Errata (second edition)

p.12 (2.32), change $\sum_{j=1}^{J} \frac{p_j S_{ij}}{\sum_{j=1}^{J} p_j}$ to $\sum_{j=1}^{J} \frac{\pi_j S_{ij}}{\sum_{j=1}^{J} \pi_j}$

p. 17 (3.11), change $U_{C(T-1)} = \frac{\partial U}{\partial C(T-1)} \tilde{B}_{W(T)} = \frac{\partial \tilde{B}}{\partial W(T)}$ to
$$U_{C(T-1)} = \frac{\partial U}{\partial C(T-1)}$$
$$\tilde{B}_{W(T)} = \frac{\partial \tilde{B}}{\partial W(T)}$$

p. 20 (3.25), change
$$W(t+h) = I(t)\sum_{i=1}^{n} x_i(t)\tilde{z}_i(t)$$
$$V(t) = \frac{W(t+h)}{I(t)} - 1 = \sum_{i=1}^{n} x_i(t)\tilde{\zeta}_i(t)$$
to
$$W(t+h) = I(t)\sum_{i=0}^{n} x_i(t)\tilde{z}_i(t)$$
$$V(t) = \frac{W(t+h)}{I(t)} - 1 = \sum_{i=0}^{n} x_i(t)\tilde{\zeta}_i(t)$$

p. 20 (3.26), change $\mathbb{E}[V(t)] = \sum_{i=1}^{n} x_i(t)\alpha_i(t)h$ to $\mathbb{E}[V(t)] = \sum_{i=0}^{n} x_i(t)\alpha_i(t)h$

p. 22 ((3.39), line 2, last term): should be $\sum_{j=1}^{n} x_i \sigma_{ij}$

p. 24 (3.48): remove $J(W(t), \pi(t), t)$ term from line 1

p. 25 (3.53), line 1: change σ_{12} to σ_{11} and change σ_{13} to σ_{12}

p. 39 (4.15): change $\mathbb{E}[Z_j] = (p-q)\Delta\mathbb{E}[Z_j^2] = \Delta^2$ to
$$\mathbb{E}[Z_j] = (p-q)\Delta$$
$$\mathbb{E}[Z_j^2] = \Delta^2$$

p. 40 (4.19): change $(p-q)^2 = \frac{r^2}{\sigma^2}h4pq = 1 - \frac{r^2}{\sigma^2}h$ to
$$(p-q)^2 = \frac{r^2}{\sigma^2}h$$
$$4pq = 1 - \frac{r^2}{\sigma^2}h$$

p. 40 (4.20): change $\mu = \frac{1}{h}(p-q)\Delta\sigma^2 = \frac{1}{h}\Delta^2$ to
$$\mu = \frac{1}{h}(p-q)\Delta$$
$$\sigma^2 = \frac{1}{h}\Delta^2$$

p. 41 (4.21): change $\mathbb{E}[Z_j] = \mu h\mathbb{E}[Z_j^2] = \sigma^2 h$ to
$$\mathbb{E}[Z_j] = \mu h$$
$$\mathbb{E}[Z_j^2] = \sigma^2 h$$

p. 41 (4.23&4.24): Δ and Δx ; h and Δt are used interchangeably

p. 43 (4.34&4.35): Δ and Δx ; h and Δt are used interchangeably

p. 45 (4.44): heat equation is a forward equation (there is no backward heat equation because heat can not be run backwards)

p. 50 (paragraph 1): change Duffies to Duffie's

p. 53 (after (4.76)): change h to η

p. 54 (4.82) change $\hat{W}(t) = W(t) + \int_0^t \theta(s)ds\theta(t) = \dfrac{\mu(t)-\nu(t)}{\sigma(t)}$ to $\begin{array}{l}\hat{W}(t) = W(t) + \int_0^t \theta(s)ds \\ \theta(t) = \dfrac{\mu(t)-\nu(t)}{\sigma(t)}\end{array}$

p. 73 (equation 5.49): change

$$C_{SS} = e^{-r(T-t)} \frac{\partial^2 f}{(\partial S^*)^2} \frac{2}{\sigma^2}(r - ½\sigma^2)\frac{1}{S} + e^{-r(T-t)} \frac{\partial f}{\partial S^*} \frac{2}{\sigma^2}(r - ½\sigma^2)\frac{-1}{S^2}$$ to

