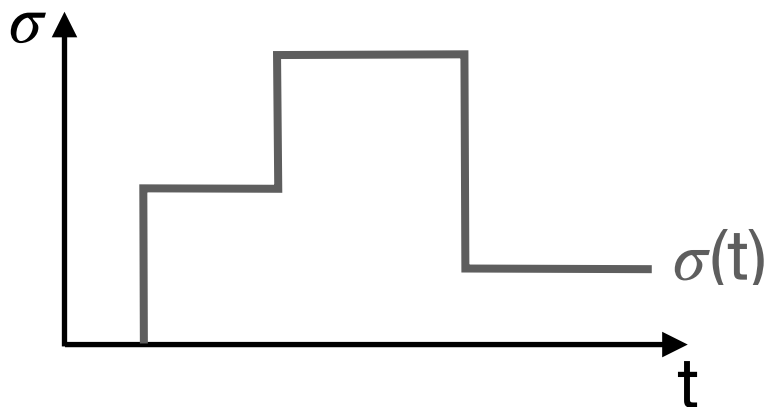


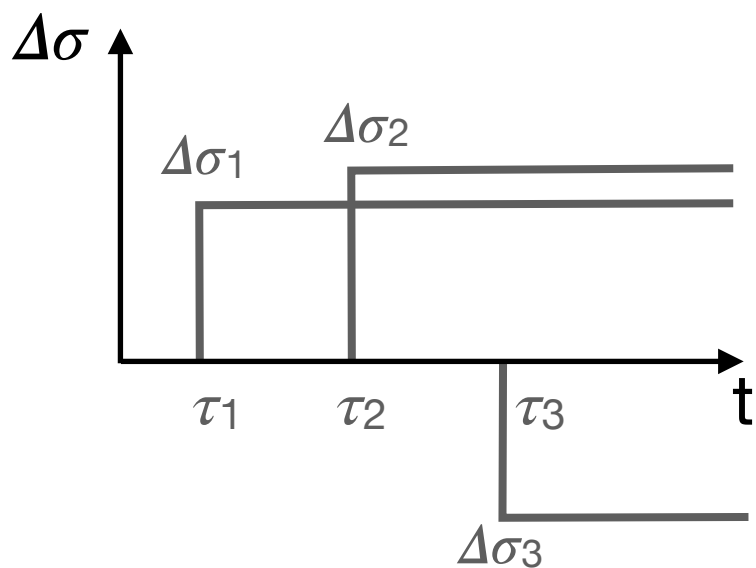
# Principio di sovrapposizione di Boltzmann

## Calcolo della deformazione

### 1. Storia di carico

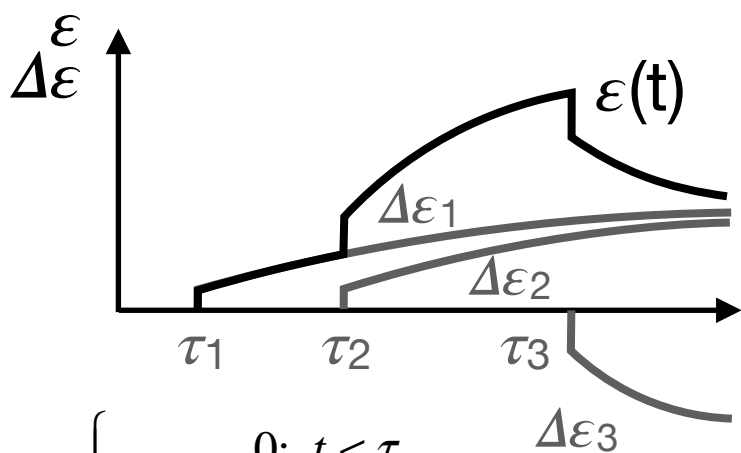


### 2. Articolazione in sotto-carichi



$$\sigma(t) = \sum_{i=1}^n \Delta\sigma_i(t) \quad \Delta\sigma_i(t) = \begin{cases} 0; & t < \tau_i \\ \Delta\sigma_i; & t \geq \tau_i \end{cases}$$

