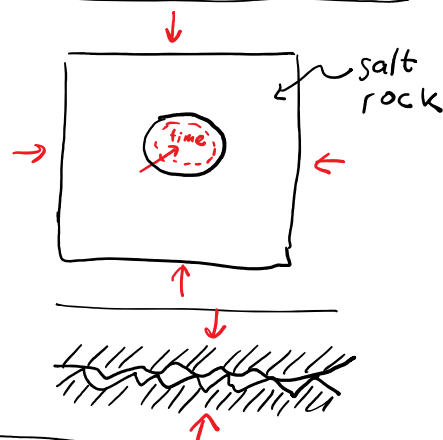
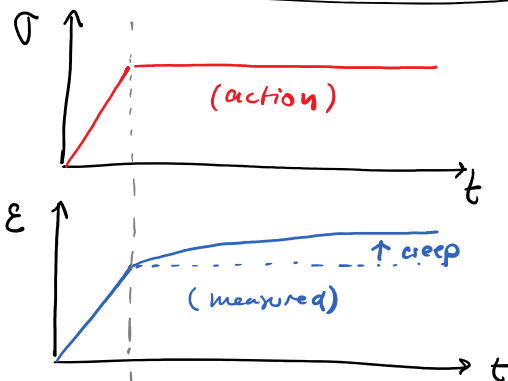
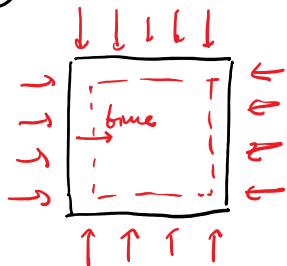


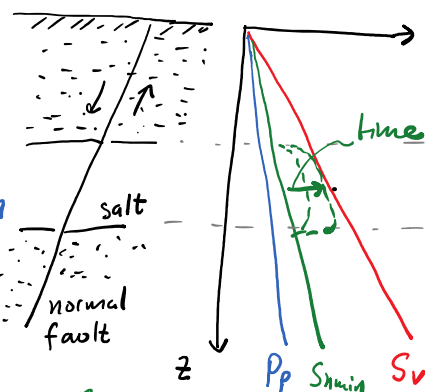
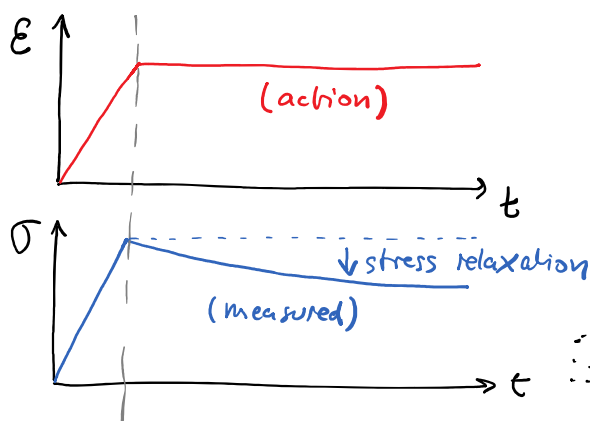
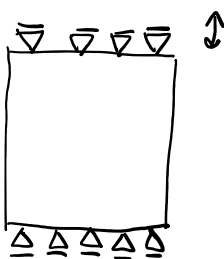
# Manifestations of visco-elastic behavior

## Example

### ① Creep strain



### ② Stress relaxation



$$\varphi = \frac{1 + \sin \varphi}{1 - \sin \varphi} \sim 3 \quad \varphi \approx 30^\circ$$

$$\sigma_{\min} = \frac{1}{\varphi} \sigma_v$$

### ③ strain-rate dependent stiffness

