Chapter 10

Errors and Comments After Publication

This chapter contains a list of errors in the book found since publication. It also contains comments on related work.

p. 80 While $\|x_n - x\| = 1$ in Figure 3.1, $d_{J_1}(x_n, x) = 1/2$, not 1, as claimed just below Figure 3.1. [Anton Kleywegt, Georgia Tech]

p. 100 third paragraph: A real-valued random variable (no s). [Aubin Whitley, University of California at San Diego]

p. 114-115 format $\frac{F^c(x)}{G^c(x)}$ should be used consistently, in (5.22) as well as (5.27).

p. 124 Formula (6.12) is incorrect. It should be

$$C_2 = \frac{c^2\Gamma(1-\gamma)\Gamma(2\gamma-1)}{\Gamma(\gamma)(3-2\gamma)(1-\gamma)} \ .$$

Lemma 4.6.1 applies; (6.12) was calculated incorrectly given Lemma 4.6.1 and formula (6.9). In Example 4.6.1 this makes the coefficient three times smaller when $\gamma = 0.75$. [Michael Roginsky, Berkeley]

p. 126 The direct simulation method described here tends to be inefficient. Michael Roginsky at Berkeley has been investigating alternative procedures, including the Choleski decomposition, which directly constructs normal random variables with the prescribed correlations. A method based on wavelet decompositions is described in Chapter 2 of Park and Willinger (2000). [Michael Roginsky, Berkeley]

p. 297 A finite-waiting room version of Theorem 9.3.4 is established in

W. Whitt, Heavy-traffic limits for loss proportions in single-server queues, 2002.

This paper can be downloaded from the "Recent Papers" section on my homepage.

p. 358 Formulas (4.15) and (4.19) are correct for the $M/M/m$ model, where $\xi = \beta$, but they are incorrect for the $GI/M/m$ model. These errors appear in Halfin and Whitt (1981) and were perpetuated in Whitt (1993) and here. Formula (4.15) should be

$$p \equiv p(\beta, z) = \alpha(\beta/\sqrt{z}) \ ,$$

where

$$\alpha(\beta) \equiv p(\beta, 1) = [1 + \beta\Phi(\beta)/\phi(\beta)]^{-1}$$

and

$$z = (1 + c_a^2)/2 \ .$$

Formula (4.19) should be

$$P(Z \leq x | Z \leq 0) = \Phi((x + \beta)/\sqrt{z})/\Phi(\beta/\sqrt{z})$$

for β in (4.14) and z above.

See the papers:

W. Whitt, Heavy-traffic limits for the $G/H_2^*/n/m$ queue, 2002.

W. Whitt, A diffusion approximation for the $G/GI/n/m$ queue, 2002.

These papers can be downloaded from the "Recent Papers" section on my homepage.

p. 360 Condition (4.23) should read

$$(m - \gamma)/\sqrt{\gamma} \to \beta \quad \text{for} \quad -\infty < \beta < \infty$$

[Garud Iyengar, Columbia]