勘誤表(Erratum)

updated on July 4, 2012

P.19, L-7: $\frac{1}{2}\int_0^T f_{XX}(t, W_t)\,dt$, $\frac{1}{2} f_{XX}(t, W_t) dt$

P.25, L-3: $\mathcal{N}\left(\ln s + \left(r - \frac{\sigma^2}{2}\right) t, \sigma^2 t\right)$

P.29,L3-4: $(C_t - P_t - S_t)e^{r(T-t)} - (S_T - K) + S_T = K + e^{r(T-t)}(C_t - P_t - S_t) > 0$

P.29,L5-6: $(C_t - P_t - S_t)e^{r(T-t)} + (K - S_T) + S_T = K + e^{r(T-t)}(C_t - P_t - S_t) > 0$

P.31, L9:

$(\alpha_t \mu S_t + \beta_t r e^{rt})dt + \alpha_t \sigma S_t dW_t = \left(\frac{\partial P}{\partial t} + \mu S_t \frac{\partial P}{\partial x} + \frac{1}{2}\sigma^2 S_t^2 \frac{\partial^2 P}{\partial x^2}\right) dt +$

$\sigma S_t \frac{\partial P}{\partial x} dW_t$ 。(4-5)

P.33,L-2: $\Theta(\text{Theta}) = \frac{\partial \mathrm{P}}{\partial \mathrm{t}} = \frac{-x\sigma}{2\sqrt{T-t}}\mathcal{N}'(d_1) - Kre^{-r(T-t)}\mathcal{N}(d_2)$

P.34,L1: $\Gamma(\text{Gamma}) = \frac{\partial^2 P}{\partial x^2} = \frac{\mathcal{N}'(d_1)}{x\sigma\sqrt{T-t}}$

P.34,L3: $\text{v}(\text{Vega}) = \frac{\partial \mathrm{P}}{\partial \sigma} = x\sqrt{T-t}\mathcal{N}'(d_1)$

P.41,L14: $\mathrm{B(t,T)}$為$\exp(-\mathrm{r}(\mathrm{T}-\mathrm{t}))$當無風險利率....

P.51, L5: $S^* = \frac{2r}{2r+\sigma^2} K$

P.52,L16: $\begin{cases} \mathcal{L}P_{am}(x) = 0, x > S^* \\ P_{am}(x) = (K - x), x \leq S^* \end{cases} \qquad (8-5)$

P.53, L5: $P'_{am}(x) = \begin{cases} -1, x > S^* \\ -(K - S^*)\frac{2r}{\sigma^2 S^*}\left(\frac{x}{S^*}\right)^{-(2r+\sigma^2)/\sigma^2}, x \leq S^* \end{cases}$

P63,L-6: $C(\tau)=\frac{2(e^{\theta\tau}-1)}{(\theta+\alpha)(e^{\theta\tau}-1)+2\theta}$

P97,L-5: $c_T(k)=exp(\alpha k)C_T(k)$

P97,L-3: 它乘上了阻尼參數的 $c_T(k)$ 便無此缺陷，

P98,L5: $\Psi_T^{X(T)}(v)=\int_R c_T(k)e^{ivk}\,dk$

P99,L2: $C_T(k)=e^{-\alpha k}\frac{1}{2\pi}\int_{-\infty}^{\infty}\Psi_T(v)e^{-ivk}\,dv$

P99,L18-19: Y_i都 i. i. d.服從了 normal 分佈，使得$Y_i\sim\mathcal{N}(\mu,\delta^2)$

P100,L1: 其中參數 $\mu^M=\frac{lnS_0}{T}+r-\frac{\sigma^2}{2}-\lambda\left(exp\left(\mu+\frac{1}{2}\delta^2\right)-1\right)$

P100,L2: $\phi_T(u)=exp\left[T\left(-\frac{\sigma^2u^2}{2}\right)+i\mu^M uT+\lambda T\left(exp\left(-\frac{\delta^2u^2}{2}+i\mu u\right)-1\right)\right]$

