$ )	$R_{CS}$ (0b)	$R_{CS}$ (1b)
dihadronic	1.68	5.04	3.0	1.68	0.0	5.04	0.0	0.0	0.0
di $\tau$	8.96	21.43	2.39	7.0	1.96	16.25	5.18	0.28	0.319
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu \mid W \rightarrow \text{had.}$	1.82	7.84	4.31	1.82	0.0	7.14	0.7	0.0	0.098
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu \mid W \rightarrow e/\mu + \nu$	72.13	227.74	3.16	51.96	20.17	150.99	76.75	0.3881	0.5084
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu \mid W \rightarrow e/\mu + \nu$	22.27	69.89	3.14	15.41	6.86	48.04	21.85	0.4455	0.4548
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu \mid W \rightarrow \text{had.}$	84.74	201.83	2.38	83.62	1.12	198.47	3.36	0.0134	0.0169
dileptonic	52.94	173.12	3.27	38.1	14.85	124.66	48.46	0.3897	0.3888
single lep. ( $e/\mu$ )	902.34	2368.56	2.62	854.58	47.76	2234.66	133.9	0.0559	0.0599
total	1146.89	3075.74	2.68	1054.17	92.72	2785.53	290.21	0.088	0.1042

Tab. 5:  $t\bar{t}$  + jets, inclusive, njets=4

$t\bar{t}$ + jets	0b	1b	1b/0b	0b( $\Delta\Phi < 0$ )	0b( $\Delta\Phi > 0$ )	1b( $\Delta\Phi < 0$ )	1b( $\Delta\Phi > 0$ )	$R_{CS}$ (0b)	$R_{CS}$ (1b)
dihadronic	3.36	7.42	2.21	3.08	0.28	7.14	0.28	0.0909	0.0392
di $\tau$	7.14	22.13	3.1	5.32	1.82	15.27	6.86	0.3421	0.4495
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu \mid W \rightarrow \text{had.}$	2.66	9.1	3.42	2.38	0.28	8.26	0.84	0.1176	0.1017
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu \mid W \rightarrow e/\mu + \nu$	72.83	226.34	3.11	50.7	22.13	150.85	75.49	0.4365	0.5005
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu \mid W \rightarrow e/\mu + \nu$	15.41	59.39	3.85	9.66	5.74	40.76	18.63	0.5942	0.457
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu \mid W \rightarrow \text{had.}$	88.94	262.9	2.96	88.1	0.84	259.25	3.64	0.0095	0.014
dileptonic	47.34	156.17	3.3	33.62	13.73	109.81	46.36	0.4083	0.4222
single lep. ( $e/\mu$ )	1022.8	3077.05	3.01	960.89	61.91	2871.72	205.33	0.0644	0.0715
total	1260.45	3820.82	3.03	1153.72	106.73	3463.37	357.45	0.0925	0.1032

Tab. 6:  $t\bar{t}$  + jets, inclusive, njets=5

$t\bar{t}$ + jets	0b	1b	1b/0b	0b( $\Delta\Phi < 0$ )	0b( $\Delta\Phi > 0$ )	1b( $\Delta\Phi < 0$ )	1b( $\Delta\Phi > 0$ )	$R_{CS}$ (0b)	$R_{CS}$ (1b)
dihadronic	8.82	19.89	2.25	8.4	0.42	19.05	0.84	0.05	0.0441
di $\tau$	7.98	24.23	3.04	6.02	1.96	16.95	7.28	0.3256	0.4298
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu \mid W \rightarrow \text{had.}$	4.9	13.73	2.8	3.92	0.98	11.91	1.82	0.25	0.1529
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu \mid W \rightarrow e/\mu + \nu$	73.39	256.87	3.5	48.46	24.93	171.72	85.16	0.5144	0.4959
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu \mid W \rightarrow e/\mu + \nu$	17.65	66.81	3.79	13.31	4.34	46.78	20.03	0.3263	0.4281
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu \mid W \rightarrow \text{had.}$	116.53	359.55	3.09	114.99	1.54	352.12	7.42	0.0134	0.0211
dileptonic	47.9	153.23	3.2	33.62	14.29	109.11	44.12	0.425	0.4044
single lep. ( $e/\mu$ )	1303.99	4381.11	3.36	1214.63	89.36	4064.56	316.54	0.0736	0.0779
total	1581.09	5275.81	3.34	1443.27	137.82	4792.57	483.23	0.0955	0.1008

