Cut	700 GeV, 100 cm, region 2017		
	$\epsilon_i^{\mathrm{CMS}}$	$\epsilon_i^{\mathrm{sim}}$, HEPMC	$\epsilon_i^{\mathrm{sim}}$, HEPMC, no pileup
total	$1.0^{+0.00}_{-0.00}$	$1.0^{+0.00}_{-0.00}$	$1.0^{+0.00}_{-0.00}$
trigger	$1.9^{+0.02}_{-0.02} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$
passes $p_{\mathrm{T}}^{\mathrm{miss}}$ filters	$1.9^{+0.02}_{-0.02} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$
$p_{\mathrm{T}}^{\mathrm{miss}} > 120\,\mathrm{GeV}$	$1.8^{+0.02}_{-0.02} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$
≥ 1 jet with $p_{\mathrm{T}} > 110\,\mathrm{GeV}$ and $\lvert\eta\rvert < 2.4$	$1.3^{+0.02}_{-0.02} \times 10^{-1}$	$1.3^{+0.01}_{-0.01} \times 10^{-1}$	$1.3^{+0.01}_{-0.01} \times 10^{-1}$
==0 pairs of jets with $\Delta\phi_{\mathrm{jet,\ jet}} > 2.5$	$1.2^{+0.02}_{-0.02} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$
$\lvert\Delta\phi(\text{leading jet}, \vec{p}_{\mathrm{T}}^{\mathrm{miss}})\rvert > 0.5$	$1.2^{+0.02}_{-0.02} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$
≥ 1 track with $\lvert\eta\rvert < 2.1$	$1.1^{+0.02}_{-0.02} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$
≥ 1 track with $p_{\mathrm{T}} > 55\,\mathrm{GeV}$	$9.2^{+0.14}_{-0.14} \times 10^{-2}$	$9.1^{+0.08}_{-0.08} \times 10^{-2}$	$9.1^{+0.08}_{-0.08} \times 10^{-2}$
≥ 1 track passing fiducial selections	$6.7^{+0.12}_{-0.12} \times 10^{-2}$	$7.5^{+0.08}_{-0.08} \times 10^{-2}$	$7.5^{+0.08}_{-0.08} \times 10^{-2}$
≥ 1 track with ≥ 4 pixel hits	$4.8^{+0.10}_{-0.10} \times 10^{-2}$	$5.7^{+0.07}_{-0.07} \times 10^{-2}$	$5.8^{+0.07}_{-0.07} \times 10^{-2}$
≥ 1 track with no missing inner hits	$4.8^{+0.10}_{-0.10} \times 10^{-2}$	$4.5^{+0.06}_{-0.06} \times 10^{-2}$	$4.6^{+0.06}_{-0.06} \times 10^{-2}$
≥ 1 track with no missing middle hits	$4.5^{+0.10}_{-0.10} \times 10^{-2}$	$4.5^{+0.06}_{-0.06} \times 10^{-2}$	$4.6^{+0.06}_{-0.06} \times 10^{-2}$
≥ 1 track with relative track isolation $< 5\%$	$3.7^{+0.09}_{-0.09} \times 10^{-2}$	$3.4^{+0.05}_{-0.05} \times 10^{-2}$	$3.5^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with $\lvert d_{\mathrm{xy}}\rvert < 0.02\,\mathrm{cm}$	$3.7^{+0.09}_{-0.09} \times 10^{-2}$	$3.4^{+0.05}_{-0.05} \times 10^{-2}$	$3.5^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with $\lvert d_z\rvert < 0.5\,\mathrm{cm}$	$3.7^{+0.09}_{-0.09} \times 10^{-2}$	$3.4^{+0.05}_{-0.05} \times 10^{-2}$	$3.5^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with $\Delta R(\text{track}, \text{jet}) > 0.5$	$3.7^{+0.09}_{-0.09} \times 10^{-2}$	$3.3^{+0.05}_{-0.05} \times 10^{-2}$	$3.5^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with $\Delta R(\text{track}, \text{electron}) > 0.15$	$3.4^{+0.09}_{-0.09} \times 10^{-2}$	$3.3^{+0.05}_{-0.05} \times 10^{-2}$	$3.4^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with $\Delta R(\text{track}, \text{muon}) > 0.15$	$3.4^{+0.09}_{-0.09} \times 10^{-2}$	$3.3^{+0.05}_{-0.05} \times 10^{-2}$	$3.4^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with $\Delta