Errata for

'Numerical Methods and Optimization in Finance'

5 November 2015

Chapter 11 – Basic Methods

p. 291 Algorithm 30, line 5, should read

if sign $f(a) \neq$ sign $f(c)$ then

Chapter 15 – Calibrating option pricing models

p. 512 "In Merton's model the log-jumps are distributed as

CORRECTED in print edition in June 2014

$$\log(1+J_t) \sim \mathrm{N}\left(\log(1+\mu_J) - \frac{v_J}{2}, v_J\right).$$

[...]" (Removed squares from v_J.)

p. 513 There are two errors in the characteristic function of Merton's jump–diffusion model (only in the printed formula, not in the code); reported by Kenji Ogawa. Additions are in blue.

CORRECTED in print edition in June 2014

$$\phi_{\text{Merton}} = \mathrm{e}^{A+B} \tag{1}$$

where

$$A = \mathrm{i}\omega s_0 + \mathrm{i}\omega\tau(r - q - \frac{1}{2}v - \lambda\mu_J) + \frac{1}{2}\mathrm{i}^2\omega^2 v\tau$$
$$B = \lambda\tau\left(\exp\left(\mathrm{i}\omega\log(1+\mu_J) - \frac{1}{2}\mathrm{i}\omega v_J - \frac{1}{2}\omega^2 v_J\right) - 1\right),$$

p. 514 In Equation (15.14a), r must be replaced by $r - q$.

$$\mathrm{d}S_t = (r-q)S_t\mathrm{d}t + \sqrt{v_t}S_t\mathrm{d}z_t^{(1)}$$

p. 515 "As in Merton's model, the logarithm of the jump size J_t is distributed as a Gaussian, that is,

CORRECTED in print edition in June 2014

$$\log(1+J_t) = \mathrm{N}\left(\log(1+\mu_J) - \frac{v_J}{2}, v_J\right).$$

[...]" (Removed square from v_J.)

p. 515 In the D-term of the characteristic function of the Bates model, remove the square from v_j. The correct expression is:

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$$D = -\lambda\mu_J\mathrm{i}\omega\tau + \lambda\tau\left((1+\mu_J)^{\mathrm{i}\omega}\mathrm{e}^{\frac{1}{2}v_J\mathrm{i}\omega(\mathrm{i}\omega-1)} - 1\right)$$