$$C_{SS} = e^{-r(T-t)} \frac{\partial^2 f}{(\partial S^*)^2} \left[\frac{2}{\sigma^2}(r - ½\sigma^2)\frac{1}{S}\right]^2 + e^{-r(T-t)} \frac{\partial f}{\partial S^*} \frac{2}{\sigma^2}(r - ½\sigma^2)\frac{-1}{S^2}$$

p. 75 ((5.61) denominator): change $\sqrt{\sigma_X^2 + \sigma_Y^2 - 2\rho\sigma_X\sigma_Y}$ to $\sqrt{(\sigma_X^2 + \sigma_Y^2 - 2\rho\sigma_X\sigma_Y)(T-t)}$

p. 82 ((6.24) denominator): change $\frac{\partial F}{\partial r}, \frac{\partial G}{\partial r}, \frac{\partial V}{\partial r}$ to $\frac{\partial F}{\partial x}, \frac{\partial G}{\partial x}, \frac{\partial V}{\partial x}$

p. 83 (6.33): change $\begin{cases}\mu_P - r = (-B)(\lambda_0 + \lambda_1 r) \\ \sigma_P = \sigma\sqrt{r}B\end{cases}$ to $\begin{cases}\mu_P - r = (-F)(\lambda_0 + \lambda_1 r) \\ \sigma_P = \sigma F\end{cases}$

p.84 (6.36): change $\begin{cases}\text{CIR} & dW = d\hat{W} - \frac{\lambda_1}{\sigma}\sqrt{r}dt \\ \text{Vasicek} & dW = d\hat{W} - \lambda_0\sqrt{r}dt\end{cases}$ to $\begin{cases}\text{CIR } (\lambda_1 = \lambda) & dW = d\hat{W} - \frac{\lambda}{\sigma}\sqrt{r}dt \\ \text{Vasicek } (\lambda_0 = \lambda\sigma) & dW = d\hat{W} - \lambda dt\end{cases}$

p.90 ((7.16) last line last term): change $\int_0^t e^{\alpha(u-t)}dW(u)$ to $\int_t^s e^{\alpha(u-t)}dW(u)$

p.92 (7.26): change $-\frac{\sigma^2}{2}F(t,T)^2$ to $+\frac{\sigma^2}{2}F(t,T)^2$

p. 107 (first paragraph in Section 7.4.2) change "Jensen's equality" to "Jensen's inequility" p.107 (7.74): change all $P(t,T_j)$ to $P(T_c,T_j)$ (because this is a random price at time T_c.

p. 107 (7.75): change $P(t,T_j) = A(t,T_j)e^{-r(t)B(t,T_j)}K_j = A(t,T_j)e^{-\overline{r}B(t,T_j)}$ to

$$P(T_c,T_j) = A(T_c,T_j)e^{-r(T_c)B(T_c,T_j)}$$
$$K_j = A(T_c,T_j)e^{-\overline{r}B(T_c,T_j)}$$

p.107 (last paragraph): change "Note that if for any j, $P(t,T_j) > K_j$, it must be that $r(t) < \overline{r}$ due to monotonicity , then $P(t,T_j) > K_j$ for all *j*, and hence selective exercise has no value. Note that this is not true for two factor models but it is still a good approximation. Since coupon, $A(t,T_j)$ and $B(t,T_j)$ are known, we can search for $\overline{r}$ with $\sum_{j=1}^{n} c_j K_j = K$." to "Note that if for any j, $P(T_c,T_j) > K_j$, it must be that $r(T_c) < \overline{r}$ due to monotonicity , then $P(T_c,T_j) > K_j$ for all *j*, and hence selective exercise has no value. Note that this is not true for two factor models but it is still a good approximation. Since coupon, $A(T_c,T_j)$ and $B(T_c,T_j)$ are known, we can search for $\overline{r}$ with $\sum_{j=1}^{n} c_j K_j = K$."

