	700 GeV, 10 cm, region 2017				
Cut	$\epsilon_i^{ ext{CMS}}$	$\epsilon_i^{\rm sim}$, HEPMC	$\epsilon_i^{\rm sim}$, CKKWL	$\epsilon_i^{\mathrm{sim}},\mathrm{MLM}$	
total	$1.0^{+0.00}_{-0.00}$	$1.0^{+0.00}_{-0.00}$	$1.0^{+0.00}_{-0.00}$	$1.0^{+0.00}_{-0.00}$	
trigger	$1.8^{+0.02}_{-0.02} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$	$1.8^{+0.01}_{-0.01} \times 10^{-1}$	$1.4^{+0.01}_{-0.01} \times 10^{-1}$	
passes $p_{\mathrm{T}}^{\mathrm{miss}}$ filters	$1.8^{+0.02}_{-0.02} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$	$1.8^{+0.01}_{-0.01} \times 10^{-1}$	$1.4^{+0.01}_{-0.01} \times 10^{-1}$	
$p_{\mathrm{T}}^{\mathrm{miss}} > 120\mathrm{GeV}$	$1.7^{+0.02}_{-0.02} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$	$1.8^{+0.01}_{-0.01} \times 10^{-1}$	$1.4^{+0.01}_{-0.01} \times 10^{-1}$	
≥ 1 jet with $p_{ m T} > 110{ m GeV}$ and $ \eta < 2.4$	$1.3^{+0.02}_{-0.02} \times 10^{-1}$	$1.3^{+0.01}_{-0.01} \times 10^{-1}$	$1.3^{+0.01}_{-0.01} \times 10^{-1}$	$10.0^{+0.09}_{-0.09} \times 10^{-2}$	
==0 pairs of jets with $\Delta \phi_{\rm jet,\ jet} > 2.5$	$1.1^{+0.02}_{-0.02} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$8.9^{+0.08}_{-0.09} \times 10^{-2}$	
$ \Delta\phi({ m leading\ jet}, \bar{p}_{ m T}^{ m miss}) > 0.5$	$1.1^{+0.02}_{-0.02} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$\begin{bmatrix} 8.9^{+0.08}_{-0.08} \times 10^{-2} \end{bmatrix}$	
≥ 1 track with $ \eta < 2.1$	$ \begin{array}{c c} 1.1^{+0.05}_{-0.02} \times 10^{-1} \\ 1.1^{+0.02}_{-0.02} \times 10^{-1} \\ 1.2^{+0.10}_{-0.02} \times 10^{-2} \end{array} $	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$\begin{bmatrix} 8.9^{+0.08}_{-0.08} \times 10^{-2} \end{bmatrix}$	
$\geq 1 \text{ track with } p_{\mathrm{T}} > 55 \mathrm{GeV}$	$4.8^{+0.10}_{-0.10} \times 10^{-2}$	$4.7^{+0.06}_{-0.06} \times 10^{-2}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$8.4^{+0.08}_{-0.08} \times 10^{-2}$	
≥ 1 track passing fiducial selections	$3.2^{+0.09}_{-0.09} \times 10^{-2}$	$3.6^{+0.05}_{-0.05} \times 10^{-2}$	$8.9^{+0.08}_{-0.08} \times 10^{-2}$	$ 7.1^{+0.07}_{-0.07} \times 10^{-2} $	
≥ 1 track with ≥ 4 pixel hits	$1.7^{+0.05}_{-0.05} \times 10^{-2}$	$2.6^{+0.05}_{-0.05} \times 10^{-2}$	$3.2^{+0.05}_{-0.05} \times 10^{-2}$	$2.5^{+0.05}_{-0.05} \times 10^{-2}$	
≥ 1 track with no missing inner hits	$1.7^{+0.06}_{-0.06} \times 10^{-2}$	$2.0^{+0.04}_{-0.04} \times 10^{-2}$	$2.4^{+0.04}_{-0.04} \times 10^{-2}$	$1.9^{+0.04}_{-0.04} \times 10^{-2}$	
