Cut	300 GeV, 1000 cm, region 2017		
	$\epsilon_i^{\mathrm{CMS}}$	$\epsilon_i^{\mathrm{sim}}$, MLM	$\epsilon_i^{\mathrm{sim}}$, MLM, no pileup
total	$1.0^{+0.00}_{-0.00}$	$1.0^{+0.00}_{-0.00}$	$1.0^{+0.00}_{-0.00}$
trigger	$1.4^{+0.02}_{-0.02} \times 10^{-1}$	$1.0^{+0.01}_{-0.01} \times 10^{-1}$	$1.0^{+0.01}_{-0.01} \times 10^{-1}$
passes $p_{\mathrm{T}}^{\mathrm{miss}}$ filters	$1.4^{+0.02}_{-0.02} \times 10^{-1}$	$1.0^{+0.01}_{-0.01} \times 10^{-1}$	$1.0^{+0.01}_{-0.01} \times 10^{-1}$
$p_{\mathrm{T}}^{\mathrm{miss}} > 120\,\mathrm{GeV}$	$1.3^{+0.02}_{-0.02} \times 10^{-1}$	$1.0^{+0.01}_{-0.01} \times 10^{-1}$	$1.0^{+0.01}_{-0.01} \times 10^{-1}$
≥ 1 jet with $p_{\mathrm{T}} > 110\,\mathrm{GeV}$ and $\lvert\eta\rvert < 2.4$	$8.3^{+0.13}_{-0.13} \times 10^{-2}$	$5.4^{+0.07}_{-0.07} \times 10^{-2}$	$5.3^{+0.07}_{-0.07} \times 10^{-2}$
==0 pairs of jets with $\Delta\phi_{\mathrm{jet,\ jet}} > 2.5$	$7.2^{+0.12}_{-0.12} \times 10^{-2}$	$4.7^{+0.07}_{-0.07} \times 10^{-2}$	$4.6^{+0.07}_{-0.07} \times 10^{-2}$
$\lvert\Delta\phi(\text{leading jet}, \vec{p}_{\mathrm{T}}^{\mathrm{miss}})\rvert > 0.5$	$7.2^{+0.12}_{-0.12} \times 10^{-2}$	$4.5^{+0.07}_{-0.07} \times 10^{-2}$	$4.5^{+0.07}_{-0.07} \times 10^{-2}$
≥ 1 track with $\lvert\eta\rvert < 2.1$	$7.2^{+0.12}_{-0.12} \times 10^{-2}$	$4.5^{+0.07}_{-0.07} \times 10^{-2}$	$4.5^{+0.07}_{-0.07} \times 10^{-2}$
≥ 1 track with $p_{\mathrm{T}} > 55\,\mathrm{GeV}$	$6.2^{+0.11}_{-0.11} \times 10^{-2}$	$4.1^{+0.06}_{-0.06} \times 10^{-2}$	$4.1^{+0.06}_{-0.06} \times 10^{-2}$
≥ 1 track passing fiducial selections	$4.5^{+0.10}_{-0.10} \times 10^{-2}$	$3.4^{+0.06}_{-0.06} \times 10^{-2}$	$3.4^{+0.06}_{-0.06} \times 10^{-2}$
≥ 1 track with ≥ 4 pixel hits	$3.3^{+0.08}_{-0.08} \times 10^{-2}$	$2.7^{+0.05}_{-0.05} \times 10^{-2}$	$2.7^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with no missing inner hits	$3.3^{+0.08}_{-0.08} \times 10^{-2}$	$1.9^{+0.04}_{-0.04} \times 10^{-2}$	$1.8^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with no missing middle hits	$3.0^{+0.08}_{-0.08} \times 10^{-2}$	$1.9^{+0.04}_{-0.04} \times 10^{-2}$	$1.8^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with relative track isolation $< 5\%$	$2.5^{+0.07}_{-0.07} \times 10^{-2}$	$1.3^{+0.04}_{-0.04} \times 10^{-2}$	$1.4^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with $\lvert d_{\mathrm{xy}}\rvert < 0.02\,\mathrm{cm}$	$2.5^{+0.07}_{-0.07} \times 10^{-2}$	$1.3^{+0.04}_{-0.04} \times 10^{-2}$	$1.4^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with $\lvert d_z\rvert < 0.5\,\mathrm{cm}$	$2.5^{+0.07}_{-0.07} \times 10^{-2}$	