p. 113 (7.93): change

$$E\left[\left\{\int_t^T -\delta\frac{P_r(u,T)}{P(u,T)}d\tilde{W}_r^{(T)}(u) + \int_t^T \sigma d\tilde{W}^{(T)}(u)\right\}^2\right]$$
$$= \int_t^T \left\{\left[\delta\frac{P_r(u,T)}{P(u,T)}\right]^2 + \sigma^2 - 2\rho\sigma\delta\frac{P_r(u,T)}{P(u,T)}\right\}du$$

to

$$E\left[\exp\left\{\int_t^T -\delta\frac{P_r(u,T)}{P(u,T)}d\tilde{W}_r^{(T)}(u) + \int_t^T \sigma d\tilde{W}^{(T)}(u)\right\}^2\right]$$
$$= \exp\left\{\int_t^T \left\{\left[\delta\frac{P_r(u,T)}{P(u,T)}\right]^2 + \sigma^2 - 2\rho\sigma\delta\frac{P_r(u,T)}{P(u,T)}\right\}du\right\}$$

p.115 (7.103): change $d_2 = d_1 - V(t,T)$ to $d_2 = d_1 - \sqrt{V(t,T)}$

p.162 (10.13): change

$$V_j = P(0,t_j)N\left(\frac{\ln P(0,t_j) - \ln K - \ln P(0,t_j+a) - ½V_{P,j}}{\sqrt{V_{P,j}}}\right) - \frac{P(0,t_j+a)}{K}N\left(\frac{\ln P(0,t_j) - \ln K - \ln P(0,t_j+a) + ½V_{P,j}}{\sqrt{V_{P,j}}}\right)$$ to

$$V_j = P(0,t_j)N\left(-\frac{\ln P(0,t_j+a) - \ln K - \ln P(0,t_j) - ½V_{P,j}}{\sqrt{V_{P,j}}}\right) - \frac{P(0,t_j+a)}{K}N\left(-\frac{\ln P(0,t_j+a) - \ln K - \ln P(0,t_j) + ½V_{P,j}}{\sqrt{V_{P,j}}}\right)$$

p. 206 (13.2): change $V(T) = V(t)\exp\left((r - ½\sigma^2)(T-t) + \sigma r - ½\sigma^2 d\hat{W}(u)\right)$ to

$$V(T) = V(t)\exp\left((r - ½\sigma^2)(T-t) + \sigma\int_t^T d\hat{W}(u)\right)$$

p.259 (table): is wrong and corrected below:

term	mkt sprd	P(t)	λ(t)	Q(t)	-dQ(t)
1	0.0900%	0.9512	0.0015	0.9985	0.0015
2	0.1300%	0.9048	0.0029	0.9956	0.0029
3	0.2000%	0.8607	0.0059	0.9898	0.0058
4		0.8187	0.0092	0.9808	0.0091
5	0.3300%	0.7788	0.0092	0.9718	0.0090
6		0.7408	0.0150	0.9573	0.0144
7	0.4700%	0.7047	0.0150	0.9431	0.0142
8		0.6703	0.0176	0.9267	0.0164
9		0.6376	0.0176	0.9106	0.0161
10	0.6100%	0.6065	0.0176	0.8948	0.0158

p.260 (table cont.): is wrong and corrected below:

P(t)Q(t)	P(t)[-dQ(t)]	prem	prot	mdl sprd	cond. Q
0.9498	0.0014	0.9498	0.0009	0.0009	
0.9009	0.0026	1.8507	0.0024	0.0013	0.9971
0.8520	0.0050	2.7027	0.0054	0.0020	0.9942
0.8030	0.0074	3.5056	0.0099	0.0028	0.9908
0.7568	0.0070	4.2625	0.0141	0.0033	0.9908
0.7092	0.0107	4.9717	0.0205	0.0041	0.9852
0.6646	0.0100	5.6363	0.0265	0.0047	0.9852
0.6212	0.0110	6.2575	0.0331	0.0053	0.9826
0.5806	0.0103	6.8381	0.0393	0.0057	0.9826
0.5427	0.0096	7.3808	0.0450	0.0061	0.9826

p. 281 (14.65): change (sign changes)

$$= \binom{m}{i} \int_{-\infty}^{\infty} \prod_{j=1}^{i} N\left(-\frac{N^{-1}(p_j)+\sqrt{\rho} f}{\sqrt{1-\rho}}\right) \prod_{j=i+1}^{m} N\left(\frac{N^{-1}(p_j)+\sqrt{\rho} f}{\sqrt{1-\rho}}\right) dF(W_M < f) \text{ to}$$

$$= \binom{m}{i} \int_{-\infty}^{\infty} \prod_{j=1}^{i} N\left(+\frac{N^{-1}(p_j)-\sqrt{\rho} f}{\sqrt{1-\rho}}\right) \prod_{j=i+1}^{m} N\left(-\frac{N^{-1}(p_j)-\sqrt{\rho} f}{\sqrt{1-\rho}}\right) dF(W_M < f) \text{ (same with (14.66))}$$