(Updated: 2011/06/20)

Corrections and addendum to the paper:

Fu and Li, Stochastic equations of non-negative processes with jumps, *Stochastic Processes and their Applications* **120** (2010), 3: 306-330.

1. (page 311) The first inequality in the proof of Proposition 2.3 should be replaced by

$$\begin{aligned}
&\mathbf{E}\Big[\Big|\int_0^{t\wedge\tau_m}\int_{U_0} g_0(x(s-),u)1_{\{|g_0(x(s-),u)|>1\}}\tilde{N}_0(ds,du)\Big|\Big]\\
&\quad\le \mathbf{E}\Big[\int_0^{t\wedge\tau_m}\int_{U_0} g_0^+(x(s-),u)1_{\{|g_0(x(s-),u)|>1\}}N_0(ds,du)\\
&\quad+\int_0^{t\wedge\tau_m}\int_{U_0} g_0^-(x(s-),u)1_{\{|g_0(x(s-),u)|>1\}}N_0(ds,du)\\
&\quad+\int_0^{t\wedge\tau_m} ds\int_{U_0} g_0^+(x(s-),u)1_{\{|g_0(x(s-),u)|>1\}}\mu_0(du)\\
&\quad+\int_0^{t\wedge\tau_m} ds\int_{U_0} g_0^-(x(s-),u)1_{\{|g_0(x(s-),u)|>1\}}\mu_0(du)\Big]\\
&\quad\le 2\mathbf{E}\Big[\int_0^{t\wedge\tau_m} ds\int_{U_0}|g_0(x(s-),u)|1_{\{|g_0(x(s-),u)|>1\}}\mu_0(du)\Big].
\end{aligned}$$

2. (page 319, beginning of Section 4) Let $C(\mathbb{R}_+)$ be the set of bounded continuous functions on $\mathbb{R}_+$ and $C^2(\mathbb{R}_+)$ the set of bounded continuous functions on $\mathbb{R}_+$ with bounded continuous first and second derivatives.

3. (page 319) It is unnecessary to assume the existence of $\{V_n\}$ in condition (4.b). One can simply let $\{V_n\}$ be a non-decreasing sequence of Borel subsets of U_0 so that $\cup_{n=1}^\infty V_n = U_0$ and $\mu_0(V_n) < \infty$ for every $n \ge 1$. Then

$$\int_{V_n} g_0(x,u)\mu_0(du) \le \int_{V_n}[1+g_0(x,u)^2]\mu_0(du) \le \mu_0(V_n)+K.$$

4. (page 319) Replace (4.b) by the new condition "(4.b) $x \mapsto \sigma(x)$ and $x \mapsto b(x)$ satisfy (3.a,b), and $x \mapsto g_0(x,\cdot)$ is non-decreasing and continuous in $L^2(\mu_0)$".

5. (page 320; line 2 in the proof of Proposition 4.2) Replace "bounded martingale" by "locally bounded martingale".

6. (page 321; last line in the proof of Proposition 4.2) Replace "p.84" by "p.90".

7. (page 321; lines 2–3 in the last paragraph) Replace "To prove the existence of... If condition (4.b) holds, for every..." by "Let $\{V_n\}$ be a non-decreasing sequence of Borel subsets of U_0 so that $\cup_{n=1}^{\infty} V_n = U_0$ and $\mu_0(V_n) < \infty$ for every $n \geq 1$. Suppose that conditions (4.a,b) are satisfied. Then for every...".

8. (page 321; line –2) Add the sentence "By Proposition 2.1 the solution is non-negative almost surely."

9. (page 322; line 2) Replace "weak solution" by "strong solution".

10. (page 322; line 6 in the proof of Lemma 4.3) Remove the extra "r".

11. (page 323; lines 6–7) Replace "bounded martingale" by "locally bounded martingale".

12. (page 323) It is unnecessary to assume (5.b) as condition (4.b) is already corrected. The results in this section hold without this assumption.