### 3. Articolazione in sotto-deformazioni e somma



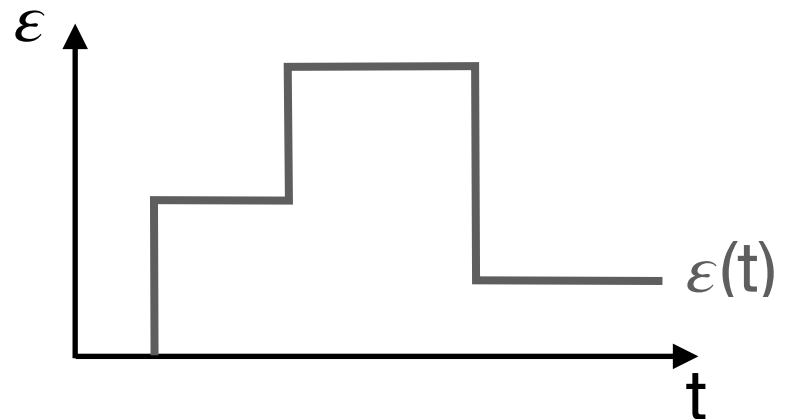
$$\Delta\epsilon_i = \begin{cases} 0; & t < \tau_i \\ C(t - \tau_i) \cdot \Delta\sigma_i; & t \geq \tau_i \end{cases}$$

$$\epsilon(t) = \sum_{i=1}^n \Delta\epsilon_i(t) = \sum_{i=1}^n C(t - \tau_i) \Delta\sigma_i(t)$$

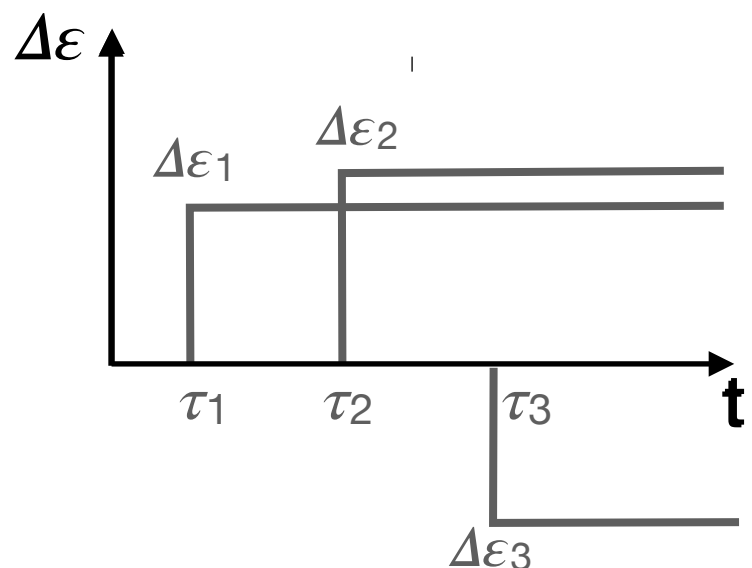
$$\epsilon(t) = \int_0^t C(t-u) \frac{d\sigma}{du} du$$

## Calcolo dello sforzo

### 1. Storia di deformazione

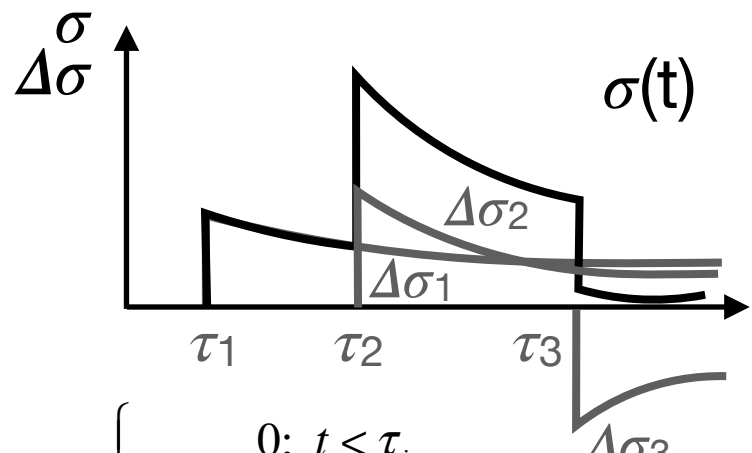


### 2. Articolazione in sotto-deformazioni



$$\epsilon(t) = \sum_{i=1}^n \Delta\epsilon_i \quad \Delta\epsilon_i = \begin{cases} 0; & t < \tau_i \\ \Delta\epsilon_i; & t \geq \tau_i \end{cases}$$

### 3. Articolazione in sotto-carichi e somma



$$\Delta\sigma_i = \begin{cases} 0; & t < \tau_i \\ E(t - \tau_i) \Delta\epsilon_i; & t \geq \tau_i \end{cases}$$

$$\sigma(t) = \sum_{i=1}^n \Delta\sigma_i(t) = \sum_{i=1}^n E(t - \tau_i) \Delta\epsilon_i(t)$$

$$\sigma(t) = \int_0^t E(t-u) \frac{d\epsilon}{du} du$$