

5.4-3

(a) 数值资料

$$h = 0.5 \text{ m} \quad t = 9 \text{ min} \quad \delta = 9.5 \text{ mm}$$

$$\delta = P(1 - \cos \theta) \quad \sin \theta = \frac{v}{P} \quad \text{或近似为 } \frac{v}{P} \quad \text{故 } \delta = P \left(1 - \cos \left(\frac{v}{P} \right) \right)$$

$$P \left(1 - \cos \left(\frac{v}{P} \right) \right) = \delta \quad \text{解得 } P \text{ 为: } P = 4.165 \text{ m}$$

$$\text{且 } \varepsilon = P \left(1 - \cos \left(\frac{v}{P} \right) \right) = 18.29 \text{ mm}$$

$$\frac{\delta}{\varepsilon} = 0.0023 \quad \frac{\varepsilon}{\delta} = 43.78$$