$1.3^{+0.04}_{-0.04} \times 10^{-2}$	$1.4^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with $\Delta R(\text{track}, \text{jet}) > 0.5$	$2.5^{+0.07}_{-0.07} \times 10^{-2}$	$1.3^{+0.04}_{-0.04} \times 10^{-2}$	$1.4^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with $\Delta R(\text{track}, \text{electron}) > 0.15$	$2.3^{+0.07}_{-0.07} \times 10^{-2}$	$1.2^{+0.04}_{-0.04} \times 10^{-2}$	$1.4^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with $\Delta R(\text{track}, \text{muon}) > 0.15$	$8.1^{+0.41}_{-0.41} \times 10^{-3}$	$7.3^{+0.28}_{-0.28} \times 10^{-3}$	$8.5^{+0.30}_{-0.30} \times 10^{-3}$
≥ 1 track with $\Delta R(\text{track}, \tau_{\mathrm{h}}) > 0.15$	$8.1^{+0.41}_{-0.41} \times 10^{-3}$	$7.3^{+0.28}_{-0.28} \times 10^{-3}$	$8.5^{+0.30}_{-0.30} \times 10^{-3}$
≥ 1 track with $E_{\mathrm{calo}} < 10\,\mathrm{GeV}$	$8.0^{+0.41}_{-0.41} \times 10^{-3}$	$7.3^{+0.28}_{-0.28} \times 10^{-3}$	$8.5^{+0.30}_{-0.30} \times 10^{-3}$
≥ 1 track with ≥ 3 missing outer hits	$2.3^{+0.22}_{-0.22} \times 10^{-3}$	$1.3^{+0.12}_{-0.12} \times 10^{-3}$	$1.7^{+0.13}_{-0.13} \times 10^{-3}$
≥ 1 track with number of tracker layers with measurement == 4	$3.7^{+0.86}_{-0.86} \times 10^{-4}$	$1.3^{+0.37}_{-0.37} \times 10^{-4}$	$1.7^{+0.42}_{-0.42} \times 10^{-4}$
≥ 1 track with number of tracker layers with measurement == 5	$3.7^{+0.86}_{-0.86} \times 10^{-4}$	$1.5^{+0.40}_{-0.40} \times 10^{-4}$	$2.3^{+0.50}_{-0.50} \times 10^{-4}$
≥ 1 track with number of tracker layers with measurement ≥ 6	$1.6^{+0.18}_{-0.18} \times 10^{-3}$	$1.0^{+0.10}_{-0.10} \times 10^{-3}$	$1.3^{+0.12}_{-0.12} \times 10^{-3}$

Table 1: Cutflow comparison for 300 GeV, 1000 cm, region 2017

Cut	300 GeV, 1000 cm, region 2018A		
	ϵ_i^{CMS}	ϵ_i^{sim}, MLM	ϵ_i^{sim}, MLM, no pileup
total	$1.0^{+0.00}_{-0.00}$	$1.0^{+0.00}_{-0.00}$	$1.0^{+0.00}_{-0.00}$
trigger	$9.8^{+0.14}_{-0.14} \times 10^{-2}$	$1.0^{+0.01}_{-0.01} \times 10^{-1}$	$1.0^{+0.01}_{-0.01} \times 10^{-1}$
passes $p_{\text{T}}^{\text{miss}}$ filters	$9.8^{+0.14}_{-0.14} \times 10^{-2}$	$1.0^{+0.01}_{-0.01} \times 10^{-1}$	$1.0^{+0.01}_{-0.01} \times 10^{-1}$
$p_{\text{T}}^{\text{miss}} > 120\,\text{GeV}$	$9.5^{+0.14}_{-0.14} \times 10^{-2}$	$1.0^{+0.01}_{-0.01} \times 10^{-1}$	$1.0^{+0.01}_{-0.01} \times 10^{-1}$
≥ 1 jet with $p_{\text{T}} > 110\,\text{GeV}$ and $\lvert\eta\rvert < 2.4$	$8.2^{+0.13}_{-0.13} \times 10^{-2}$	$5.4^{+0.07}_{-0.07} \times 10^{-2}$	$5.3^{+0.07}_{-0.07} \times 10^{-2}$
==0 pairs of jets with $\Delta\phi_{\text{jet, jet}} > 2.5$	$7.1^{+0.12}_{-0.12} \times 10^{-2}$	$4.7^{+0.07}_{-0.07} \times 10^{-2}$	$4.6^{+0.07}_{-0.07} \times 10^{-2}$
