Applied Stochastic Processes and Control for Jump-Diffusions:

Modeling, Analysis, and Computation

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Post Publication Errata

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Negative numbered lines imply lines counted up from the bottom, designated as line -1.

- Page 1, line -5: Replace "**continuous-time stochastic processes**" by "**stochastic processes in continuous-time**"
- Page 12, line -5: Replace "*is independent of* t." by "*is independent of* t *with constant jump-rate* λ."
- Page 190, line -6: Delete "dps".
- Page 228, Eq. (8.35): Replace "$0.5|F_{j,k+0.5}|$" by "$0.5|F_{j,k+0.5}|\Delta X$".
- Page 290, Eq. (10.8), line -13: Insert "$S^2(t)$" before "$\frac{\partial^2 F}{\partial S^2}$" so equation is

$$dV^*(t) = N_F^*\left(dF - \frac{\partial F}{\partial S}dS\right) = N_F^*\left(\frac{\partial F}{\partial t} + \frac{1}{2}\sigma^2 S^2(t)\frac{\partial^2 F}{\partial S^2}\right)dt$$

- Page 290, Eq. (10.11), line -3: Insert "s^2" before "$\frac{\partial^2 F}{\partial s^2}$", changing all upper case S to lower case s, so equation is

$$\frac{\partial F}{\partial t}(s,t) + \frac{1}{2}\sigma^2 s^2\frac{\partial^2 F}{\partial s^2}(s,t) = r\left(F(s,t) - s\frac{\partial F}{\partial s}(s,t)\right).$$

- Page 291, line 1 to 5: Replace all occurrences of the stochastic variable "S" with the PDE variable "s".
- Page 312, Eq. (10.101): Replace all 9 occurrences of the stochastic variable "$N(T)$" with the variable "$P(T)$".
- Page 313, Eq. (10.103), line 2 of eq.: Insert the missing argument "Q_k" of the sum "$\sum_{k=1}^{P(T)}$" in the exponent inside the max function, so the line of the equation is

$$\equiv e^{-rT}\mathrm{E}\left[\max\left[S_0 e^{(r-\lambda\mu_J-\sigma_d^2/2)T+\sigma_d W(T)+\sum_{k=1}^{P(T)} Q_k} - K, 0\right]\right]$$

- Page 314, eq. unnumbered, line 14: Change the arguments of the functions A and B from "$S_0 e^{\widehat{\mathcal{S}}_k - \lambda\mu_J T}$" to "$\widehat{\mathcal{S}}_k$", so the line of the equation is

$$= \sum_{k=0}^{\infty} p_k(\lambda T) \mathrm{E}_{\widehat{\mathcal{S}}_k}\Big[S_0 e^{\widehat{\mathcal{S}}_k - \lambda\mu_J T} A\Big(\widehat{\mathcal{S}}_k\Big) - \ K e^{-rT} B\Big(\widehat{\mathcal{S}}_k\Big)\Big] \,,$$

- Pages B37, replace the unnumbered equation

$$\mathrm{Cov}[X_k, X_j] = \mathrm{Var}[X_j]\delta_{k,j}.$$

by " the joint distribution is"

$$\Phi_{X_k, X_j}(x_k, x_j) = \Phi_{X_k}(x_k) \cdot \Phi_{X_j}(x_j).$$

Also, replace Equations (B.111) and (B.112),

$$\mathrm{E}[s_n^2] = \sigma^2, \qquad (B.111)$$

$$\mathrm{E}[\widehat{s}_n^2] = \frac{n}{n-1}\sigma^2, \qquad (B.112)$$

by

$$\mathrm{E}[s_n^2] = \frac{n-1}{n}\sigma^2, \qquad (B.111)$$

$$\mathrm{E}[\widehat{s}_n^2] = \sigma^2, \qquad (B.112)$$

- Page B69, Exercise 3, replace the unnumbered equation

$$\begin{aligned} \mathrm{Var}[XY] = \overline{X}^2 \mathrm{Var}[Y] + 2\overline{XY}\mathrm{Cov}[X,Y] + \overline{Y}^2 \mathrm{Var}[X] - \mathrm{Cov}^2[X,Y] \\ + 2\overline{X}\mathrm{E}[\delta X(\delta Y)^2] + 2\overline{X}\mathrm{E}[(\delta X)^2 \delta Y] + \mathrm{E}[(\delta X)^2(\delta Y)^2], \end{aligned}$$

by

$$\begin{aligned} \mathrm{Var}[XY] = \overline{X}^2 \mathrm{Var}[Y] + 2\overline{XY}\mathrm{Cov}[X,Y] + \overline{Y}^2 \mathrm{Var}[X] - \mathrm{Cov}^2[X,Y] \\ + 2\overline{X}\mathrm{E}[\delta X(\delta Y)^2] + 2\overline{X}\mathrm{E}[(\delta X)^2 \delta Y] + \mathrm{E}[(\delta X)^2(\delta Y)^2], \end{aligned}$$

- Page B70, Exercise 6, Jensen's inequality, replace Equation (B.191)

$$\mathrm{E}[f(X)] \leq f(E[X]). \qquad (B.191)$$

by

$$\mathrm{E}[f(X)] \geq f(E[X]). \qquad (B.191)$$