Tab. 7:  $t\bar{t}$  + jets, inclusive,  $n_{jets} \geq 6$

W+jets	0b	1b	1b/0b	0b( $\Delta\Phi < 0$ )	0b( $\Delta\Phi > 0$ )	1b( $\Delta\Phi < 0$ )	1b( $\Delta\Phi > 0$ )	$R_{CS}$ (0b)	$R_{CS}$ (1b)
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu$	6.01	0.88	0.15	5.94	0.08	0.88	0.0	0.0129	0.0
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu$	150.79	16.95	0.11	149.0	1.79	16.78	0.17	0.012	0.01
single lep. ( $e/\mu$ )	1484.98	166.04	0.11	1411.81	73.18	156.68	9.36	0.0518	0.0597
total	1641.89	183.86	0.11	1566.85	75.04	174.33	9.53	0.0479	0.0547

Tab. 8: W+jets, inclusive,  $n_{jets}=2$

W+jets	0b	1b	1b/0b	0b( $\Delta\Phi < 0$ )	0b( $\Delta\Phi > 0$ )	1b( $\Delta\Phi < 0$ )	1b( $\Delta\Phi > 0$ )	$R_{CS}$ (0b)	$R_{CS}$ (1b)
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu$	8.6	1.36	0.16	8.5	0.1	1.31	0.05	0.0122	0.0351
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu$	214.74	32.7	0.15	211.91	2.84	32.26	0.44	0.0134	0.0137
single lep. ( $e/\mu$ )	2163.15	344.07	0.16	2056.69	106.46	325.19	18.88	0.0518	0.0581
total	2385.25	378.14	0.16	2275.85	109.4	358.78	19.37	0.0481	0.054

Tab. 9: W+jets, inclusive,  $n_{jets}=3$

W+jets	0b	1b	1b/0b	0b( $\Delta\Phi < 0$ )	0b( $\Delta\Phi > 0$ )	1b( $\Delta\Phi < 0$ )	1b( $\Delta\Phi > 0$ )	$R_{CS}$ (0b)	$R_{CS}$ (1b)
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu$	6.7	1.39	0.21	6.55	0.15	1.34	0.06	0.0228	0.043
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu$	171.21	34.51	0.2	169.1	2.11	33.96	0.55	0.0125	0.0162
single lep. ( $e/\mu$ )	1763.96	369.39	0.21	1673.8	90.16	348.15	21.24	0.0539	0.061
total	1941.99	405.31	0.21	1849.57	92.42	383.46	21.85	0.05	0.057

Tab. 10: W+jets, inclusive,  $n_{jets}=4$

W+jets	0b	1b	1b/0b	0b( $\Delta\Phi < 0$ )	0b( $\Delta\Phi > 0$ )	1b( $\Delta\Phi < 0$ )	1b( $\Delta\Phi > 0$ )	$R_{CS}$ (0b)	$R_{CS}$ (1b)
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu$	3.56	1.44	0.41	3.28	0.28	1.39	0.06	0.0853	0.0414
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu$	87.89	22.92	0.26	86.79	1.1	22.5	0.43	0.0127	0.0189
single lep. ( $e/\mu$ )	933.68	239.57	0.26	885.35	48.33	226.42	13.16	0.0546	0.0581
total	1025.15	263.93	0.26	975.43	49.72	250.29	13.64	0.051	0.0545

Tab. 11: W+jets, inclusive,  $n_{jets}=5$

W+jets	0b	1b	1b/0b	0b( $\Delta\Phi < 0$ )	0b( $\Delta\Phi > 0$ )	1b( $\Delta\Phi < 0$ )	1b( $\Delta\Phi > 0$ )	$R_{CS}$ (0b)	$R_{CS}$ (1b)
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu$	2.22	0.57	0.26	2.03	0.19	0.56	0.02	0.0944	0.0345
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu$	48.13	15.16	0.32	47.3	0.83	15.01	0.15	0.0175	0.0102
single lep. ( $e/\mu$ )	511.62	170.41	0.33	484.17	27.44	159.8	10.61	0.0567	0.0664
total	561.99	186.14	0.33	533.52	28.46	175.36	10.79	0.0534	0.0615

