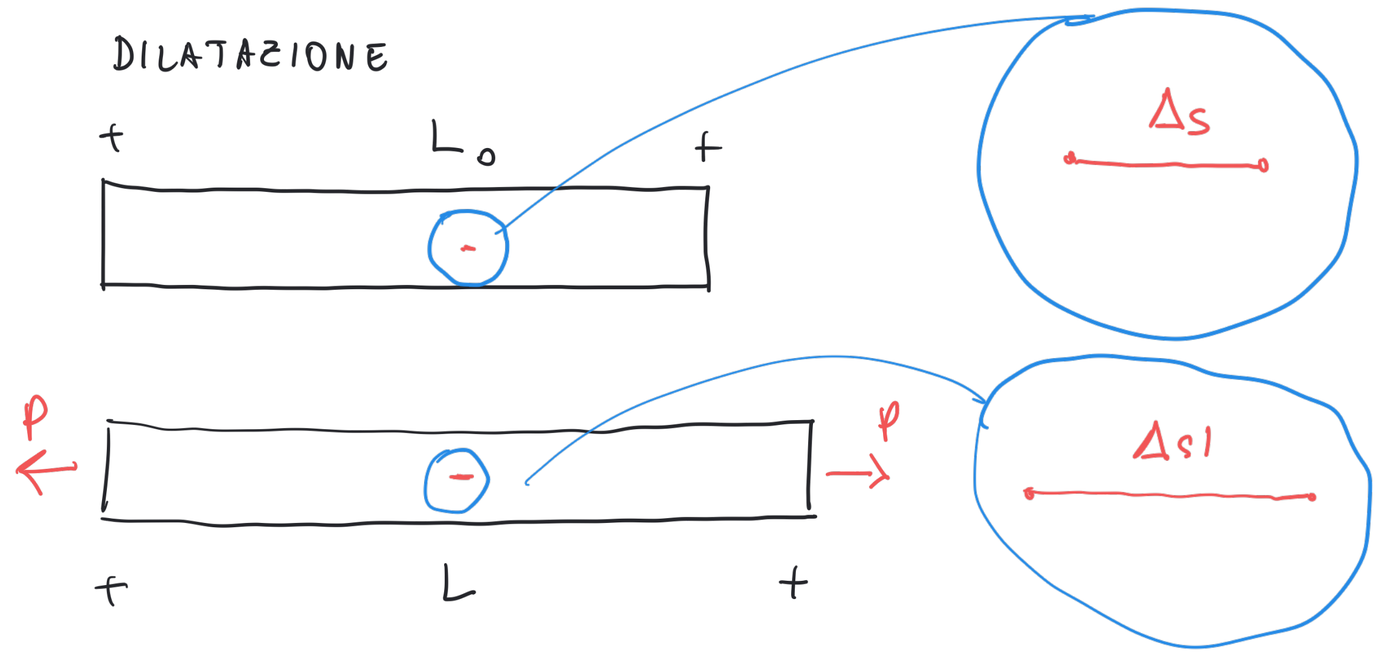
DEFORMAZIONE

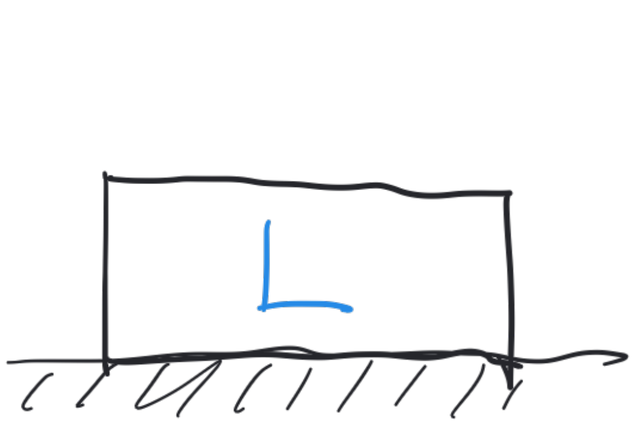
DILATAZIONE

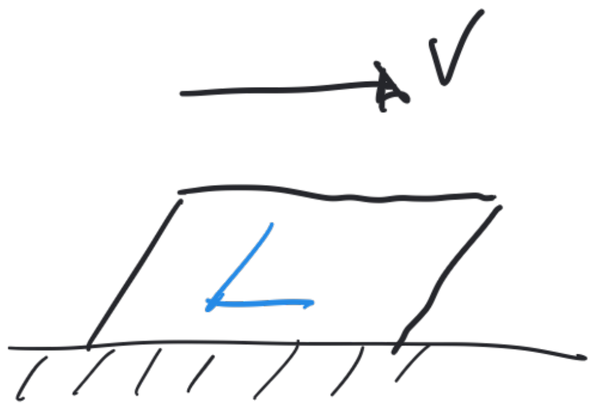


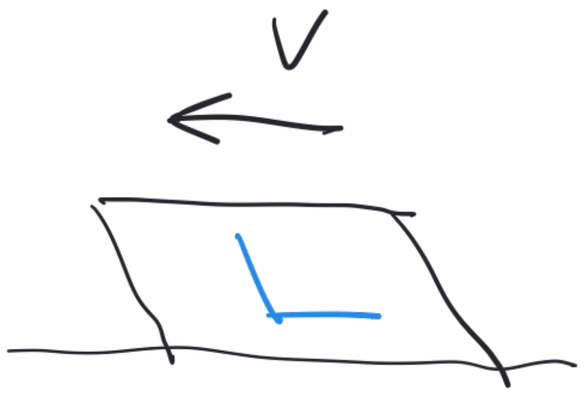
$$\varepsilon_{avg} = \frac{L - L_0}{L}$$ deformazione normale media

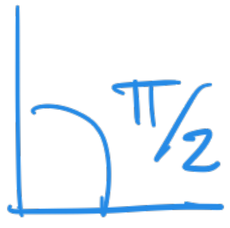