$\lvert\Delta\phi(\text{leading jet}, \vec{p}_{\text{T}}^{\text{miss}})\rvert > 0.5$	$7.1^{+0.12}_{-0.12} \times 10^{-2}$	$4.5^{+0.07}_{-0.07} \times 10^{-2}$	$4.5^{+0.07}_{-0.07} \times 10^{-2}$
≥ 1 track with $\lvert\eta\rvert < 2.1$	$7.0^{+0.12}_{-0.12} \times 10^{-2}$	$4.5^{+0.07}_{-0.07} \times 10^{-2}$	$4.5^{+0.07}_{-0.07} \times 10^{-2}$
≥ 1 track with $p_{\text{T}} > 55\,\text{GeV}$	$6.1^{+0.11}_{-0.11} \times 10^{-2}$	$4.1^{+0.06}_{-0.06} \times 10^{-2}$	$4.1^{+0.06}_{-0.06} \times 10^{-2}$
≥ 1 track passing fiducial selections	$4.2^{+0.09}_{-0.09} \times 10^{-2}$	$3.4^{+0.06}_{-0.06} \times 10^{-2}$	$3.4^{+0.06}_{-0.06} \times 10^{-2}$
≥ 1 track with ≥ 4 pixel hits	$2.9^{+0.08}_{-0.08} \times 10^{-2}$	$2.7^{+0.05}_{-0.05} \times 10^{-2}$	$2.7^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with no missing inner hits	$2.9^{+0.08}_{-0.08} \times 10^{-2}$	$1.9^{+0.04}_{-0.04} \times 10^{-2}$	$1.8^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with no missing middle hits	$2.5^{+0.07}_{-0.07} \times 10^{-2}$	$1.9^{+0.04}_{-0.04} \times 10^{-2}$	$1.8^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with relative track isolation $< 5\%$	$2.1^{+0.06}_{-0.06} \times 10^{-2}$	$1.3^{+0.04}_{-0.04} \times 10^{-2}$	$1.4^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with $\lvert d_{\text{xy}}\rvert < 0.02\,\text{cm}$	$2.1^{+0.06}_{-0.06} \times 10^{-2}$	$1.3^{+0.04}_{-0.04} \times 10^{-2}$	$1.4^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with $\lvert d_z\rvert < 0.5\,\text{cm}$	$2.1^{+0.06}_{-0.06} \times 10^{-2}$	$1.3^{+0.04}_{-0.04} \times 10^{-2}$	$1.4^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with $\Delta R(\text{track}, \text{jet}) > 0.5$	$2.0^{+0.06}_{-0.06} \times 10^{-2}$	$1.3^{+0.04}_{-0.04} \times 10^{-2}$	$1.4^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with $\Delta R(\text{track}, \text{electron}) > 0.15$	$1.9^{+0.06}_{-0.06} \times 10^{-2}$	$1.2^{+0.04}_{-0.04} \times 10^{-2}$	$1.4^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with $\Delta R(\text{track}, \text{muon}) > 0.15$	$6.6^{+0.37}_{-0.37} \times 10^{-3}$	$7.3^{+0.28}_{-0.28} \times 10^{-3}$	$8.5^{+0.30}_{-0.30} \times 10^{-3}$
≥ 1 track with $\Delta R(\text{track}, \tau_{\text{h}}) > 0.15$	$6.6^{+0.37}_{-0.37} \times 10^{-3}$	$7.3^{+0.28}_{-0.28} \times 10^{-3}$	$8.5^{+0.30}_{-0.30} \times 10^{-3}$
≥ 1 track with $E_{\text{calo}} < 10\,\text{GeV}$	$6.5^{+0.36}_{-0.36} \times 10^{-3}$	$7.3^{+0.28}_{-0.28} \times 10^{-3}$	$8.5^{+0.30}_{-0.30} \times 10^{-3}$