≥ 1 track with no missing middle hits	$1.6^{+0.06}_{-0.06} \times 10^{-2}$	$2.0^{+0.04}_{-0.04} \times 10^{-2}$	$2.4^{+0.04}_{-0.04} \times 10^{-2}$	$1.9^{+0.04}_{-0.04} \times 10^{-2}$	
≥ 1 track with relative track isolation $< 5\%$	$5.3^{+0.33}_{-0.33} \times 10^{-3}$	$6.2^{+0.23}_{-0.23} \times 10^{-3}$	$6.8^{+0.24}_{-0.24} \times 10^{-3}$	$5.4^{+0.21}_{-0.21} \times 10^{-3}$	
$\geq 1 \text{ track with } d_{xy} < 0.02 \text{cm}$	$5.3^{+0.33}_{-0.33} \times 10^{-3}$	$6.2^{+0.23}_{-0.23} \times 10^{-3}$	$6.8^{+0.24}_{-0.24} \times 10^{-3}$	$5.4^{+0.21}_{-0.21} \times 10^{-3}$	
$\geq 1 \text{ track with } d_z < 0.5 \text{ cm}$	$\begin{bmatrix} 5.3_{-0.33}^{+0.33} \times 10^{-3} \\ 5.1_{-0.33}^{+0.33} \times 10^{-3} \end{bmatrix}$	$\begin{array}{c} 6.2^{+0.23}_{-0.23} \times 10^{-3} \\ 6.1^{+0.23}_{-0.23} \times 10^{-3} \end{array}$	$\begin{vmatrix} 6.8 + 0.24 \\ -0.24 \\ 6.8 + 0.24 \\ -0.24 \\ \times 10^{-3} \end{vmatrix}$	$5.4^{+0.21}_{-0.21} \times 10^{-3}$	
≥ 1 track with $\Delta R({ m track, jet}) > 0.5$	$5.1^{+0.33}_{-0.33} \times 10^{-3}$	$6.1^{+0.23}_{-0.23} \times 10^{-3}$	$6.8^{+0.24}_{-0.24} \times 10^{-3}$	$5.4^{+0.21}_{-0.21} \times 10^{-3}$ $5.3^{+0.21}_{-0.21} \times 10^{-3}$ $5.3^{+0.21}_{-0.21} \times 10^{-3}$	
≥ 1 track with $\Delta R(\text{track}, \text{electron}) > 0.15$	$1.50^{+0.31} \times 10^{-3}$	$6.1^{+0.23}_{-0.23} \times 10^{-3}$	$\begin{array}{c} 6.8^{+0.24}_{-0.24} \times 10^{-3} \\ 6.7^{+0.24}_{-0.24} \times 10^{-3} \\ 6.7^{+0.24}_{-0.24} \times 10^{-3} \end{array}$	$5.3^{+0.21}_{-0.21} \times 10^{-3}$	
$\geq 1 \text{ track with } \Delta R(\text{track, muon}) > 0.15$	$5.0^{+0.31} \times 10^{-3}$	$\begin{array}{c} 6.1_{-0.23}^{+0.23} \times 10^{-3} \\ 6.1_{-0.23}^{+0.23} \times 10^{-3} \\ 6.1_{-0.23}^{+0.23} \times 10^{-3} \end{array}$	$6.7^{+0.24}_{-0.24} \times 10^{-3}$	$5.3^{+0.21}_{-0.21} \times 10^{-3} 5.3^{+0.21}_{-0.21} \times 10^{-3} 5.3^{+0.21}_{-0.21} \times 10^{-3}$	
$\geq 1 \text{ track with } \Delta R(\text{track}, \tau_{\text{h}}) > 0.15$	1 - 0+0.31 40-3	$ 6.1^{+0.23}_{-0.23} \times 10^{-3} $	$6.7^{+0.24}_{-0.24} \times 10^{-3}$	$5.3^{+0.21}_{-0.21} \times 10^{-3}$	
$\geq 1 \text{ track with } E_{\text{calo}} < 10 \text{GeV}$	$4.9^{+0.31}_{-0.21} \times 10^{-3}$	$1 \cdot c \cdot 1 + 0.23 \cdot . \cdot 10 - 3$	$6.7^{+0.24}_{-0.24} \times 10^{-3}$	$5.3^{+0.21}_{-0.21} \times 10^{-3}$	
≥ 1 track with ≥ 3 missing outer hits	$4.9^{+0.31}_{-0.31} \times 10^{-3}$	$\begin{array}{c} 6.1_{-0.23}^{+0.23} \times 10^{-6} \\ 6.1_{-0.23}^{+0.23} \times 10^{-3} \end{array}$	$6.7^{+0.24}_{-0.24} \times 10^{-3}$	$5.2^{+0.21}_{-0.21} \times 10^{-3}$	
