

Errata: On the Rate of Convergence to the Normal Law for Solutions of the Burgers Equation with Singular Initial Data¹

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The following minor mistakes in our paper should be corrected. On page 919, Eq. (27),

$$X(a) = -\frac{1}{i} \left[\frac{2}{\Gamma(\alpha + 1) \cos(\alpha\pi/2)} \right]^{1/2} \int_{-\infty}^{+\infty} e^{i\lambda a} g(\lambda) W(d\lambda)$$

should be replaced by

$$X(a) = -\frac{1}{i} \left[\frac{\alpha/2}{\Gamma(\alpha + 1) \cos(\alpha\pi/2)} \right]^{1/2} \int_{-\infty}^{+\infty} e^{i\lambda a} g(\lambda) W(d\lambda)$$

On p. 919, Eq. (3.1),

$$\Delta_t = \sup_{-\infty < z < +\infty} \left| P \left\{ \frac{1}{\sigma} \tilde{X}_t(a) \leq z \right\} - \Phi(z) \right|, \quad \sigma_2 = R(a, a)$$

and the subsequent “where $\tilde{X}_t(a)$, $a \in \mathbb{R}^1$, is defined by (2.5), $\Phi(z)$ is defined by (2.4), and $R(a, b)$ is defined by (2.6),” should be replaced by

$$\Delta_t = \sup \left| P \left\{ \frac{1}{\sigma} \tilde{X}_t(a) \leq z \right\} - \Phi(z) \right|$$

where $\tilde{X}_t(a)$, $a \in \mathbb{R}^1$, is defined by (2.5), $\Phi(z)$ is defined by (2.4), and

$$\sigma^2 = \sigma_t^2 = (2\mu)^{\alpha-1} (a/2) \int_{A(a,t)} \int_{A(a,t)} \frac{w_1 w_2 \phi(w_1) \phi(w_2) L(|w_1 - w_2| \sqrt{2\mu t})}{|w_1 - w_2|^\alpha L(\sqrt{t})} dw_1 dw_2$$

$$A(a, t) = \left[\frac{a}{(2\mu)^{1/2}} - \left(\frac{t}{2\mu} \right)^{1/2}, \frac{a}{(2\mu)^{1/2}} + \left(\frac{t}{2\mu} \right)^{1/2} \right]$$

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On p. 924, the find line of (3.9), instead of

$$= \frac{L(\sqrt{t})}{t^{\alpha/2}} K_t \frac{1}{(\sqrt{2\mu})^{\alpha/2} C_1} \sum_{k=2}^{\infty} \frac{C_k^2}{k!}$$

one should have

$$= \frac{L(\sqrt{t})}{t^{\alpha/2}} K_t \frac{1}{(2\mu)^{\alpha/2} C_1} \sum_{k=2}^{\infty} \frac{C_k^2}{k!}$$

On p. 925, line 4, instead of

$$\times \left[\int_{-\infty}^{\infty} \int_{-\infty}^{\infty} w_1 w_2 \varphi(w_1) \varphi(w_2) \frac{dw_1 dw_2}{|w_1 - w_2|^\alpha} \right]^{-1}$$

one should have

$$\times \left[\int_{A(a,t)} \int_{A(a,t)} w_1 w_2 \varphi(w_1) \varphi(w_2) \frac{L(|w_1 - w_2| \sqrt{2\mu t})}{L(\sqrt{t})} \frac{dw_1 dw_2}{|w_1 - w_2|^\alpha} \right]^{-1}$$

On p. 928, the second line of (3.20), instead of

$$\leq \frac{1}{\varepsilon^2} \left\{ \frac{\theta^2 M_t(\alpha) L(\sqrt{t})}{t^{\alpha/2}} + c_4 Q_t \right\}, \quad c_4 = \text{const} > 0$$

one should have

$$\leq \frac{1}{\varepsilon^2} \left\{ \frac{\theta^2 M_t(\alpha) L(\sqrt{t})}{t^{\alpha/2+2} (2\mu)^{\alpha/2}} + c_4 Q_t \right\}, \quad c_4 = \text{const} > 0$$

On p. 928, line 10, instead of

$$\varepsilon = \frac{L^{1/3}(\sqrt{t})}{t^{\alpha/6}} \left(1 + \frac{1}{\sqrt{2}} \right)^{-1/3} (2\mu)^{-\alpha/6} \left(2c_2 K_t + \frac{M_t(\alpha)}{2\mu^2} \right)^{1/3}$$

one should have

$$\varepsilon = \frac{L^{1/3}(\sqrt{t})}{t^{\alpha/6}} \left(1 + \frac{1}{\sqrt{2\pi}} \right)^{-1/3} (2\mu)^{-\alpha/6} \theta^{2/3} \left(2c_2 K_t + \frac{M_t(\alpha)}{2\mu^2} \right)^{1/3}$$

On p. 928, line 12, instead of

$$\Delta_t \leq \frac{L^{1/3}(\sqrt{t})}{t^{\alpha/6}} \left[v_1^{2/3} v_2^{1/3} + \frac{v_1^{2/3} v_2^{1/3}}{2} + \frac{t^{\alpha/2}}{L(\sqrt{t})} (R_t c_5 + c_6 Q_t) \right]$$

one should have

$$\Delta_t \leq \frac{L^{1/3}(\sqrt{t})}{t^{\alpha/6}} \left[v_1^{2/3} \tilde{v}_2^{1/3} + \frac{v_1^{2/3} \tilde{v}_2^{1/3}}{2} + \frac{t^{\alpha/2}}{L(\sqrt{t})} (R_t c_5 + c_6 Q_t) \right]$$

where

$$\tilde{v}_2 = \theta^2 (2\mu)^2 - \alpha/2 \left\{ 2K_t \left[e^{1/(2\mu^2)} - \left(1 + \frac{1}{4\mu^2} \right) e^{1/(4\mu^2)} \right] e^{-1/(4\mu^2)} + \frac{M_t(\alpha)}{8\mu^4} \right\}$$