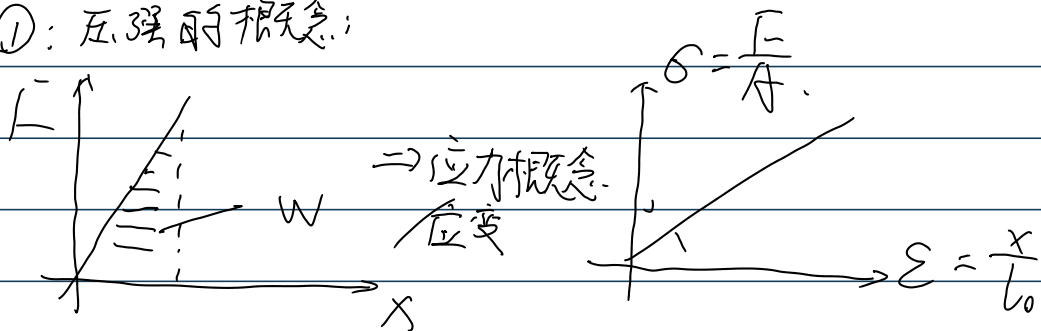


# 应变理论

Wednesday, May 31, 2023 8:35 AM

①: 压强的概念:



应变的定义:

$$\epsilon = \frac{l - l_0}{l_0} = \lambda - 1 \quad \text{其中: } \lambda: \text{伸长率, 为无量纲量,}$$

显然:  $\lambda = 1$  时:  $\rightarrow \epsilon = 0$  应变定义

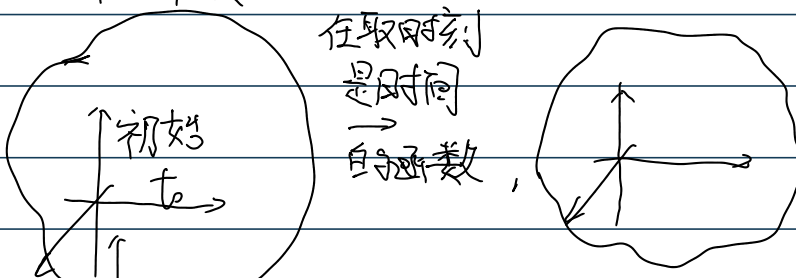
$$\epsilon_1 = \frac{l - l_0}{l_0} \quad \epsilon_2 = \frac{l - l_0}{l} \quad (\text{量纲分析的思路}) \quad \rightarrow \text{如: } \epsilon = \frac{l - l_0}{l_0^2} = \lambda^2 - 1$$

例如应变微分定义

$$u, \quad \text{---} \quad u + \frac{\partial u}{\partial x} dx$$

$$\epsilon = \frac{l - l_0}{l_0} = \frac{\frac{\partial u}{\partial x} dx}{dx} = \frac{\partial u}{\partial x}$$

②: 变形函数



(初始时刻)建立标系, 既是几何点, 也是物质点.