≥ 1 track 4 layers	$3.0^{+0.24}_{-0.24} \times 10^{-3}$	$3.4^{+0.17}_{-0.17} \times 10^{-3}$	$3.6^{+0.18}_{-0.18} \times 10^{-3}$	$2.8^{+0.16}_{-0.16} \times 10^{-3}$	
≥ 1 track 5 layers	$1.1^{+0.16}_{-0.16} \times 10^{-3}$	$1.3^{+0.11}_{-0.11} \times 10^{-3}$	$1.5^{+0.11}_{-0.11} \times 10^{-3}$	$1.2^{+0.10}_{-0.10} \times 10^{-3}$	
$\geq 1 \text{ track} \geq 6 \text{ layers}$	$8.1^{+1.21}_{-1.21} \times 10^{-4}$	$1.2^{+0.10}_{-0.10} \times 10^{-3}$	$1.5^{+0.11}_{-0.11} \times 10^{-3}$	$1.1^{+0.10}_{-0.10} \times 10^{-3}$	

Table 1: Cutflow comparison for 700 GeV, 10 cm, region 2017

	700 GeV, 10 cm, region 2018A				
Cut	$\epsilon_i^{ ext{CMS}}$	$\epsilon_i^{\rm sim}$, HEPMC	$\epsilon_i^{\rm sim}$, CKKWL	$\epsilon_i^{\rm sim},{ m MLM}$	
total	$1.0^{+0.00}_{-0.00}$	$1.0^{+0.00}_{-0.00}$	$1.0^{+0.00}_{-0.00}$	$1.0^{+0.00}_{-0.00}$	
trigger	$1.5^{+0.02}_{-0.02} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$	$1.8^{+0.01}_{-0.01} \times 10^{-1}$	$1.4^{+0.01}_{-0.01} \times 10^{-1}$	
passes $p_{\mathrm{T}}^{\mathrm{miss}}$ filters	$1.4^{+0.02}_{-0.02} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$	$1.8^{+0.01}_{-0.01} \times 10^{-1}$	$1.4^{+0.01}_{-0.01} \times 10^{-1}$	
$p_{\mathrm{T}}^{\mathrm{miss}} > 120\mathrm{GeV}$	$1.4^{+0.02}_{-0.02} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$	$1.8^{+0.01}_{-0.01} \times 10^{-1}$	$1.4^{+0.01}_{-0.01} \times 10^{-1}$	
≥ 1 jet with $p_{ m T} > 110{ m GeV}$ and $ \eta < 2.4$	$1.3^{+0.02}_{-0.02} \times 10^{-1}$	$1.3^{+0.01}_{-0.01} \times 10^{-1}$	$1.3^{+0.01}_{-0.01} \times 10^{-1}$	$10.0^{+0.09}_{-0.09} \times 10^{-2}$	
==0 pairs of jets with $\Delta \phi_{\rm jet,\ jet} > 2.5$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$8.9^{+0.08}_{-0.08} \times 10^{-2}$	
$ \Delta\phi({ m leading\ jet}, \bar{p}_{ m T}^{ m miss}) > 0.5$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$8.9^{+0.08}_{-0.08} \times 10^{-2}$	
≥ 1 track with $ \eta < 2.1$	$1.1^{+0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$ 8.9^{+0.08}_{-0.08} \times 10^{-2} $	
$\geq 1 \text{ track with } p_{\mathrm{T}} > 55 \mathrm{GeV}$	$4.7^{+0.10}_{-0.10} \times 10^{-2}$	$4.7^{+0.06}_{-0.06} \times 10^{-2}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$8.4^{+0.08}_{-0.08} \times 10^{-2}$	
≥ 1 track passing fiducial selections	$3.1^{+0.08}_{-0.08} \times 10^{-2}$	$3.6^{+0.05}_{-0.05} \times 10^{-2}$	$8.9^{+0.08}_{-0.08} \times 10^{-2}$	$ 7.1^{+0.07}_{-0.07} \times 10^{-2} $	
