Correction to “Optimal Routing Among $\bullet/M/1$ Queues with Partial Information”

by

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In our paper ”Optimal Routing Among $\bullet/M/1$ Queues with Partial Information”, published in Stochastic Models **20**:149-171 (2004), the expression for $\widetilde{Y}_m(s)$ appearing in page 155 is stated incorrectly.

Lines 21-27 there should read as follows:

$$\widetilde{Y}_m(s) = \frac{\lambda}{\lambda+\mu_1+s} + \widetilde{Y}_{m-1}(s)\widetilde{Y}_m(s)\frac{\mu_1}{\lambda+\mu_1+s}.$$

This follows since $E[e^{-sT}|T < V]P(T < V) = \lambda/(\lambda+\mu_1+s)$, and (similarly) $E[e^{-sV}|V < T]P(V < T) = \mu_1/(\lambda+\mu_1+s)$.

The above yields

$$\widetilde{Y}_m(s) = \frac{\lambda}{(\lambda+s)+\mu_1\big(1-\widetilde{Y}_{m-1}(s)\big)}$$

This allows us to compute $\widetilde{Y}_m(s)$ recursively. We have, in particular, $Y_0 \triangleq T$ so that

$$\begin{aligned}
\widetilde{Y}_0(s) &= \frac{\lambda}{\lambda+s}\\
\widetilde{Y}_1(s) &= \frac{\lambda(\lambda+s)}{(\lambda+s)^2+\mu_1 s}\\
\widetilde{Y}_2(s) &= \frac{\lambda[(\lambda+s)^2+\mu_1 s]}{[(\lambda+s)^2+\mu_1 s][(\lambda+s)+\mu_1]-\mu_1\lambda(\lambda+s)}.
\end{aligned}$$

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We thank Yoav Kerner for bringing to our attention that the expression for $\widetilde{Y}_m(s)$ appears incorrectly.