CORRECTIONS

Corrigendum to

Linearized dynamics for step jumps of velocity and displacement of shearing flows of a simple fluid

Rheol. Acta 21, 228–250 (1982)

A. Narain and D. D. Joseph

- 1) The quantities $\mathbf{G}(s)$, $\mathbf{C}_t(t)$ and $\mathbf{A}_1(t)$ are tensors and should be in boldface.
- 2) The equations under (3.4) should read

$$\lambda'(x, s) = 0 \quad \text{for } t \leq 0$$

and

$$\frac{d\lambda'}{ds}(x, s) = -\frac{\partial v}{\partial x}(x, t-s).$$

- 3) Property (v) of $G(s)$ assumed in the beginning of § 4 on p. 231 can be dropped. This assumption was used in eq. (4.8) which is derivable from the property (ii) of $G(s)$ and $G'(s) = O(e^{-\lambda s})$.
- 4) The sentence under eq. (4.5) should read “eqs. (4.3), (4.5) imply ... half-plane $\text{Re } u > -\lambda$ ”.
- 5) The first sentence under Figure 5.1 should read “Now for $t - \alpha x < 0 \dots$ ”.
- 6) The eq. (5.17) should read

$$\left[1 + \frac{G'(0)}{G(0)u} + \frac{G''(0)}{G(0)u^2} + O\left(\frac{1}{u^3}\right) \right]^{-1/2} \\ = 1 - \frac{\bar{y}'}{2u} + \frac{3}{8} \frac{\bar{y}''}{u^2} + \frac{\bar{y}''}{u^2} + O\left(\frac{1}{u^3}\right)$$

where

$$\bar{y}' \stackrel{\text{def}}{=} \frac{G'(0)}{G(0)}, \quad \bar{y}'' \stackrel{\text{def}}{=} -\frac{1}{2} \frac{G''(0)}{G(0)}.$$

- 7) The left side of eq. (6.7) should read:

$$\frac{\partial^2 v_n}{\partial x^2}.$$

- 8) Eq. (6.8) should be replaced by:

$$Mv_n \rightarrow Mv \equiv \int_{\alpha x}^t G(t-s) f_{xx}(x, s) ds \\ - 2\alpha G(t-\alpha x) f_x(x, \alpha x^+) \\ + \alpha^2 G'(t-\alpha x) f(x, \alpha x^+) \\ - \alpha^2 G(t-\alpha x) \frac{\partial f}{\partial t}(x, \alpha x^+) \\ - \varrho \frac{\partial f}{\partial t}(x, t).$$

- 9) Eq. (6.11) should be replaced by:

$$2 \frac{\partial f}{\partial t}(x, \alpha x^+) + \frac{2}{\alpha} \frac{\partial f}{\partial x}(x, \alpha x^+) = \frac{G'(0)}{G(0)} f(x, \alpha x^+).$$

- 10) The definition of $\eta(u)$ underneath eq. (10.4) is

$$\eta(u) \stackrel{\text{def}}{=} \sqrt{\varrho u / \bar{G}(u)}.$$

- 11) The right side of eq. (12.5) should read:

$$v(x, t) = U[g(x, t) + \{g(x+2l, t) \\ - g(2l-x, t)\} + \{\dots\} + \dots].$$

- 12) The equations between (14.3) and (14.6) should be numbered (14.4) and (14.5).
- 13) The left side of the equations above (14.6) should read $\mathcal{J} < r\theta > (t)$ in place of $\mathcal{J} < \pi\theta > (t)$.
- 14) The left side of eq. (14.11) should be replaced by

$$\frac{\omega(r, t)}{a\Omega}.$$

- 15) Eq. (14.12)_(iii) is:

$$K_1(z) \sim \sqrt{\frac{\pi}{2z}} \exp(-z) \quad \text{as } |z| \rightarrow \infty.$$

- 16) Eq. (16.5) can be ignored.

(Received December 15, 1982)

Authors' address:

Dr. A. Narain, Prof. D. D. Joseph
Department of Aerospace Engineering
and Mechanics
The University of Minnesota
110 Union Street S.E.
Minneapolis, MN 55455 (USA)