

Erratum: “An Experimentally Validated Model for Two-Phase Pressure Drop in the Intermittent Flow Regime for Circular Microchannels,” [Journal of Fluids Engineering, 2002, 124, pp. 205–214]

S. Garimella, J. D. Killion, and J. W. Coleman

1. By convention, most of the equations in this paper treat pressure drop as a negative value. For consistency, the following equations should have the negative signs added as shown below:

$$\left(\frac{dP}{dx}\right)_{\text{slug}} = -\frac{0.3164}{\text{Re}_{\text{slug}}^{0.25}} \frac{\rho_L U_{\text{slug}}^2}{2D_h} \quad (1)$$

$$\left(\frac{dP}{dx}\right)_{f/b} = -\frac{0.3164}{\text{Re}_{\text{bubble}}^{0.25}} \frac{\rho_V (U_{\text{bubble}} - U_{\text{interface}})^2}{4R_{\text{bubble}}} \quad (2)$$

$$\Delta P_{\text{one transition}} = -\rho_L \frac{(U_{\text{slug}} - U_{\text{film}})^2}{2} \quad (3)$$

$$\Delta P_{\text{one transition}} = -\rho_L \left(1 - \left(\frac{R_{\text{bubble}}}{R_{\text{tube}}}\right)^2\right) (U_{\text{slug}} - U_{\text{film}})(U_{\text{bubble}} - U_{\text{film}}) \quad (4)$$

2. In addition, Eq. (33) above had a factor of 2 in the denominator, which should be removed, as shown above.
3. The value of the coefficient, a , in Eq. (35), currently listed as 2436.9 in the text following the equation, should be changed to $a = 2.4369$.