≥ 1 track with ≥ 3 missing outer hits	$1.9^{+0.20}_{-0.20} \times 10^{-3}$	$1.3^{+0.12}_{-0.12} \times 10^{-3}$	$1.7^{+0.13}_{-0.13} \times 10^{-3}$
≥ 1 track with number of tracker layers with measurement == 4	$3.7^{+0.86}_{-0.86} \times 10^{-4}$	$1.2^{+0.35}_{-0.35} \times 10^{-4}$	$1.8^{+0.44}_{-0.44} \times 10^{-4}$
≥ 1 track with number of tracker layers with measurement == 5	$2.4^{+0.71}_{-0.71} \times 10^{-4}$	$1.6^{+0.41}_{-0.41} \times 10^{-4}$	$2.3^{+0.50}_{-0.50} \times 10^{-4}$
≥ 1 track with number of tracker layers with measurement ≥ 6	$1.3^{+0.16}_{-0.16} \times 10^{-3}$	$1.0^{+0.11}_{-0.11} \times 10^{-3}$	$1.3^{+0.12}_{-0.12} \times 10^{-3}$

Table 2: Cutflow comparison for 300 GeV, 1000 cm, region 2018A

Cut	300 GeV, 1000 cm, region 2018B		
	$\epsilon_i^{\mathrm{CMS}}$	$\epsilon_i^{\mathrm{sim}}$, MLM	$\epsilon_i^{\mathrm{sim}}$, MLM, no pileup
total	$1.0^{+0.00}_{-0.00}$	$1.0^{+0.00}_{-0.00}$	$1.0^{+0.00}_{-0.00}$
trigger	$9.8^{+0.14}_{-0.14} \times 10^{-2}$	$1.0^{+0.01}_{-0.01} \times 10^{-1}$	$1.0^{+0.01}_{-0.01} \times 10^{-1}$
passes $p_{\mathrm{T}}^{\mathrm{miss}}$ filters	$9.8^{+0.14}_{-0.14} \times 10^{-2}$	$1.0^{+0.01}_{-0.01} \times 10^{-1}$	$1.0^{+0.01}_{-0.01} \times 10^{-1}$
$p_{\mathrm{T}}^{\mathrm{miss}} > 120\,\mathrm{GeV}$	$9.5^{+0.14}_{-0.14} \times 10^{-2}$	$1.0^{+0.01}_{-0.01} \times 10^{-1}$	$1.0^{+0.01}_{-0.01} \times 10^{-1}$
≥ 1 jet with $p_{\mathrm{T}} > 110\,\mathrm{GeV}$ and $\lvert\eta\rvert < 2.4$	$8.2^{+0.13}_{-0.13} \times 10^{-2}$	$5.4^{+0.07}_{-0.07} \times 10^{-2}$	$5.3^{+0.07}_{-0.07} \times 10^{-2}$
==0 pairs of jets with $\Delta\phi_{\mathrm{jet,\ jet}} > 2.5$	$7.1^{+0.12}_{-0.12} \times 10^{-2}$	$4.7^{+0.07}_{-0.07} \times 10^{-2}$	$4.6^{+0.07}_{-0.07} \times 10^{-2}$
$\lvert\Delta\phi(\text{leading jet}, \vec{p}_{\mathrm{T}}^{\mathrm{miss}})\rvert > 0.5$	$7.1^{+0.12}_{-0.12} \times 10^{-2}$	$4.5^{+0.07}_{-0.07} \times 10^{-2}$	$4.5^{+0.07}_{-0.07} \times 10^{-2}$
≥ 1 track with $\lvert\eta\rvert < 2.1$	$7.0^{+0.12}_{-0.12} \times 10^{-2}$	$4.5^{+0.07}_{-0.07} \times 10^{-2}$	$4.5^{+0.07}_{-0.07} \times 10^{-2}$
≥ 1 track with $p_{\mathrm{T}} > 55\,\mathrm{GeV}$	$6.1^{+0.11}_{-0.11} \times 10^{-2}$	$4.1^{+0.06}_{-0.06} \times 10^{-2}$	$4.1^{+0.06}_{-0.06} \times 10^{-2}$
≥ 1 track passing fiducial selections	$4.2^{+0.09}_{-0.09} \times 10^{-2}$	$3.4^{+0.06}_{-0.06} \times 10^{-2}$	$3.4^{+0.06}_{-0.06} \times 10^{-2}$
