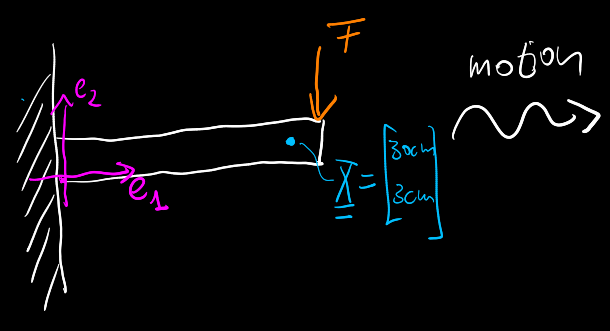
Configuration and Motion
Introduction & Example



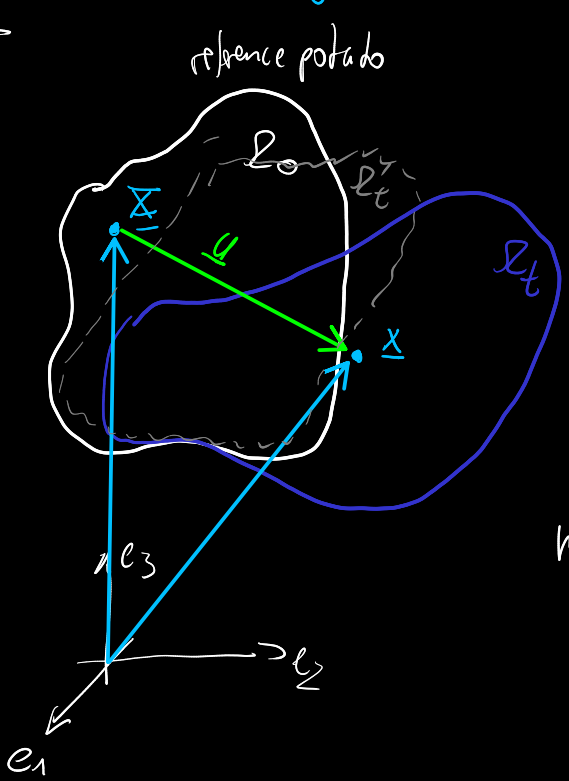
one configuration
(reference config)

another configuration
(spatial configuration)

motion: change in configuration

→ the point stays the same, it just moves ("the atom stays the same")

Continuum potato



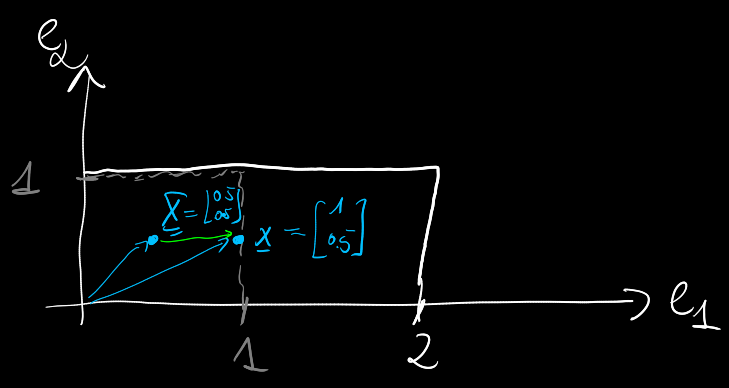
$\underline{u}$ ... displacement vector

(could be drawn in Ω_0)

motion: $\underline{x} = \underline{\chi}(\underline{X}, t)$

$\underline{x} = \underline{X} + \underline{u}$

Example



$$\underline{x} = \underline{\chi}(\underline{X}, t) \overset{\text{here}}{=} \underline{\chi}(\underline{X}) = \begin{bmatrix} 2X_1 \\ X_2 \end{bmatrix} = \underline{X} + \underline{u} = \begin{bmatrix} X_1 \\ X_2 \end{bmatrix} + \underbrace{\begin{bmatrix} X_1 \\ 0 \end{bmatrix}}_{\underline{u}}$$