≥ 1 track with ≥ 4 pixel hits	$1.7^{+0.06}_{-0.06} \times 10^{-2}$	$2.6^{+0.05}_{-0.05} \times 10^{-2}$	$3.2^{+0.05}_{-0.05} \times 10^{-2}$	$2.5^{+0.05}_{-0.05} \times 10^{-2}$	
≥ 1 track with no missing inner hits	$1.7^{+0.06}_{-0.06} \times 10^{-2}$	$2.0^{+0.04}_{-0.04} \times 10^{-2}$	$2.4^{+0.04}_{-0.04} \times 10^{-2}$	$1.9^{+0.04}_{-0.04} \times 10^{-2}$	
≥ 1 track with no missing middle hits	$1.5^{+0.05}_{-0.05} \times 10^{-2}$	$2.0^{+0.04}_{-0.04} \times 10^{-2}$	$2.4^{+0.04}_{-0.04} \times 10^{-2}$	$1.9^{+0.04}_{-0.04} \times 10^{-2}$	
≥ 1 track with relative track isolation $< 5\%$	$5.3^{+0.34}_{-0.34} \times 10^{-3}$	$6.2^{+0.23}_{-0.23} \times 10^{-3}$	$6.8^{+0.24}_{-0.24} \times 10^{-3}$	$5.4^{+0.21}_{-0.21} \times 10^{-3}$	
$\geq 1 \text{ track with } d_{xy} < 0.02 \text{cm}$	$5.1^{+0.34}_{-0.34} \times 10^{-3}$	$6.2^{+0.23}_{-0.23} \times 10^{-3}$	$6.8^{+0.24}_{-0.24} \times 10^{-3}$	$5.4^{+0.21}_{-0.21} \times 10^{-3}$	
$\geq 1 \text{ track with } d_z < 0.5 \text{ cm}$	$5.1^{+0.31}_{-0.31} \times 10^{-3}$	$6.2^{+0.23}_{-0.23} \times 10^{-3}$	$\begin{vmatrix} 6.8 + 0.24 \\ -0.24 \\ 6.8 + 0.24 \\ -0.24 \\ \times 10^{-3} \end{vmatrix}$	$5.4^{+0.21}_{-0.21} \times 10^{-3}$	
≥ 1 track with $\Delta R({ m track, jet}) > 0.5$	$4.9^{+0.31}_{-0.31} \times 10^{-3}$	$\begin{array}{c} 0.2_{-0.23}^{-0.23} \times 10^{-3} \\ 6.1_{-0.23}^{+0.23} \times 10^{-3} \end{array}$	$6.8^{+0.24}_{-0.24} \times 10^{-3}$	$\begin{array}{c} 5.4_{-0.21}^{+0.21} \times 10^{-3} \\ 5.3_{-0.21}^{+0.21} \times 10^{-3} \\ 5.3_{-0.21}^{+0.21} \times 10^{-3} \end{array}$	
≥ 1 track with $\Delta R(\text{track}, \text{electron}) > 0.15$	$\begin{array}{c} 4.9^{+0.31}_{-0.31} \times 10^{-3} \\ 4.7^{+0.31}_{-0.31} \times 10^{-3} \end{array}$	$6.1^{+0.23}_{-0.23} \times 10^{-3}$	$\begin{bmatrix} 6.8_{-0.24}^{+0.24} \times 10^{-3} \\ 6.7_{-0.24}^{+0.24} \times 10^{-3} \\ 6.7_{-0.24}^{+0.24} \times 10^{-3} \end{bmatrix}$	$5.3^{+0.21}_{-0.21} \times 10^{-3}$	
≥ 1 track with $\Delta R(\text{track}, \text{muon}) > 0.15$	$4.7^{+0.31}_{-0.31} \times 10^{-3}$	$\begin{array}{c} 6.1_{-0.23}^{+0.23} \times 10^{-3} \\ 6.1_{-0.23}^{+0.23} \times 10^{-3} \\ 6.1_{-0.23}^{+0.23} \times 10^{-3} \end{array}$	$6.7^{+0.21}_{-0.24} \times 10^{-3}$	$\begin{array}{c c} 5.3^{+0.21}_{-0.21} \times 10^{-3} \\ 5.3^{+0.21}_{-0.21} \times 10^{-3} \end{array}$	
$\geq 1 \text{ track with } \Delta R(\text{track}, \tau_{\text{h}}) > 0.15$	$4.7^{+0.31}_{-0.21} \times 10^{-3}$	$6.1^{+0.23}_{-0.23} \times 10^{-3}$	$6.7^{+0.24}_{-0.24} \times 10^{-3}$	$5.3^{+0.21}_{-0.21} \times 10^{-3}$	
