CMS *Simulation Preliminary* (13 TeV)

True label

	H→WW 4q (0c)	H→WW 4q (1c)	H→WW 4q (2c)	H→WW 3q (0c)	H→WW 3q (1c)	H→WW 3q (2c)	H→WW evqq (0c)	H→WW evqq (1c)	H→WW μvqq (0c)	H→WW μvqq (1c)	H→WW $\tau_e$vqq (0c)	H→WW $\tau_e$vqq (1c)	H→WW $\tau_\mu$vqq (0c)	H→WW $\tau_\mu$vqq (1c)	H→WW $\tau_h$vqq (0c)	H→WW $\tau_h$vqq (1c)	H→bb	H→cc	H→ss	H→qq (q = u/d)	t→bW bqq (0c)	t→bW bqq (1c)	t→ bW bq (0c)	t→bW bq (1c)	t→bW bev	t→bW bμv	t→bW bτ_ev	t→bW bτ_μv	t→bW bτ_hv	QCD bb	QCD cc	QCD b	QCD c	QCD others
H→WW 4q (0c)	37.7	24.7	0.5	1.7	0.4	0.0	1.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.3	0.0	0.2	1.4	1.5	1.2	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.3	0.0	0.0	26.4
H→WW 4q (1c)	11.1	50.7	5.4	0.6	1.7	0.0	0.3	0.4	0.1	0.0	0.1	0.0	0.1	0.0	1.4	1.1	0.1	1.7	0.8	0.7	3.4	1.7	0.1	0.0	0.1	0.0	0.0	0.0	0.4	0.1	2.0	0.0	0.1	15.8
H→WW 4q (2c)	2.9	34.9	30.6	0.3	1.8	0.3	0.1	0.3	0.0	0.1	0.0	0.0	0.0	0.1	0.7	1.6	0.2	3.2	0.6	0.2	2.6	5.0	0.1	0.0	0.1	0.0	0.0	0.0	0.6	0.3	4.0	0.1	0.1	9.3
H→WW 3q (0c)	11.2	10.5	0.4	8.0	2.2	0.0	1.2	0.2	0.1	0.0	0.1	0.0	0.0	0.0	3.2	0.5	0.0	1.0	5.1	5.5	2.8	0.5	0.2	0.0	0.1	0.0	0.0	0.0	0.3	0.1	0.5	0.1	0.1	46.2
H→WW 3q (1c)	3.0	21.1	3.4	2.3	10.4	0.2	0.4	0.6	0.2	0.0	0.1	0.0	0.1	0.0	2.0	2.1	0.1	6.8	3.1	2.2	6.0	3.7	0.7	0.0	0.2	0.0	0.0	0.0	0.7	0.2	3.7	0.1	0.3	26.3
H→WW 3q (2c)	0.9	13.8	13.0	0.6	6.8	3.3	0.2	0.3	0.0	0.1	0.1	0.1	0.2	0.0	1.2	2.5	0.3	11.7	1.6	1.1	4.7	12.4	0.9	0.0	0.3	0.0	0.0	0.0	1.0	0.5	8.9	0.0	0.1	13.3
H→WW evqq (0c)	0.3	0.4	0.0	0.1	0.0	0.0	76.5	11.3	0.1	0.0	0.4	0.0	0.0	0.0	1.9	0.2	0.0	0.1	0.4	1.0	0.2	0.0	0.0	0.0	4.4	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	2.3
H→WW evqq (1c)	0.2	0.6	0.1	0.0	0.1	0.0	27.0	56.5	0.1	0.1	0.2	0.3	0.0	0.0	0.9	1.4	0.0	0.9	0.3	0.3	0.2	0.1	0.0	0.0	9.2	0.0	0.1	0.0	0.3	0.0	0.0	0.0	0.0	1.2
H→WW μvqq (0c)	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	79.9	12.3	0.0	0.0	0.5	0.0	0.1	0.0	0.0	0.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
H→WW μvqq (1c)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	26.6	60.5	0.0	0.0	0.2	0.3	0.0	0.2	0.0	0.5	0.1	0.1	0.0	0.1	0.0	0.0	0.0	10.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2
H→WW $\tau_e$vqq (0c)	0.9	0.9	0.1	0.2	0.1	0.0	47.1	7.4	0.1	0.0	19.4	3.0	0.0	0.0	3.9	0.7	0.0	0.6	2.2	3.4	1.0	0.3	0.0	0.0	1.9	0.0	1.7	0.0	0.2	0.1	0.1	0.0	0.0	4.5
H→WW $\tau_e$vqq (1c)	0.1	1.1	0.4	0.0	0.1	0.0	16.2	35.3	0.1	0.1	7.1	13.7	0.0	0.0	1.4	3.9	0.1	4.7	1.0	1.0	0.6	1.0	0.3	0.0	4.0	0.0	3.1	0.0	0.6	0.1	0.4	0.0	0.0	3.2
H→WW $\tau_\mu$vqq (0c)	0.2	0.7	0.1	0.0	0.0	0.0	0.2	0.1	40.3	6.0	0.0	0.0	34.1	5.0	0.5	0.1	0.0	0.6	1.4	2.0	1.0	0.1	0.0	0.0	0.1	2.1	0.0	2.6	0.1	0.1	0.1	0.0	0.0	2.4
H→WW $\tau_\mu$vqq (1c)	0.0	0.9	0.4	0.0	0.3	0.0	0.0	0.2	13.0	29.8	0.0	0.0	12.1	24.9	0.1	0.5	0.1	3.0	1.0	0.8	0.3	0.8	0.1	0.0	0.0	3.5	0.0	6.3	0.2	0.1	0.2	0.0	0.0	1.3
H→WW $\tau_h$vqq (0c)	2.5	3.1	0.2	0.6	0.4	0.0	4.3	0.9	0.3	0.0	0.5	0.0	0.1	0.0	58.4	9.0	0.0	1.1	2.2	2.7	1.6	0.4	0.1	0.0	0.2	0.0	0.0	0.0	5.1	0.1	0.2	0.0	0.0	5.9