R(\text{track}, \tau_{\mathrm{h}}) > 0.15$	$3.4^{+0.09}_{-0.09} \times 10^{-2}$	$3.3^{+0.05}_{-0.05} \times 10^{-2}$	$3.4^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with $E_{\mathrm{calo}} < 10\,\mathrm{GeV}$	$3.3^{+0.09}_{-0.09} \times 10^{-2}$	$3.3^{+0.05}_{-0.05} \times 10^{-2}$	$3.4^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with ≥ 3 missing outer hits	$2.1^{+0.07}_{-0.07} \times 10^{-2}$	$2.2^{+0.04}_{-0.04} \times 10^{-2}$	$2.4^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with 4 layers	$5.0^{+0.33}_{-0.33} \times 10^{-3}$	$4.2^{+0.19}_{-0.19} \times 10^{-3}$	$4.3^{+0.19}_{-0.19} \times 10^{-3}$
≥ 1 track with 5 layers	$4.0^{+0.29}_{-0.29} \times 10^{-3}$	$3.6^{+0.17}_{-0.17} \times 10^{-3}$	$4.1^{+0.19}_{-0.19} \times 10^{-3}$
≥ 1 track with ≥ 6 layers	$1.3^{+0.05}_{-0.05} \times 10^{-2}$	$1.4^{+0.03}_{-0.03} \times 10^{-2}$	$1.5^{+0.04}_{-0.04} \times 10^{-2}$

Table 1: Cutflow comparison for 700 GeV, 100 cm, region 2017

Cut	700 GeV, 100 cm, region 2018A		
	$\epsilon_i^{\mathrm{CMS}}$	$\epsilon_i^{\mathrm{sim}}$, HEPMC	$\epsilon_i^{\mathrm{sim}}$, HEPMC, no pileup
total	$1.0^{+0.01}_{-0.01}$	$1.0^{+0.00}_{-0.00}$	$1.0^{+0.00}_{-0.00}$
trigger	$1.5^{+0.02}_{-0.02} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$
passes $p_{\mathrm{T}}^{\mathrm{miss}}$ filters	$1.5^{+0.02}_{-0.02} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$
$p_{\mathrm{T}}^{\mathrm{miss}} > 120\,\mathrm{GeV}$	$1.5^{+0.02}_{-0.02} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$
≥ 1 jet with $p_{\mathrm{T}} > 110\,\mathrm{GeV}$ and $\lvert\eta\rvert < 2.4$	$1.3^{+0.02}_{-0.02} \times 10^{-1}$	$1.3^{+0.01}_{-0.01} \times 10^{-1}$	$1.3^{+0.01}_{-0.01} \times 10^{-1}$
==0 pairs of jets with $\Delta\phi_{\mathrm{jet,\ jet}} > 2.5$	$1.1^{+0.02}_{-0.02} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$
$\lvert\Delta\phi(\text{leading jet}, \vec{p}_{\mathrm{T}}^{\mathrm{miss}})\rvert > 0.5$	$1.1^{+0.02}_{-0.02} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$
≥ 1 track with $\lvert\eta\rvert < 2.1$	$1.1^{+0.02}_{-0.02} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$
≥ 1 track with $p_{\mathrm{T}} > 55\,\mathrm{GeV}$	$8.7^{+0.17}_{-0.17} \times 10^{-2}$	$9.1^{+0.08}_{-0.08} \times 10^{-2}$	$9.1^{+0.08}_{-0.08} \times 10^{-2}$
≥ 1 track passing fiducial selections	$6.1^{+0.17}_{-0.17} \times 10^{-2}$	$7.5^{+0.08}_{-0.08} \times 10^{-2}$	$7.5^{+0.08}_{-0.08} \times 10^{-2}$
≥ 1 track with ≥ 4 pixel hits	$3.9^{+0.14}_{-0.14} \times 10^{-2}$	$5.7^{+0.07}_{-0.07} \times 10^{-2}$	$5.8^{+0.07}_{-0.07} \times 10^{-2}$
≥ 1 track with no missing inner hits	$3.9^{+0.14}_{-0.14} \times 10^{-2}$	$4.5^{+0.06}_{-0.06} \times 10^{-2}$	$4.6^{+0.06}_{-0.06} \times 10^{-2}$
≥ 1 track with no missing middle hits	$3.6^{+0.14}_{-0.14} \times 10^{-2}$	$4.5^{+0.06}_{-0.06} \times 10^{-2}$	$4.6^{+0.06}_{-0.06} \times 10^{-2}$
