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## The effect of weak inertia on the emptying of a tube (vol 14, pg 2102, 2002)

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# Erratum: “The effect of weak inertia on the emptying of a tube” [Phys. Fluids 14, 2102 (2002)]

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The original manuscript contained errors requiring the following changes to six of the equations. There is a term lacking in Eq. (26), and the coefficients in Eq. (27) and (28) have to be corrected. In Eqs. (1), (13) and (22), there is a mix with previous coordinates.

- (1) In Eq. (1)  $r$  should be replaced by  $y$  and the second  $+$  in the left member replaced by  $-$  to give

$$\eta \left( \frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} - \frac{1}{r-y} \frac{\partial u}{\partial y} \right) = \frac{\partial p}{\partial x} + \rho \left( v \frac{\partial u}{\partial y} + u \frac{\partial u}{\partial x} \right).$$

- (2) Equation (13) should be

$$Q = \int_0^h 2\pi(r-y)u dy = \int_0^e 2\pi(r-y)V dy.$$

- (3) In Eq. (22),  $h$  should be replaced by  $(r-h)$  to give

$$p_s = -\gamma c - 2\eta \left. \frac{\partial u_0}{\partial x} \right|_s - 2\eta \frac{u_{os}}{r-h} h_x.$$

- (4) In Eq. (26),  $w$  should be replaced by  $u$  and it lacks a term in the left member. Eq. (26) now writes

$$\eta \left( \frac{\partial^2 u_0}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} - \frac{1}{r-y} \frac{\partial u}{\partial y} \right) = \frac{\partial p}{\partial x} + \rho \left( v_0 \frac{\partial u_0}{\partial y} + u_0 \frac{\partial u_0}{\partial x} \right).$$

- (5) In Eq. (27), some numerical coefficients in the second term of the right hand side are wrong. It should be

$$C_x = 3 \frac{1-Y}{Y^3} \left( 1 + E \frac{Y-1}{2} \right) + 3 \frac{\text{Ca}^{2/3}}{Y^3} \\ \times \left\{ Y_{xx} Y \left[ \frac{33-7Y}{20} + E \frac{-99+150Y-31Y^2}{120} \right] \right. \\ \left. + Y_x^2 \left[ \frac{-31-2Y}{10} + E \frac{31-19Y-2Y^2}{20} \right] \right\} \\ + \frac{1}{35} FE \text{Ca}^{4/3} \frac{Y_x}{Y^3} \left[ 6(-9+Y+Y^2) \right. \\ \left. + E \frac{1728-1131Y-171Y^2+134Y^3}{32} \right].$$

- (6) In Eq. (28), two coefficients are wrong. It should be

$$s^3 + \frac{E^2}{\text{Ca}^{2/3}} \frac{s}{(1-E)^2} + 3 - \text{Ca}^{2/3} s^2 \left( \frac{39}{10} + \frac{E}{2} \right) \\ + FE \text{Ca}^{4/3} s \left( \frac{6}{5} - \frac{E}{2} \right) = 0.$$

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