H→WW $\tau_h$vqq (1c)	0.6	3.6	1.1	0.2	0.9	0.1	1.6	3.6	0.1	0.2	0.2	0.3	0.0	0.0	20.2	44.1	0.2	3.9	1.2	0.7	1.2	2.0	0.2	0.0	0.3	0.0	0.1	0.0	9.7	0.0	0.5	0.0	0.0	3.1
H→bb	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	82.2	3.1	0.1	0.1	1.5	4.1	1.6	0.4	0.4	0.2	0.1	0.1	1.3	2.5	0.4	0.9	0.0	0.7
H→cc	0.1	2.5	1.2	0.0	0.9	0.1	0.1	0.4	0.0	0.1	0.0	0.1	0.0	0.1	0.4	1.0	2.6	62.3	3.7	3.6	1.0	2.3	0.9	0.2	0.2	0.1	0.0	0.0	0.8	0.3	2.7	0.2	0.5	11.8
H→ss	1.4	2.1	0.2	0.6	0.4	0.0	0.3	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.9	0.3	0.1	3.6	35.7	16.5	0.7	0.3	0.3	0.0	0.1	0.0	0.0	0.0	0.3	0.2	0.4	0.1	0.0	35.4
H→qq (q = u/d)	1.6	1.9	0.1	0.7	0.3	0.0	0.6	0.1	0.1	0.0	0.1	0.0	0.1	0.0	1.1	0.2	0.1	3.9	19.2	29.2	0.8	0.2	0.2	0.0	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.1	0.0	38.1
t→bW bqq (0c)	0.5	3.8	0.7	0.3	0.9	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.3	1.3	1.2	0.3	0.2	58.7	13.5	4.7	0.1	0.8	0.1	0.1	0.0	2.9	1.1	1.3	0.5	0.0	5.9
t→bW bqq (1c)	0.1	2.6	1.6	0.1	0.6	0.2	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.5	4.7	2.9	0.2	0.1	21.7	50.8	2.7	0.8	0.5	0.2	0.1	0.1	2.6	1.3	1.5	0.3	0.0	3.4
t→ bW bq (0c)	0.1	1.0	0.2	0.0	0.3	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.2	4.2	3.9	0.8	0.6	16.9	6.4	41.8	0.7	1.1	0.3	0.1	0.2	4.7	1.7	2.3	2.1	0.1	9.8
t→bW bq (1c)	0.0	0.5	0.3	0.0	0.2	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2	16.9	10.7	0.3	0.1	6.1	18.7	16.9	11.8	0.7	0.5	0.1	0.1	4.2	2.3	3.0	1.0	0.1	4.9
t→bW bev	0.0	0.0	0.0	0.0	0.0	0.0	0.9	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.3	0.1	0.2	0.0	91.9	0.2	0.7	0.0	2.6	0.1	0.0	0.0	0.0	0.4
t→bW bμv	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	95.3	0.0	0.7	0.2	0.0	0.0	0.0	0.0	0.1
t→bW bτ_ev	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.9	0.0	0.0	0.7	0.4	0.0	0.0	0.2	0.1	1.2	0.6	0.0	0.2	0.8	0.7	0.8	0.0	57.9	0.2	23.5	0.0	6.1	0.7	0.0	0.8	0.0	2.2
t→bW bτ_μv	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.0	0.0	0.0	0.5	0.7	0.0	0.0	1.1	0.4	0.0	0.0	0.8	0.7	0.2	0.2	0.3	51.4	0.0	39.8	0.8	0.3	0.1	0.3	0.0	0.6
t→bW bτ_hv	0.0	0.4	0.2	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.7	1.8	2.0	1.4	0.3	0.2	2.1	1.9	1.8	0.2	4.7	0.3	0.5	0.1	78.1	0.6	0.4	0.5	0.1	1.5
QCD bb	0.0	0.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	24.5	1.1	0.2	0.1	5.4	10.1	2.6	0.6	0.7	0.5	0.2	0.4	3.2	39.3	3.9	1.5	0.0	4.5
QCD cc	0.2	4.3	2.4	0.1	0.9	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.1	0.0	0.3	0.5	0.6	9.8	0.9	0.6	3.3	3.8	1.4	0.2	0.4	0.1	0.1	0.1	1.5	1.3	23.3	0.5	0.6	42.3
QCD b	0.2	1.4	0.4	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.2	7.1	4.1	0.8	0.3	11.7	5.1	9.4	0.2	1.1	0.4	0.1	0.3	3.3	4.6	6.5	15.5	1.0	25.5
QCD c	0.5	2.3	0.2	0.2	0.6	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.2	6.8	1.7	1.4	1.1	0.7	0.8	0.0	0.3	0.0	0.0	0.0	0.5	0.3	4.7	0.5	2.1	74.0
QCD others	0.7	1.0	0.1	0.2	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.7	2.1	1.9	0.4	0.2	0.2	0.0	0.1	0.0	0.0	0.0	0.2	0.2	0.7	0.1	0.1	90.5

Predicted label

Percentage [%]

100
80
60
40
20
0