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ERRATA: EXISTENCE AND UNIQUENESS OF SOLUTIONS TO THE BACKWARD STOCHASTIC LORENZ SYSTEM (COSA, VOL. 1, NO. 3 (2007) 473–483)

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This note corrects a typographical error that appeared in the statement of Proposition 2.2, and the subsequent changes. The correct statement of the proposition is as given below:

Proposition 2.2: *Suppose that $g(t)$, $\alpha(t)$, $\beta(t)$ and $\gamma(t)$ are integrable functions, and $\beta(t), \gamma(t) \geq 0$. For $0 \leq t \leq T$, if*

$$g(t) \leq \alpha(t) + \beta(t) \int_t^T \gamma(\rho) g(\rho) d\rho$$

then

$$g(t) \leq \alpha(t) + \beta(t) \int_t^T \alpha(\eta)\gamma(\eta) e^{\int_t^\eta \beta(\rho)\gamma(\rho)d\rho} d\eta.$$

In particular, if $\alpha(t) \equiv \alpha$, $\beta(t) \equiv \beta$ and $\gamma(t) \equiv 1$, then $g(t) \leq \alpha e^{\beta(T-t)}$

Therefore, the following changes are to be made in the rest of the paper:

(i) The bound given in the proof of Proposition 2.3 changes to

$$E^{\mathcal{F}_r}|Y(t)|^2 + E^{\mathcal{F}_r} \int_t^T \|Z(s)\|^2 ds \leq E^{\mathcal{F}_r}|\xi|^2 e^{2\|A\|(T-t)}.$$

However, the statement of Proposition 2.3 is unaffected.

(ii) In the proof of Proposition 3.4, the estimate on $|Y^n(t)|^2$ in page 479 should read as follows:

$$|Y^n(t)|^2 \leq e^{2\|A\|(T-t)} E^{\mathcal{F}_t}|\xi^n|^2$$

Let $m < n$. Then the estimate (3.5) is not required since it is easy to note either directly or from equation (3.4) that

$$|\widetilde{Y}(t)|^2 + \int_t^T \|\widetilde{Z}(s)\|^2 ds = 0$$

on the set $A_m = \{\omega : |\xi(\omega)| < m\}$, and $\{A_m\}$ increases to an almost sure set as m increases to ∞. This would prove Theorem 3.5 besides producing a simpler proof of Proposition 3.4.

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