

$$W_s = \begin{bmatrix} \frac{(s-1)gd^2}{18v} & \text{if } d \leq 10^{-4} \\ \frac{10v}{d} \left(\sqrt{1 + 0.01 \frac{(s-1)gd^3}{18v^2}} - 1 \right) & \text{if } 10^{-4} < d \leq 10^{-3} \\ 1.1\sqrt{(s-1)gd} & \text{otherwise} \end{bmatrix} \quad (6)$$