≥ 1 track with ≥ 4 pixel hits	$2.9^{+0.08}_{-0.08} \times 10^{-2}$	$2.7^{+0.05}_{-0.05} \times 10^{-2}$	$2.7^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with no missing inner hits	$2.9^{+0.08}_{-0.08} \times 10^{-2}$	$1.9^{+0.04}_{-0.04} \times 10^{-2}$	$1.8^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with no missing middle hits	$2.5^{+0.07}_{-0.07} \times 10^{-2}$	$1.9^{+0.04}_{-0.04} \times 10^{-2}$	$1.8^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with relative track isolation $< 5\%$	$2.1^{+0.07}_{-0.07} \times 10^{-2}$	$1.3^{+0.04}_{-0.04} \times 10^{-2}$	$1.4^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with $\lvert d_{\mathrm{xy}}\rvert < 0.02\,\mathrm{cm}$	$2.1^{+0.07}_{-0.07} \times 10^{-2}$	$1.3^{+0.04}_{-0.04} \times 10^{-2}$	$1.4^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with $\lvert d_z\rvert < 0.5\,\mathrm{cm}$	$2.1^{+0.07}_{-0.07} \times 10^{-2}$	$1.3^{+0.04}_{-0.04} \times 10^{-2}$	$1.4^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with $\Delta R(\text{track}, \text{jet}) > 0.5$	$2.1^{+0.06}_{-0.06} \times 10^{-2}$	$1.3^{+0.04}_{-0.04} \times 10^{-2}$	$1.4^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with $\Delta R(\text{track}, \text{electron}) > 0.15$	$1.9^{+0.06}_{-0.06} \times 10^{-2}$	$1.2^{+0.04}_{-0.04} \times 10^{-2}$	$1.4^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with $\Delta R(\text{track}, \text{muon}) > 0.15$	$6.6^{+0.37}_{-0.37} \times 10^{-3}$	$7.3^{+0.28}_{-0.28} \times 10^{-3}$	$8.5^{+0.30}_{-0.30} \times 10^{-3}$
≥ 1 track with $\Delta R(\text{track}, \tau_{\mathrm{h}}) > 0.15$	$6.6^{+0.37}_{-0.37} \times 10^{-3}$	$7.3^{+0.28}_{-0.28} \times 10^{-3}$	$8.5^{+0.30}_{-0.30} \times 10^{-3}$
≥ 1 track with $E_{\mathrm{calo}} < 10\,\mathrm{GeV}$	$6.5^{+0.36}_{-0.36} \times 10^{-3}$	$7.3^{+0.28}_{-0.28} \times 10^{-3}$	$8.5^{+0.30}_{-0.30} \times 10^{-3}$
≥ 1 track with ≥ 3 missing outer hits	$2.0^{+0.20}_{-0.20} \times 10^{-3}$	$1.3^{+0.12}_{-0.12} \times 10^{-3}$	$1.7^{+0.13}_{-0.13} \times 10^{-3}$
$\phi(p_{\mathrm{T}}^{\mathrm{miss}}) < -1.6$ or $\phi(p_{\mathrm{T}}^{\mathrm{miss}}) > -0.6$	$1.6^{+0.18}_{-0.18} \times 10^{-3}$	$1.1^{+0.11}_{-0.11} \times 10^{-3}$	$1.4^{+0.12}_{-0.12} \times 10^{-3}$
≥ 1 track with number of tracker layers with measurement == 4	$3.3^{+0.81}_{-0.81} \times 10^{-4}$	$1.1^{+0.34}_{-0.34} \times 10^{-4}$	$1.4^{+0.38}_{-0.38} \times 10^{-4}$
≥ 1 track with number of tracker layers with measurement == 5	$2.0^{+0.64}_{-0.64} \times 10^{-4}$	$1.3^{+0.37}_{-0.37} \times 10^{-4}$	$2.1^{+0.47}_{-0.47} \times 10^{-4}$
≥ 1 track with number of tracker layers with measurement ≥ 6	$1.1^{+0.15}_{-0.15} \times 10^{-3}$	$8.5^{+0.95}_{-0.95} \times 10^{-4}$	$1.0^{+0.10}_{-0.10} \times 10^{-3}$

Table 3: Cutflow comparison for 300 GeV, 1000 cm, region 2018B