≥ 1 track with relative track isolation $< 5\%$	$2.9^{+0.11}_{-0.11} \times 10^{-2}$	$3.4^{+0.05}_{-0.05} \times 10^{-2}$	$3.5^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with $\lvert d_{\mathrm{xy}}\rvert < 0.02\,\mathrm{cm}$	$2.9^{+0.11}_{-0.11} \times 10^{-2}$	$3.4^{+0.05}_{-0.05} \times 10^{-2}$	$3.5^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with $\lvert d_z\rvert < 0.5\,\mathrm{cm}$	$2.9^{+0.11}_{-0.11} \times 10^{-2}$	$3.4^{+0.05}_{-0.05} \times 10^{-2}$	$3.5^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with $\Delta R(\text{track}, \text{jet}) > 0.5$	$2.8^{+0.11}_{-0.11} \times 10^{-2}$	$3.3^{+0.05}_{-0.05} \times 10^{-2}$	$3.5^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with $\Delta R(\text{track}, \text{electron}) > 0.15$	$2.6^{+0.10}_{-0.10} \times 10^{-2}$	$3.3^{+0.05}_{-0.05} \times 10^{-2}$	$3.4^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with $\Delta R(\text{track}, \text{muon}) > 0.15$	$2.6^{+0.10}_{-0.10} \times 10^{-2}$	$3.3^{+0.05}_{-0.05} \times 10^{-2}$	$3.4^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with $\Delta R(\text{track}, \tau_{\mathrm{h}}) > 0.15$	$2.6^{+0.10}_{-0.10} \times 10^{-2}$	$3.3^{+0.05}_{-0.05} \times 10^{-2}$	$3.4^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with $E_{\mathrm{calo}} < 10\,\mathrm{GeV}$	$2.5^{+0.10}_{-0.10} \times 10^{-2}$	$3.3^{+0.05}_{-0.05} \times 10^{-2}$	$3.4^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with ≥ 3 missing outer hits	$1.7^{+0.08}_{-0.08} \times 10^{-2}$	$2.2^{+0.04}_{-0.04} \times 10^{-2}$	$2.4^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with 4 layers	$3.8^{+0.37}_{-0.37} \times 10^{-3}$	$4.2^{+0.19}_{-0.19} \times 10^{-3}$	$4.3^{+0.19}_{-0.19} \times 10^{-3}$
≥ 1 track with 5 layers	$2.8^{+0.34}_{-0.34} \times 10^{-3}$	$3.6^{+0.18}_{-0.18} \times 10^{-3}$	$4.2^{+0.19}_{-0.19} \times 10^{-3}$
≥ 1 track with ≥ 6 layers	$1.1^{+0.06}_{-0.06} \times 10^{-2}$	$1.4^{+0.03}_{-0.03} \times 10^{-2}$	$1.5^{+0.04}_{-0.04} \times 10^{-2}$

Table 2: Cutflow comparison for 700 GeV, 100 cm, region 2018A

Cut	700 GeV, 100 cm, region 2018B		
	ϵ_i^{CMS}	ϵ_i^{sim}, HEPMC	ϵ_i^{sim}, HEPMC, no pileup
total	$1.0^{+0.01}_{-0.01}$	$1.0^{+0.00}_{-0.00}$	$1.0^{+0.00}_{-0.00}$
trigger	$1.5^{+0.02}_{-0.02} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$
passes $p_{\text{T}}^{\text{miss}}$ filters	$1.5^{+0.02}_{-0.02} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$
$p_{\text{T}}^{\text{miss}} > 120\,\text{GeV}$	$1.5^{+0.02}_{-0.02} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$
≥ 1 jet with $p_{\text{T}} > 110\,\text{GeV}$ and $\lvert\eta\rvert < 2.4$	$1.3^{+0.02}_{-0.02} \times 10^{-1}$	$1.3^{+0.01}_{-0.01} \times 10^{-1}$	$1.3^{+0.01}_{-0.01} \times 10^{-1}$
==0 pairs of jets with $\Delta\phi_{\text{jet, jet}} > 2.5$	$1.1^{+0.02}_{-0.02} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$
$\lvert\Delta\phi(\text{leading jet}, \vec{p}_{\text{T}}^{\text{miss}})\rvert > 0.5$	$1.1^{+0.02}_{-0.02} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$
≥ 1 track with $\lvert\eta\rvert < 2.1$	$1.1^{+0.02}_{-0.02} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$