$\geq 1 \text{ track with } E_{\text{calo}} < 10 \text{GeV}$	$4.7^{+0.31}_{-0.31} \times 10^{-3}$	$1 \cdot c \cdot 1 + 0.23 \cdot . \cdot 10 - 3$	$6.7^{+0.24}_{-0.24} \times 10^{-3}$	$5.3^{+0.21}_{-0.21} \times 10^{-3}$	
≥ 1 track with ≥ 3 missing outer hits	$4.6^{+0.31}_{-0.31} \times 10^{-3}$	$\begin{array}{c} 6.1_{-0.23}^{+0.23} \times 10^{-6} \\ 6.1_{-0.23}^{+0.23} \times 10^{-3} \end{array}$	$6.7^{+0.24}_{-0.24} \times 10^{-3}$	$5.2^{+0.21}_{-0.21} \times 10^{-3}$	
≥ 1 track 4 layers	$2.8^{+0.24}_{-0.24} \times 10^{-3}$	$3.4^{+0.17}_{-0.17} \times 10^{-3}$	$3.6^{+0.18}_{-0.18} \times 10^{-3}$	$2.9^{+0.16}_{-0.16} \times 10^{-3}$	
≥ 1 track 5 layers	$9.2^{+1.36}_{-1.36} \times 10^{-4}$	$1.3^{+0.11}_{-0.11} \times 10^{-3}$	$1.4^{+0.11}_{-0.11} \times 10^{-3}$	$1.2^{+0.10}_{-0.10} \times 10^{-3}$	
$\geq 1 \text{ track} \geq 6 \text{ layers}$	$9.5^{+1.36}_{-1.36} \times 10^{-4}$	$1.2^{+0.10}_{-0.10} \times 10^{-3}$	$1.5^{+0.11}_{-0.11} \times 10^{-3}$	$1.1^{+0.10}_{-0.10} \times 10^{-3}$	

Table 2: Cutflow comparison for $700~{\rm GeV},\,10~{\rm cm},\,{\rm region}~2018{\rm A}$

	700 GeV, 10 cm, region 2018B				
Cut	$\epsilon_i^{ ext{CMS}}$	$\epsilon_i^{\rm sim},{\rm HEPMC}$	ϵ_i^{sim} , CKKWL	$\epsilon_i^{\rm sim},{ m MLM}$	
total	$\begin{array}{ c c c c }\hline 1.0^{+0.00}_{-0.00} \\ 1.5^{+0.02}_{-0.02} \times 10^{-1} \\ \hline \end{array}$	$1.0^{+0.00}_{-0.00}$	$1.0^{+0.00}_{-0.00}$	$1.0^{+0.00}_{-0.00}$	
trigger	$1.5^{+0.02}_{-0.02} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$	$1.8^{+0.01}_{-0.01} \times 10^{-1}$	$1.4^{+0.01}_{-0.01} \times 10^{-1}$	
passes $p_{\mathrm{T}}^{\mathrm{miss}}$ filters	$1.4^{+0.02}_{-0.02} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$	$1.8^{+0.01}_{-0.01} \times 10^{-1}$	$1.4^{+0.01}_{-0.01} \times 10^{-1}$	
$p_{\mathrm{T}}^{\mathrm{miss}} > 120\mathrm{GeV}$	$1.4^{+0.02}_{-0.02} \times 10^{-1}$	$1.5^{+0.01}_{-0.01} \times 10^{-1}$	$1.8^{+0.01}_{-0.01} \times 10^{-1}$	$1.4^{+0.01}_{-0.01} \times 10^{-1}$	
≥ 1 jet with $p_{\mathrm{T}} > 110\mathrm{GeV}$ and $ \eta < 2.4$	$1.3^{+0.02}_{-0.02} \times 10^{-1}$	$1.3^{+0.01}_{-0.01} \times 10^{-1}$	$1.3^{+0.01}_{-0.01} \times 10^{-1}$	$10.0^{+0.09}_{-0.09} \times 10^{-2}$	
==0 pairs of jets with $\Delta \phi_{\rm jet,\ jet} > 2.5$	$1.0_{-0.02}^{+0.02} \times 10^{-1}$ $1.1_{-0.01}^{+0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$8.9^{+0.09}_{-0.08} \times 10^{-2}$	
