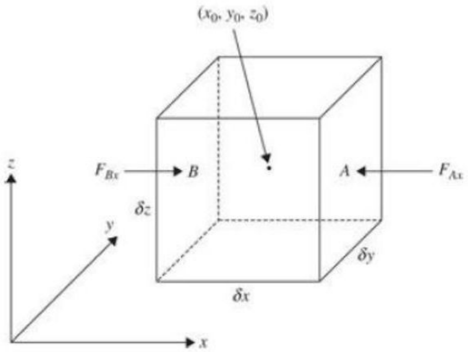
.pptx file, view in LO Impress 6.4.4.2 under Ubuntu 18.04 (Cambria Math is installed)

2 Principles

Pressure gradient force:

- Random molecular motion → no direction dependency of the pressure
- Infinitesimal volume element, pressure
  - Taylor-expansion:

  → ;



Total pressure gradient force with

→

James R. Holton, Gregory J. Hakin. An Introduction to Dynamic Modelling (5th Edition). Elsevier, 2013.

Equation not visible problem

.pptx file, view in LO Impress 6.4.4.2 under Win 10

2 Principles

Pressure gradient force:

- Random molecular motion → no direction dependency of the pressure
- Infinitesimal volume element, pressure p_0
  - Taylor-expansion: $p \approx p_0 + \frac{\partial p}{\partial x}\frac{\delta x}{2}$

→ ;

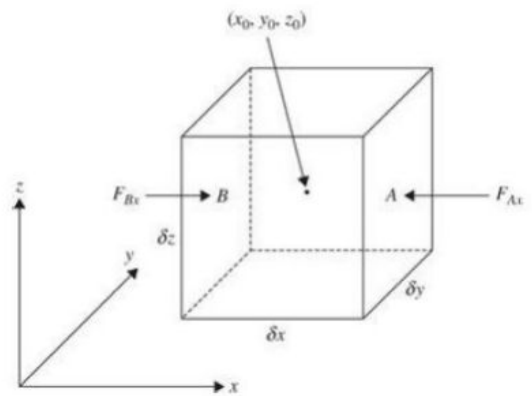
→ $F_{Ax} = -(p_0 + \frac{\partial p}{\partial x}\frac{\delta x}{2})\delta y \delta z$; $F_{Bx} = +(p_0 - \frac{\partial p}{\partial x}\frac{\delta x}{2})\delta y \delta z$

→ $F_x = -\frac{\partial p}{\partial x}\delta x \delta y \delta z$

Total pressure gradient force with

Total pressure gradient force with $m = \rho \delta x \delta y \delta z$

→ $\frac{\vec{F}}{m} = -\frac{1}{\rho}\vec{\nabla} p$



James R. Holton, Gregory J. Hakin. An Introduction to Dynamic Modelling (5th Edition). Elsevier, 2013.

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Equation not visible problem

iapp

.pptx file, view in Powerpoint 2016

2 Principles

Pressure gradient force:

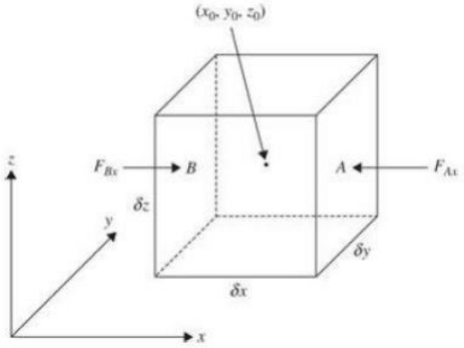
- Random molecular motion → no direction dependency of the pressure
- Infinitesimal volume element, pressure p_0
  - Taylor-expansion: $p \approx p_0 + \frac{\partial p}{\partial x}\frac{\delta x}{2}$

  → $F_{Ax} = -(p_0 + \frac{\partial p}{\partial x}\frac{\delta x}{2})\delta y \delta z$; $F_{Bx} = +(p_0 - \frac{\partial p}{\partial x}\frac{\delta x}{2})\delta y \delta z$

  → $F_x = -\frac{\partial p}{\partial x}\delta x \delta y \delta z$

  Total pressure gradient force with $m = \rho \delta x \delta y \delta z$

  → $\frac{\vec{F}}{m} = -\frac{1}{\rho}\vec{\nabla} p$



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