

available in the literature. The data are compared with the output of two theories: for large F , an extension by Gorodtsov & Teodorovich (1982) of the small-obstacle approximation (i), producing for the sphere a stratified drag coefficient

$$\Delta C_D \sim \frac{\ln F + 7/4 - \gamma}{4F^4}, \quad (1.16)$$

with $\gamma \approx 0.577$ the Euler constant; and, for small F , an original theory, decomposing the stratified drag coefficient into two contributions $\Delta C_D^{\text{waves}}$ and ΔC_D^{wake} , associated with the generation by the sphere of lee waves and of a wake, respectively. From dimensional and geometrical considerations, these two contributions vary as

$$\Delta C_D^{\text{waves}} \sim AF^{3/2}, \quad \Delta C_D^{\text{wake}} \sim BF^{1/2} \left(1 - \frac{5}{4}F\right), \quad (1.17)$$

the two coefficients A and B being obtained from fit to the experimental data as

$$A = 0.73, \quad B = 3.33 \quad (\text{Mason 1977 data}), \quad (1.18a)$$

$$A = 0.86, \quad B = 3.43 \quad (\text{Lofquist \& Purtell 1984 data}). \quad (1.18b)$$