$$L(\{N_{\varpi}^{\mathrm{SS,obs}}\}|\{\xi(\eta,p_{\mathrm{T}})\}) = \prod_{\varpi} \mathcal{P}\left(N_{\varpi}^{\mathrm{SS,obs}}|w_{\mathrm{flip}}(\xi(\eta_1,p_{\mathrm{T},1}),\xi(\eta_2,p_{\mathrm{T},2})) \times N_{\varpi}^{\mathrm{OS+SS,obs}}\right) \tag{1}$$

$$\begin{pmatrix} n_{\mathrm{T}} \\ n_{\mathrm{L}} \end{pmatrix} = \begin{pmatrix} \varepsilon_r & \varepsilon_f \\ 1-\varepsilon_r & 1-\varepsilon_f \end{pmatrix} \begin{pmatrix} n_{\mathrm{R}} \\ n_{\mathrm{F}} \end{pmatrix} \tag{2}$$

$$\varepsilon_f = \frac{n_{\mathrm{signal}}^{\mathrm{data}} - n_{\mathrm{signal}}^{\mathrm{MC}}}{n_{\mathrm{baseline}}^{\mathrm{data}} - n_{\mathrm{baseline}}^{\mathrm{MC}}}$$

$$\varepsilon_r = \frac{n_{\mathrm{signal}}^{\mathrm{data}}}{n_{\mathrm{baseline}}^{\mathrm{data}} - n_{\mathrm{baseline}}^{\mathrm{BKG}}}$$

$10 < p_{\mathrm{T}} < 12$	$12 < p_{\mathrm{T}} < 14$	$14 < p_{\mathrm{T}} < 17$	$17 < p_{\mathrm{T}} < 20$
$0.10 \pm 0.01 \pm 0.00$	$0.10 \pm 0.01 \pm 0.01$	$0.12 \pm 0.01 \pm 0.01$	$0.08 \pm 0.02 \pm 0.00$
$20 < p_{\mathrm{T}} < 25$	$25 < p_{\mathrm{T}} < 30$	$30 < p_{\mathrm{T}} < 40$	$40 > p_{\mathrm{T}}$
$0.07 \pm 0.02 \pm 0.01$	$0.11 \pm 0.03 \pm 0.01$	$0.20 \pm 0.07 \pm 0.03$	$0.25 \pm 0.10 \pm 0.05$

Table 1: Electron fake rate measured in data and the associated statistical uncertainty. The systematic uncertainty originating from the subtraction of "backgrounds" with only prompt leptons is also displayed.

$10 < p_{\mathrm{T}} < 12$ GeV		$12 < p_{\mathrm{T}} < 14$	
$\lvert\eta\rvert < 2.3$	$\lvert\eta\rvert > 2.3$	$\lvert\eta\rvert < 2.3$	$\lvert\eta\rvert > 2.3$
$0.14 \pm 0.01 \pm 0.00$	$0.22 \pm 0.05 \pm 0.00$	$0.11 \pm 0.01 \pm 0.00$	$0.24 \pm 0.06 \pm 0.00$
$14 < p_{\mathrm{T}} < 17$		$17 < p_{\mathrm{T}} < 20$ GeV	
$\lvert\eta\rvert < 2.3$	$\lvert\eta\rvert > 2.3$	$\lvert\eta\rvert < 2.3$	$\lvert\eta\rvert > 2.3$
$0.12 \pm 0.01 \pm 0.00$	$0.09 \pm 0.05 \pm 0.00$	$0.09 \pm 0.01 \pm 0.00$	$0.21 \pm 0.07 \pm 0.00$
$20 < p_{\mathrm{T}} < 30$	$30 < p_{\mathrm{T}} < 40$	$40 < p_{\mathrm{T}} < 60$	$p_{\mathrm{T}} > 60$
$0.07 \pm 0.02 \pm 0.00$	$0.12 \pm 0.05 \pm 0.01$	$0.16 \pm 0.09 \pm 0.04$	$0.49 \pm 0.10 \pm 0.07$

Table 2: Muon fake rate measured in data and the associated statistical uncertainty. The systematic uncertainty originating from the subtraction of "backgrounds" with only prompt leptons is also displayed.