$ \Delta\phi({ m leading\ jet}, ec{p}_{ m T}^{ m miss}) > 0.5$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$8.9^{+0.08}_{-0.08} \times 10^{-2}$	
≥ 1 track with $ \eta < 2.1$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$8.9^{+0.08}_{-0.08} \times 10^{-2}$	
$\geq 1 \text{ track with } p_{\mathrm{T}} > 55 \mathrm{GeV}$	$4.7^{+0.09}_{-0.09} \times 10^{-2}$	$4.7^{+0.06}_{-0.06} \times 10^{-2}$	$1.1^{+0.01}_{-0.01} \times 10^{-1}$	$8.4^{+0.08}_{-0.08} \times 10^{-2}$	
≥ 1 track passing fiducial selections	$3.1^{+0.07}_{-0.07} \times 10^{-2}$	$3.6^{+0.05}_{-0.05} \times 10^{-2}$	$8.9^{+0.08}_{-0.08} \times 10^{-2}$	$7.1^{+0.07}_{-0.07} \times 10^{-2}$	
≥ 1 track with ≥ 4 pixel hits	$1.7^{+0.06}_{-0.06} \times 10^{-2}$	$2.6^{+0.05}_{-0.05} \times 10^{-2}$	$3.2^{+0.05}_{-0.05} \times 10^{-2}$	$2.5^{+0.05}_{-0.05} \times 10^{-2}$	
≥ 1 track with no missing inner hits	$1.7^{+0.06}_{-0.06} \times 10^{-2}$	$2.0^{+0.04}_{-0.04} \times 10^{-2}$	$2.4^{+0.04}_{-0.04} \times 10^{-2}$	$1.9^{+0.04}_{-0.04} \times 10^{-2}$	
≥ 1 track with no missing middle hits	$1.5^{+0.06}_{-0.06} \times 10^{-2}$ $1.5^{+0.06}_{-0.08} \times 10^{-2}$	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	$2.4^{+0.04}_{-0.04} \times 10^{-2}$	$1.9^{+0.04}_{-0.04} \times 10^{-2}$	
≥ 1 track with relative track isolation $< 5\%$	$ \begin{vmatrix} 5.3_{-0.33}^{+0.33} \times 10^{-3} \\ 5.2_{-0.33}^{+0.33} \times 10^{-3} \\ 5.2_{-0.32}^{+0.32} \times 10^{-3} \end{vmatrix} $	$16.2^{+0.23}_{-0.23} \times 10^{-3}$	$\begin{vmatrix} 6.8 + 0.24 \\ -0.24 \\ 6.8 + 0.24 \\ -0.24 \\ \times 10^{-3} \end{vmatrix}$	$5.4^{+0.21}_{-0.21} \times 10^{-3}$	
$\geq 1 \text{ track with } d_{xy} < 0.02 \text{cm}$	$5.2^{+0.33}_{-0.33} \times 10^{-3}$	$ \begin{array}{c} 6.2_{-0.23}^{+0.23} \times 10^{-3} \\ 6.2_{-0.23}^{+0.23} \times 10^{-3} \\ 6.2_{-0.23}^{+0.23} \times 10^{-3} \end{array} $	$\begin{array}{c} 6.8_{-0.24}^{+0.24} \times 10^{-3} \\ 6.8_{-0.24}^{+0.24} \times 10^{-3} \\ 6.8_{-0.24}^{+0.24} \times 10^{-3} \end{array}$	$5.4^{+0.21}_{-0.21} \times 10^{-3}$	
≥ 1 track with $ d_z < 0.5 \mathrm{cm}$	$\begin{array}{c} 5.2_{-0.32}^{+0.32} \times 10^{-3} \\ 5.0_{-0.32}^{+0.32} \times 10^{-3} \\ 4.0_{-0.32}^{+0.32} \times 10^{-3} \end{array}$	$6.2^{+0.23}_{-0.23} \times 10^{-3}$	$\begin{array}{c} 6.8_{-0.24}^{+0.24} \times 10^{-3} \\ 6.8_{-0.24}^{+0.24} \times 10^{-3} \\ 6.7_{-0.24}^{+0.24} \times 10^{-3} \end{array}$	$\begin{bmatrix} 5.4_{-0.21}^{+0.21} \times 10^{-3} \\ 5.4_{-0.21}^{+0.21} \times 10^{-3} \end{bmatrix}$	
