

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

Process	Data	DY+Jets	EWK W+2jets	EWK Z+2jets	QCD	SingleTop	$V_c + jets$	VBF Higgs	VV	VVV	W+Jets	$t\bar{t}$	tt+X
NRecoVertex	906579276.0	327651884.9 ± 8565.5	2581444.7 ± 227.6	447824.4 ± 71.6	1722205464424.1 ± 34977694.2	15319205.8 ± 441.4	5012474.5 ± 1033.8	1418722.4 ± 137.3	7055165.0 ± 454.3	13233.1 ± 10.6	3591490709.8 ± 99035.5	47364854.7 ± 677.7	111543.5 ± 50.4
NRecoTriggers1	764203115.0	74389093.7 ± 13406.4	641090.7 ± 395.3	77295.2 ± 115.9	93539683.2 ± 1175126.6	1449561.1 ± 432.2	1360220.9 ± 792.5	2210.4 ± 13.3	896461.7 ± 282.7	2503.0 ± 9.7	549350058.9 ± 152980.7	6968913.0 ± 652.8	19080.6 ± 24.1
NRecoMuon1	27272940.0	26414441.1 ± 8700.6	164.7 ± 7.2	29564.9 ± 81.6	112184.9 ± 37595.6	21681.6 ± 74.3	175164.2 ± 309.8	103.4 ± 0.4	46988.2 ± 58.0	202.9 ± 2.6	3804.9 ± 283.4	221623.7 ± 138.0	1036.1 ± 4.6
NRecoMuon2	27272940.0	26414441.1 ± 8700.6	164.7 ± 7.2	29564.9 ± 81.6	112184.9 ± 37595.6	21681.6 ± 74.3	175164.2 ± 309.8	103.4 ± 0.4	46988.2 ± 58.0	202.9 ± 2.6	3804.9 ± 283.4	221623.7 ± 138.0	1036.1 ± 4.6
NDiMuonCombinations	26365436.0	25926011.7 ± 8633.4	28.8 ± 3.0	27852.3 ± 79.5	19895.8 ± 18803.0	8089.1 ± 45.1	158685.2 ± 295.2	91.4 ± 0.3	33529.0 ± 40.5	108.2 ± 1.5	1340.0 ± 183.8	84950.6 ± 86.4	452.7 ± 2.6
NRecoElectron1	26317653.0	25886254.8 ± 8627.7	28.3 ± 3.0	27735.9 ± 79.4	19895.8 ± 18803.0	8028.9 ± 44.9	154135.3 ± 291.0	79.3 ± 0.3	33125.4 ± 40.2	103.7 ± 1.5	1337.1 ± 183.8	84133.0 ± 86.0	431.8 ± 2.6
NRecoTau1	262996855.0	25886251.7 ± 8627.7	28.3 ± 3.0	27735.9 ± 79.4	19895.8 ± 18803.0	8028.9 ± 44.9	154135.3 ± 291.0	79.3 ± 0.3	33125.4 ± 40.2	103.0 ± 1.5	1337.1 ± 183.8	84113.5 ± 86.0	430.2 ± 2.6
MEFCnt	262996855.0	25886251.7 ± 8627.7	28.3 ± 3.0	27735.9 ± 79.4	19895.8 ± 18803.0	8028.9 ± 44.9	154135.3 ± 291.0	79.3 ± 0.3	33125.4 ± 40.2	103.0 ± 1.5	1337.1 ± 183.8	84113.5 ± 86.0	430.2 ± 2.6
NRecoJet1	1643759.0	1476315.7 ± 1504.1	12.7 ± 2.0	16509.9 ± 62.9	13.0 ± 9.8	2999.6 ± 27.3	33818.1 ± 136.7	17.1 ± 0.1	11873.3 ± 25.1	74.6 ± 1.2	320.8 ± 25.6	45046.3 ± 63.1	357.7 ± 2.2
NRecoJet2	315019.0	283293.5 ± 394.7	3.8 ± 1.1	7502.7 ± 43.2	5.0 ± 5.0	656.2 ± 12.9	6553.7 ± 59.2	4.4 ± 0.0	3987.1 ± 15.5	40.9 ± 0.8	52.4 ± 8.1	15258.5 ± 36.8	227.3 ± 1.5
NRecoBJet	302486.0	278518.6 ± 393.1	2.9 ± 1.0	7416.8 ± 43.0	0.0 ± 0.0	448.6 ± 10.6	6499.7 ± 59.0	4.4 ± 0.0	3875.9 ± 15.2	38.2 ± 0.8	51.2 ± 8.1	7988.2 ± 26.6	97.0 ± 1.0
NDiJetCombinations	8341.0	6150.1 ± 58.0	0.0 ± 0.0	1180.9 ± 17.4	0.0 ± 0.0	13.6 ± 1.7	206.8 ± 8.7	1.0 ± 0.0	98.9 ± 3.1	1.1 ± 0.2	4.0 ± 2.1	272.0 ± 4.9	3.3 ± 0.2

$$SF = \frac{N_{Data} - N_{non-DY+Jets}}{N_{DY+Jets} \cdot SF^{CR3}}$$

$$SF^{CR2} = 1.18 \pm 0.02$$