# Erratum to "Resilience-Motivated Distribution System Restoration Considering Electricity-Water-Gas Interdependency"

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IN [1], during typesetting process, some mistakes were made in symbols. The errors and corrections are listed below. The errors are highlighted in blue. The corrections are highlighted in red.

| Location | Original expression | Corrections |
|---|---|---|
| Equ. (5) | $\sum_{k:k\to i}(S_{ki}-z_{ki}l_{ki})+s_i=\sum_{k:k\to i}S_{ij}, i\in\mathcal{N}^{\mathrm{E}}$ | $\sum_{k:k\to i}(S_{ki}-z_{ki}l_{ki})+s_i=\sum_{j:i\to j}S_{ij}, i\in\mathcal{N}^{\mathrm{E}}$ |
| Equ. (17) | $\sum_{k:k\to i}W_{ki}+(w_i^{\mathrm{WR}}-w_i)=\sum_{k:k\to i}W_{ij}, i\in\mathcal{N}^{\mathrm{W}}$ | $\sum_{k:k\to i}W_{ki}+(w_i^{\mathrm{WR}}-w_i)=\sum_{j:i\to j}W_{ij}, i\in\mathcal{N}^{\mathrm{W}}$ |
| Equ. (24) | $\sum_{k:k\to i}G_{ki}+(g_i^{\mathrm{GS}}-g_i)=\sum_{k:k\to i}G_{ij}, i\in\mathcal{N}^{\mathrm{G}}$ | $\sum_{k:k\to i}G_{ki}+(g_i^{\mathrm{GS}}-g_i)=\sum_{j:i\to j}G_{ij}, i\in\mathcal{N}^{\mathrm{G}}$ |
| Equ. (28) | $\begin{cases}\psi_i=\psi_j=\gamma\psi_i & if\ \chi_m=1\\ G_{ij}=0 & if\ \chi_m=0\end{cases}$ $i\to j\in\mathcal{E}_{\mathrm{W}}^{\mathrm{comp}}, m\in\mathcal{N}^{\mathrm{comp}}$ | $\begin{cases}\psi_i\le\psi_j\le\gamma\psi_i & if\ \chi_m=1\\ G_{ij}=0 & if\ \chi_m=0\end{cases}$ $i\to j\in\mathcal{E}_{\mathrm{G}}^{\mathrm{comp}}, m\in\mathcal{N}^{\mathrm{comp}}$ |
| Equ. (32) | $P_m^{\mathrm{comp}}=\sigma G_{ij}, m\in\mathcal{N}^{\mathrm{comp}}, i\to j\in\mathcal{E}_{\mathrm{W}}^{\mathrm{comp}}$ | $P_m^{\mathrm{comp}}=\sigma G_{ij}, m\in\mathcal{N}^{\mathrm{comp}}, i\to j\in\mathcal{E}_{\mathrm{G}}^{\mathrm{comp}}$ |
| Equ. (38) | $-M(1-\chi_m)-(\alpha W_{ij}+\beta)=\Delta h_{ij}$, $i\to j\in\mathcal{E}_{\mathrm{G}}^{\mathrm{pump}}, m\in\mathcal{N}^{\mathrm{pump}}$ | $-M(1-\chi_m)-(\alpha W_{ij}+\beta)\le\Delta h_{ij}$, $i\to j\in\mathcal{E}_{\mathrm{W}}^{\mathrm{pump}}, m\in\mathcal{N}^{\mathrm{pump}}$ |
| Equ. (39) | $\Delta h_{ij}=M(1-\chi_m)-(\alpha W_{ij}+\beta)$, $i\to j\in\mathcal{E}_{\mathrm{G}}^{\mathrm{pump}}, m\in\mathcal{N}^{\mathrm{pump}}$ | $\Delta h_{ij}\le M(1-\chi_m)-(\alpha W_{ij}+\beta)$, $i\to j\in\mathcal{E}_{\mathrm{W}}^{\mathrm{pump}}, m\in\mathcal{N}^{\mathrm{pump}}$ |
| Equ. (40) | $W_{ij}=\chi_m M, i\to j\in\mathcal{E}_{\mathrm{W}}^{\mathrm{pump}}, m\in\mathcal{N}^{\mathrm{pump}}$ | $W_{ij}\le\chi_m M, i\to j\in\mathcal{E}_{\mathrm{W}}^{\mathrm{pump}}, m\in\mathcal{N}^{\mathrm{pump}}$ |
| Equ. (41) | $C_{ij}\Delta\psi_{ij}=G_{ij}^2, i\to j\in\mathcal{E}_{\mathrm{G}}^{\mathrm{pipe}}$ | $C_{ij}\Delta\psi_{ij}\ge G_{ij}^2, i\to j\in\mathcal{E}_{\mathrm{G}}^{\mathrm{pipe}}$ |
| Equ. (42) | $-M(1-\chi_m)+\psi_i=\psi_j$, $i\to j\in\mathcal{E}_{\mathrm{G}}^{\mathrm{comp}}, m\in\mathcal{N}^{\mathrm{comp}}$ | $-M(1-\chi_m)+\psi_i\le\psi_j$, $i\to j\in\mathcal{E}_{\mathrm{G}}^{\mathrm{comp}}, m\in\mathcal{N}^{\mathrm{comp}}$ |
| Equ. (43) | $\psi_j=M(1-\chi_m)+\gamma\psi_i$, $i\to j\in\mathcal{E}_{\mathrm{G}}^{\mathrm{comp}}, m\in\mathcal{N}^{\mathrm{comp}}$ | $\psi_j\le M(1-\chi_m)+\gamma\psi_i$, $i\to j\in\mathcal{E}_{\mathrm{G}}^{\mathrm{comp}}, m\in\mathcal{N}^{\mathrm{comp}}$ |
| Equ. (44) | $G_{ij}=\chi_m M, i\to j\in\mathcal{E}_{\mathrm{G}}^{\mathrm{comp}}, m\in\mathcal{N}^{\mathrm{comp}}$ | $G_{ij}\le\chi_m M, i\to j\in\mathcal{E}_{\mathrm{G}}^{\mathrm{comp}}, m\in\mathcal{N}^{\mathrm{comp}}$ |
| Equ. (46) | $P_m^{\mathrm{pump}}=\frac{\rho^{\mathrm{W}}g^{\mathrm{W}}}{\eta^{\mathrm{pump}}}(\alpha W_{ij}^2+\beta W_{ij})$, $m\in\mathcal{N}^{\mathrm{pump}}, i\to j\in\mathcal{E}_{\mathrm{W}}^{\mathrm{pump}}$ | $P_m^{\mathrm{pump}}\ge\frac{\rho^{\mathrm{W}}g^{\mathrm{W}}}{\eta^{\mathrm{pump}}}(\alpha W_{ij}^2+\beta W_{ij})$, $m\in\mathcal{N}^{\mathrm{pump}}, i\to j\in\mathcal{E}_{\mathrm{W}}^{\mathrm{pump}}$ |

## REFERENCE

[1] J. Li *et al.*, "Resilience-motivated distribution system restoration considering electricity-water-gas interdependency," *IEEE Trans. Smart Grid*, vol. 12, no. 6, pp. 4799–4812, Nov. 2021.

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