Tab. 12: W+jets, inclusive,  $n_{jets} \geq 6$

$t\bar{t}$ + jets	0b	1b	1b/0b	0b( $\Delta\Phi < 0$ )	0b( $\Delta\Phi > 0$ )	1b( $\Delta\Phi < 0$ )	1b( $\Delta\Phi > 0$ )	$R_{CS}$ (0b)	$R_{CS}$ (1b)
dihadronic	0.0	0.0	1.0	0.0	0.0	0.0	0.0	nan	nan
di $\tau$	0.28	0.98	3.5	0.28	0.0	0.84	0.14	0.0	0.1667
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu \mid W \rightarrow \text{had.}$	0.28	0.56	2.0	0.28	0.0	0.56	0.0	0.0	0.0
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu \mid W \rightarrow e/\mu + \nu$	5.04	8.54	1.69	3.64	1.4	7.0	1.54	0.3846	0.22
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu \mid W \rightarrow e/\mu + \nu$	2.1	6.44	3.07	1.4	0.7	5.18	1.26	0.5	0.2432
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu \mid W \rightarrow \text{had.}$	3.92	7.14	1.82	3.92	0.0	7.14	0.0	0.0	0.0
dileptonic	5.32	13.31	2.5	4.62	0.7	11.06	2.24	0.1515	0.2025
single lep. ( $e/\mu$ )	36.7	57.15	1.56	36.42	0.28	57.15	0.0	0.0077	0.0
total	53.64	94.12	1.75	50.56	3.08	88.94	5.18	0.0609	0.0583

Tab. 13:  $t\bar{t}$  + jets,  $S_T \geq 250$ ,  $500 \leq H_T \leq 750$ ,  $n_{jets} = 2$

$t\bar{t}$ + jets	0b	1b	1b/0b	0b( $\Delta\Phi < 0$ )	0b( $\Delta\Phi > 0$ )	1b( $\Delta\Phi < 0$ )	1b( $\Delta\Phi > 0$ )	$R_{CS}$ (0b)	$R_{CS}$ (1b)
dihadronic	0.42	0.14	0.33	0.42	0.0	0.14	0.0	0.0	0.0
di $\tau$	2.24	4.76	2.13	2.1	0.14	3.92	0.84	0.0667	0.2143
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu \mid W \rightarrow \text{had.}$	0.28	1.4	5.0	0.28	0.0	1.26	0.14	0.0	0.1111
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu \mid W \rightarrow e/\mu + \nu$	17.65	43.56	2.47	12.89	4.76	29.13	14.43	0.3696	0.4952
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu \mid W \rightarrow e/\mu + \nu$	4.9	20.45	4.17	3.78	1.12	13.87	6.58	0.2963	0.4747
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu \mid W \rightarrow \text{had.}$	14.57	33.19	2.28	14.57	0.0	33.19	0.0	0.0	0.0
dileptonic	15.55	39.64	2.55	11.91	3.64	29.83	9.8	0.3059	0.3286
single lep. ( $e/\mu$ )	144.54	288.25	1.99	143.28	1.26	286.57	1.68	0.0088	0.0059
total	200.15	431.4	2.16	189.22	10.92	397.93	33.47	0.0577	0.0841

Tab. 14:  $t\bar{t}$  + jets,  $S_T \geq 250$ ,  $500 \leq H_T \leq 750$ ,  $n_{jets} = 3$

$t\bar{t}$ + jets	0b	1b	1b/0b	0b( $\Delta\Phi < 0$ )	0b( $\Delta\Phi > 0$ )	1b( $\Delta\Phi < 0$ )	1b( $\Delta\Phi > 0$ )	$R_{CS}$ (0b)	$R_{CS}$ (1b)
dihadronic	0.84	1.12	1.33	0.84	0.0	1.12	0.0	0.0	0.0
di $\tau$	3.5	6.72	1.92	3.22	0.28	5.74	0.98	0.087	0.1707
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu \mid W \rightarrow \text{had.}$	0.42	2.66	6.33	0.42	0.0	2.38	0.28	0.0	0.1176
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu \mid W \rightarrow e/\mu + \nu$	24.79	66.53	2.68	18.49	6.3	43.7	22.83	0.3409	0.5224
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu \mid W \rightarrow e/\mu + \nu$	7.42	20.03	2.7	5.74	1.68	13.31	6.72	0.2927	0.5053
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu \mid W \rightarrow \text{had.}$	29.97	66.67	2.22	29.97	0.0	66.67	0.0	0.0	0.0
dileptonic	16.67	50.0	3.0	12.75	3.92	36.0	14.01	0.3077	0.3891
single lep. ( $e/\mu$ )	248.05	647.4	2.61	246.65	1.4	644.04	3.36	0.0057	0.0052
total	331.67	861.15	2.6	318.09	13.59	812.97	48.18	0.0427	0.0593

