

流体

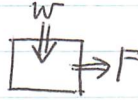
高圧ガス

No. _____

Date 2013

ベルヌーイの定理の一般形

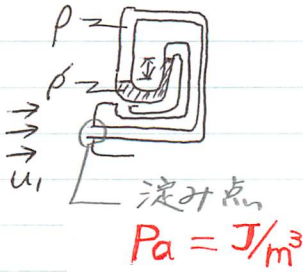
167.
$$\frac{\bar{u}_1^2}{2} + gh_1 + \frac{p_1}{\rho_1} + \int_1^2 p dv + w = \frac{\bar{u}_2^2}{2} + gh_2 + \frac{p_2}{\rho_2} + F \quad [J/kg]$$



109 $\tau_p = \tau_p'$ の式

摩擦損失
$$F_f = \frac{\Delta p}{\rho} = \underbrace{4f}_{\lambda} \underbrace{\left(\frac{\bar{u}^2}{2}\right)}_{\text{Darcy-Weisbach}} \underbrace{\left(\frac{l}{D}\right)}_{\text{Darcy-Weisbach}} \quad [J/kg]$$

173 蛇口 - 管



$$u_1 = \sqrt{2gh \left(\frac{\rho_0 - \rho}{\rho} \right)}$$

ピンホール流れ

224
$$q = \frac{\pi}{128} \frac{\Delta p D^4}{\mu L} \quad [m^3/s]$$

破断口 (→ピンホール) $q \propto \sqrt{p} \cdot A$