

STRESS RELAXATION

LD CONST STRAIN $\Rightarrow \dot{\epsilon} = 0$

$$0 = \frac{\dot{\sigma}}{\mu} + \frac{\dot{\sigma}}{k} \Rightarrow \text{DIFFERENTIAL EQUATION}$$

$$\sigma = \sigma_0 e^{-\left(\frac{k}{\mu} t\right)} \quad \sigma = \sigma_0 @ t = 0$$

RECOVERY

LD REMOVE STRESS

ELASTIC STRAIN RECOVERS INSTANTLY

$$\Rightarrow \epsilon_e \rightarrow 0$$

NO further recovery.

$$\sigma = 0 \quad \dot{\sigma} = 0$$

$$\dot{\epsilon} = 0$$

$$\text{ELASTIC RECOVERY} =$$

$$\frac{\sigma'}{k}$$

STRESS IN SYSTEM AT MOMENT of ~~RELAXATION~~ LOAD REMOVAL