Tab. 15:  $t\bar{t}$  + jets,  $S_T \geq 250$ ,  $500 \leq H_T \leq 750$ ,  $n_{jets} = 4$

$t\bar{t}$ + jets	0b	1b	1b/0b	0b( $\Delta\Phi < 0$ )	0b( $\Delta\Phi > 0$ )	1b( $\Delta\Phi < 0$ )	1b( $\Delta\Phi > 0$ )	$R_{CS}$ (0b)	$R_{CS}$ (1b)
dihadronic	0.7	1.4	2.0	0.7	0.0	1.4	0.0	0.0	0.0
di $\tau$	2.38	6.3	2.65	1.68	0.7	4.62	1.68	0.4167	0.3636
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu \mid W \rightarrow \text{had.}$	0.42	1.82	4.33	0.42	0.0	1.68	0.14	0.0	0.0833
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu \mid W \rightarrow e/\mu + \nu$	20.31	61.35	3.02	13.17	7.14	39.36	21.99	0.5426	0.5587
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu \mid W \rightarrow e/\mu + \nu$	5.18	14.99	2.89	3.78	1.4	10.5	4.48	0.3704	0.4267
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu \mid W \rightarrow \text{had.}$	24.93	72.69	2.92	24.93	0.0	72.69	0.0	0.0	0.0
dileptonic	13.45	39.22	2.92	9.94	3.5	28.85	10.36	0.3521	0.3592
single lep. ( $e/\mu$ )	241.61	662.95	2.74	239.78	1.82	659.45	3.5	0.0076	0.0053
total	308.98	860.73	2.79	294.41	14.57	818.58	42.16	0.0495	0.0515

Tab. 16:  $t\bar{t}$  + jets,  $S_T \geq 250$ ,  $500 \leq H_T \leq 750$ ,  $n_{jets} = 5$

$t\bar{t} + \text{jets}$	0b	1b	1b/0b	0b( $\Delta\Phi < 0$ )	0b( $\Delta\Phi > 0$ )	1b( $\Delta\Phi < 0$ )	1b( $\Delta\Phi > 0$ )	$R_{\text{CS}}$ (0b)	$R_{\text{CS}}$ (1b)
dihadronic	0.98	2.38	2.43	0.84	0.14	2.38	0.0	0.1667	0.0
di $\tau$	1.4	4.76	3.4	1.4	0.0	3.22	1.54	0.0	0.4783
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu \mid W \rightarrow \text{had.}$	0.7	2.38	3.4	0.7	0.0	1.96	0.42	0.0	0.2143
$W \rightarrow \tau + \nu \rightarrow \text{had.} + 2\nu \mid W \rightarrow e/\mu + \nu$	13.03	55.18	4.24	8.4	4.62	35.16	20.03	0.55	0.5697
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu \mid W \rightarrow e/\mu + \nu$	4.2	14.29	3.4	2.94	1.26	10.36	3.92	0.4286	0.3784
$W \rightarrow \tau + \nu \rightarrow e/\mu + 3\nu \mid W \rightarrow \text{had.}$	23.11	60.23	2.61	23.11	0.0	60.09	0.14	0.0	0.0023
dileptonic	12.19	25.63	2.1	8.96	3.22	17.37	8.26	0.3594	0.4758
single lep. ( $e/\mu$ )	200.99	638.44	3.18	199.87	1.12	634.8	3.64	0.0056	0.0057
total	256.59	803.3	3.13	246.23	10.36	765.35	37.96	0.0421	0.0496

Tab. 17:  $t\bar{t} + \text{jets}$ ,  $S_T \geq 250$ ,  $500 \leq H_T \leq 750$ ,  $n_{\text{jets}} \geq 6$