≥ 1 track with $p_{\text{T}} > 55\,\text{GeV}$	$8.7^{+0.19}_{-0.19} \times 10^{-2}$	$9.1^{+0.08}_{-0.08} \times 10^{-2}$	$9.1^{+0.08}_{-0.08} \times 10^{-2}$
≥ 1 track passing fiducial selections	$6.1^{+0.15}_{-0.15} \times 10^{-2}$	$7.5^{+0.08}_{-0.08} \times 10^{-2}$	$7.5^{+0.08}_{-0.08} \times 10^{-2}$
≥ 1 track with ≥ 4 pixel hits	$3.9^{+0.13}_{-0.13} \times 10^{-2}$	$5.7^{+0.07}_{-0.07} \times 10^{-2}$	$5.8^{+0.07}_{-0.07} \times 10^{-2}$
≥ 1 track with no missing inner hits	$3.9^{+0.13}_{-0.13} \times 10^{-2}$	$4.5^{+0.06}_{-0.06} \times 10^{-2}$	$4.6^{+0.06}_{-0.06} \times 10^{-2}$
≥ 1 track with no missing middle hits	$3.6^{+0.11}_{-0.11} \times 10^{-2}$	$4.5^{+0.06}_{-0.06} \times 10^{-2}$	$4.6^{+0.06}_{-0.06} \times 10^{-2}$
≥ 1 track with relative track isolation $< 5\%$	$2.9^{+0.11}_{-0.11} \times 10^{-2}$	$3.4^{+0.05}_{-0.05} \times 10^{-2}$	$3.5^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with $\lvert d_{\text{xy}}\rvert < 0.02\,\text{cm}$	$2.9^{+0.11}_{-0.11} \times 10^{-2}$	$3.4^{+0.05}_{-0.05} \times 10^{-2}$	$3.5^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with $\lvert d_z\rvert < 0.5\,\text{cm}$	$2.9^{+0.11}_{-0.11} \times 10^{-2}$	$3.4^{+0.05}_{-0.05} \times 10^{-2}$	$3.5^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with $\Delta R(\text{track}, \text{jet}) > 0.5$	$2.8^{+0.11}_{-0.11} \times 10^{-2}$	$3.3^{+0.05}_{-0.05} \times 10^{-2}$	$3.5^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with $\Delta R(\text{track}, \text{electron}) > 0.15$	$2.7^{+0.11}_{-0.11} \times 10^{-2}$	$3.3^{+0.05}_{-0.05} \times 10^{-2}$	$3.4^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with $\Delta R(\text{track}, \text{muon}) > 0.15$	$2.6^{+0.09}_{-0.09} \times 10^{-2}$	$3.3^{+0.05}_{-0.05} \times 10^{-2}$	$3.4^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with $\Delta R(\text{track}, \tau_{\text{h}}) > 0.15$	$2.6^{+0.09}_{-0.09} \times 10^{-2}$	$3.3^{+0.05}_{-0.05} \times 10^{-2}$	$3.4^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with $E_{\text{calo}} < 10\,\text{GeV}$	$2.5^{+0.09}_{-0.09} \times 10^{-2}$	$3.3^{+0.05}_{-0.05} \times 10^{-2}$	$3.4^{+0.05}_{-0.05} \times 10^{-2}$
≥ 1 track with ≥ 3 missing outer hits	$1.7^{+0.08}_{-0.08} \times 10^{-2}$	$2.2^{+0.04}_{-0.04} \times 10^{-2}$	$2.4^{+0.04}_{-0.04} \times 10^{-2}$
$\phi(p_{\text{T}}^{\text{miss}}) < -1.6$ or $\phi(p_{\text{T}}^{\text{miss}}) > -0.6$	$1.5^{+0.08}_{-0.08} \times 10^{-2}$	$1.8^{+0.04}_{-0.04} \times 10^{-2}$	$1.9^{+0.04}_{-0.04} \times 10^{-2}$
≥ 1 track with 4 layers	$3.1^{+0.35}_{-0.35} \times 10^{-3}$	$3.5^{+0.17}_{-0.17} \times 10^{-3}$	$3.6^{+0.17}_{-0.17} \times 10^{-3}$
≥ 1 track with 5 layers	$2.3^{+0.30}_{-0.30} \times 10^{-3}$	$3.1^{+0.16}_{-0.16} \times 10^{-3}$	$3.5^{+0.17}_{-0.17} \times 10^{-3}$
≥ 1 track with ≥ 6 layers	$9.4^{+0.61}_{-0.61} \times 10^{-3}$	$1.2^{+0.03}_{-0.03} \times 10^{-2}$	$1.2^{+0.03}_{-0.03} \times 10^{-2}$

Table 3: Cutflow comparison for 700 GeV, 100 cm, region 2018B