

# W+Jets background: Central + inverted VBF selections (2018 results)

Process	Data	DY+Jets	EWK W+2jets	EWK Z+2jets	QCD	SingleTop	$V_\gamma + jets$	VBF Higgs	VV	VVV	W+Jets	$t\bar{t}$	$t\bar{t}+X$
NRecoVertex	176394580.0	364056825.3 ± 9517.4	2581432.9 ± 227.6	447821.6 ± 71.7	1722204153278.8 ± 34977915.5	15318663.5 ± 441.5	5012462.4 ± 1033.8	1418670.5 ± 137.3	7055152.0 ± 454.3	13233.0 ± 10.6	3591488394.3 ± 99036.0	46058122.3 ± 659.1	111534.8 ± 50.4
NRecoTriggers1	111431474.0	1471598.6 ± 1693.2	201128.4 ± 241.7	32261.2 ± 64.1	40195703.5 ± 154542.1	342861.6 ± 248.5	59483.6 ± 155.7	760.3 ± 7.6	185803.2 ± 151.3	1534.3 ± 7.4	16928099.7 ± 20963.0	2501089.4 ± 424.8	14264.3 ± 20.2
NRecoMuon1	27513.0	967.8 ± 39.0	150.7 ± 6.8	13.6 ± 1.7	941.5 ± 485.3	1460.6 ± 18.3	61.2 ± 5.2	0.1 ± 0.0	1694.4 ± 17.9	21.1 ± 0.9	23406.4 ± 909.5	18211.8 ± 39.3	178.2 ± 1.9
NRecoMuon2	26553.0	686.3 ± 37.9	149.3 ± 6.8	5.6 ± 1.0	941.1 ± 485.3	1395.7 ± 17.8	52.5 ± 4.7	0.0 ± 0.0	1618.9 ± 17.6	18.4 ± 0.9	23403.9 ± 909.5	17544.9 ± 38.6	163.4 ± 1.9
NRecoElectron1	25367.0	683.8 ± 37.9	147.5 ± 6.8	5.6 ± 1.0	941.4 ± 485.3	1321.8 ± 17.3	51.2 ± 4.7	0.0 ± 0.0	1541.8 ± 17.1	17.6 ± 0.9	23349.6 ± 909.4	16395.7 ± 37.3	151.6 ± 1.8
NRecoTau1	24669.0	679.0 ± 37.9	144.1 ± 6.7	5.4 ± 0.9	941.4 ± 485.3	1274.5 ± 16.9	50.7 ± 4.6	0.0 ± 0.0	1471.7 ± 16.7	16.8 ± 0.8	23341.4 ± 909.4	16008.9 ± 36.8	147.7 ± 1.8
METCut	4810.0	38.7 ± 3.3	36.1 ± 3.3	2.0 ± 0.5	41.6 ± 11.7	271.6 ± 8.1	10.6 ± 2.1	0.0 ± 0.0	479.0 ± 9.6	5.4 ± 0.5	1308.1 ± 36.4	2549.8 ± 14.7	42.7 ± 0.8
NRecoJet1	4810.0	38.7 ± 3.3	36.1 ± 3.3	2.0 ± 0.5	41.6 ± 11.7	271.6 ± 8.1	10.6 ± 2.1	0.0 ± 0.0	479.0 ± 9.6	5.4 ± 0.5	1308.1 ± 36.4	2549.8 ± 14.7	42.7 ± 0.8
NRecoJet2	4810.0	38.7 ± 3.3	36.1 ± 3.3	2.0 ± 0.5	41.6 ± 11.7	271.6 ± 8.1	10.6 ± 2.1	0.0 ± 0.0	479.0 ± 9.6	5.4 ± 0.5	1308.1 ± 36.4	2549.8 ± 14.7	42.7 ± 0.8
NRecoBjet	3126.0	37.0 ± 3.3	31.5 ± 3.1	1.7 ± 0.5	31.0 ± 10.8	127.3 ± 5.5	8.9 ± 1.9	0.0 ± 0.0	456.5 ± 9.3	5.0 ± 0.4	1264.5 ± 36.0	984.7 ± 9.1	15.1 ± 0.5
NDiJetCombinations	2983.0	35.9 ± 3.3	28.8 ± 3.0	1.5 ± 0.5	30.2 ± 10.8	123.8 ± 5.4	8.6 ± 1.9	0.0 ± 0.0	440.8 ± 9.1	4.9 ± 0.4	1238.4 ± 35.8	919.3 ± 8.8	14.4 ± 0.5

$$SF = \frac{N_{Data} - N_{non\ W+Jets}}{N_{W+Jets}}$$

$$SF^{CR1} = 1.11 \pm 0.06$$