P100,L17-18: $\phi_T(u)=\frac{exp\left(\frac{\kappa\theta T(\kappa-i\rho\sigma u)}{\sigma^2}+iuT\gamma+iu\log S_0\right)}{\left(cosh\frac{\gamma T}{2}+\frac{\kappa-i\rho\theta u}{\gamma}sinh\frac{\gamma T}{2}\right)^{\frac{2\kappa\theta}{\sigma^2}}}*\exp\left(-\frac{(u^2+iu)Y_0}{\gamma coth\frac{\gamma T}{2}+\kappa-i\rho\sigma u}\right)$

P.103, L1:

$$P^{\varepsilon,\delta}(t,x,y;T,h)=E^*_{t,x,y,z}\left\{e^{-r(T-t)}h(S_T)\right\}, \qquad (3\text{-}4)$$

P113,L3: 這是由於$Z_{0.05/2}=1.96$且$Z_{0.01/2}=2.58$。

P118,L-1: $P(0,S_0)=Ne^{-rT}\mathcal{N}\left(d_2(0,S_0)\right)$

P119,L6:

Closed Form		
Price	Call	Put
Cash	0.5166	0.4065

P138,L8: $P_1^c=\frac{1}{\sqrt{2\pi}}\int_{-\infty}^{\infty}I(x>c)\frac{e^{-x^2/2}}{e^{-(x-\mu)^2/2}}e^{-(x-\mu)^2/2}=E_\mu\left\{I(x>c)e^{\mu^2/2}e^{-\mu x}\right\}$

P138,L10: 概似比例為$e^{\mu^2/2}e^{-\mu X}$

P140,L13: Z1=(Z>c).*exp(mu^2*0.5-mu.*Z);

P140,L5: $\Gamma^*(x) = sup_{\theta\in\Re}[\theta x - \Gamma(\theta)]$

P143, L8: Glasserman et al.

P. 144, L5: $\Gamma^*(x) = sup_{\theta\in\Re}[\theta x - \Gamma(\theta)]$

P145,L1: 1.5 應用一：風險管理—風險值與條件風險值的計算

P145,L14: $P(r_T \le VaR_\alpha/S_0) = 1-\alpha$

P145,L15: $VaR_\alpha = -S_0\sigma\sqrt{T}\mathcal{N}'(1-\alpha) = S_0\sigma\sqrt{T}Z_{\alpha.}$

P153,L13:

$$S_0 e^{-\left(r+\frac{\sigma^2}{6}\right)T/2}\mathcal{N}\left(\frac{\ln(S_0/K)+(r+\sigma^2/6)T/2}{\sigma\sqrt{\frac{T}{3}}}\right) - e^{-rT}K\mathcal{N}\left(\frac{\ln(S_0/K)+(r-\sigma^2/2)T/2}{\sigma\sqrt{\frac{T}{3}}}\right)$$

P212, L2: $\Delta \mathrm{u_t} \approx \exp\left(\frac{\mathrm{a+b\hat{Y}_t}}{2}\right)\sqrt{\Delta_\mathrm{t}}\varepsilon_\mathrm{t}$

P244,L6-7: $\tilde{\Delta}_t = \frac{\partial P(t,x)}{\partial x} - \frac{V_3(T-t)}{x}\left(4x^2\frac{\partial^2 P(t,x)}{\partial x^2} + 5x^3\frac{\partial^3 P(t,x)}{\partial x^3} + x^4\frac{\partial^4 P(t,x)}{\partial x^4}\right) = \Delta_t -$

$\frac{V_3(T-t)}{x}(4x^2\Gamma_t + 5x^3\varepsilon_t + x^4\kappa_t) \qquad (1-3)$

P293,L17: $\binom{X}{Y} \sim \mathcal{N}\left(\begin{pmatrix}\mu_1\\ \mu_2\end{pmatrix}, \begin{pmatrix}\sigma_1^2 & \rho\sigma_1\sigma_2\\ \rho\sigma_1\sigma_2 & \sigma_2^2\end{pmatrix}\right)$