≥ 1 track with $\Delta R({ m track, jet}) > 0.5$	$5.0^{+0.32}_{-0.32} \times 10^{-3}$	$6.1^{+0.23}_{-0.23} \times 10^{-3}$	$6.8^{+0.24}_{-0.24} \times 10^{-3}$	$\begin{bmatrix} 3.4_{-0.21} \times 10^{-1} \\ 5.3_{-0.21}^{+0.21} \times 10^{-3} \end{bmatrix}$	
≥ 1 track with $\Delta R(\text{track}, \text{electron}) > 0.15$	$4.8^{+0.32}_{-0.32} \times 10^{-9}$	$6.1^{+0.23}_{-0.23} \times 10^{-3}$	$0.7_{-0.24}^{+0.24} \times 10^{-6}$	$5.3^{+0.21}_{-0.21} \times 10^{-3}$	
$\geq 1 \text{ track with } \Delta R(\text{track}, \text{muon}) > 0.15$	$4.8^{+0.32}_{-0.32} \times 10^{-3}$	$6.1^{+0.23}_{-0.23} \times 10^{-3}$	$6.7^{+0.24}_{-0.24} \times 10^{-3}$	$5.3^{+0.21}_{-0.21} \times 10^{-3}$	
≥ 1 track with $\Delta R({\rm track}, \tau_{\rm h}) > 0.15$	$4.8^{+0.32}_{-0.32} \times 10^{-3}$	$6.1^{+0.23}_{-0.23} \times 10^{-3}$	$6.7^{+0.24}_{-0.24} \times 10^{-3}$	$5.3^{+0.21}_{-0.21} \times 10^{-3}$	
$\geq 1 \text{ track with } E_{\text{calo}} < 10 \text{GeV}$	$4.7^{+0.32}_{-0.32} \times 10^{-3}$	$6.1^{+0.23}_{-0.23} \times 10^{-3}$	$6.7^{+0.24}_{-0.24} \times 10^{-3}$	$5.3^{+0.21}_{-0.21} \times 10^{-3}$	
≥ 1 track with ≥ 3 missing outer hits	$4.7^{+0.32}_{-0.32} \times 10^{-3}$	$6.1_{-0.23}^{+0.23} \times 10^{-3}$	$6.7^{+0.24}_{-0.24} \times 10^{-3}$	$5.2^{+0.21}_{-0.21} \times 10^{-3}$	
$\phi(p_{\rm T}^{\rm miss}) < -1.6 \text{ or } \phi(p_{\rm T}^{\rm miss}) > -0.6$	$3.8^{+0.28}_{-0.28} \times 10^{-3}$	$5.1^{+0.21}_{-0.21} \times 10^{-3}$	$\begin{array}{c} 5.7_{-0.24}^{-0.24} \times 10^{-3} \\ 5.6_{-0.22}^{+0.22} \times 10^{-3} \\ 3.1_{-0.16}^{+0.16} \times 10^{-3} \end{array}$	$4.3^{+0.19}_{-0.19} \times 10^{-3}$	
≥ 1 track 4 layers	$2.3^{+0.22}_{-0.22} \times 10^{-3}$	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	$3.1^{+0.16}_{-0.16} \times 10^{-3}$	$\begin{vmatrix} 4.3^{+0.19}_{-0.19} \times 10^{-3} \\ 2.3^{+0.14}_{-0.14} \times 10^{-3} \end{vmatrix}$	
≥ 1 track 5 layers	$\begin{array}{c} 3.8_{-0.28}^{+0.28} \times 10^{-3} \\ 2.3_{-0.22}^{+0.22} \times 10^{-3} \\ 7.2_{-1.30}^{+1.30} \times 10^{-4} \end{array}$	$1.1^{+0.10}_{-0.10} \times 10^{-3}$	$\begin{array}{c} 3.1_{-0.16}^{+0.16} \times 10^{-3} \\ 1.1_{-0.10}^{+0.10} \times 10^{-3} \\ 1.2_{-0.10}^{+0.10} \times 10^{-3} \end{array}$	$1.0^{+0.09}_{-0.09} \times 10^{-3}$	
$\geq 1 \text{ track} \geq 6 \text{ layers}$	$8.0^{+1.30}_{-1.30} \times 10^{-4}$	$9.7^{+0.91}_{-0.91} \times 10^{-4}$	$1.2^{+0.10}_{-0.10} \times 10^{-3}$	$8.8^{+0.87}_{-0.87} \times 10^{-4}$	

Table 3: Cutflow comparison for 700 GeV, 10 cm, region 2018B