$$\varepsilon = \lim_{\Delta s \to 0} \frac{\Delta s' - \Delta s}{\Delta s}$$ deformazione nel punto

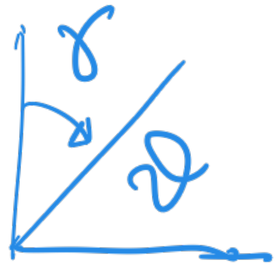
DEFORMAZIONI DI SCORRIMENTO



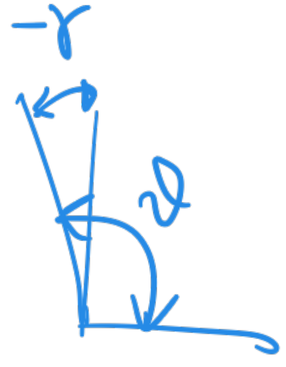








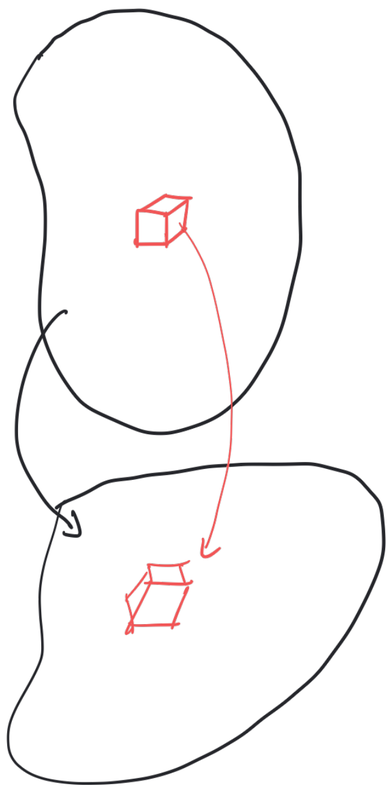
scorrimento > 0

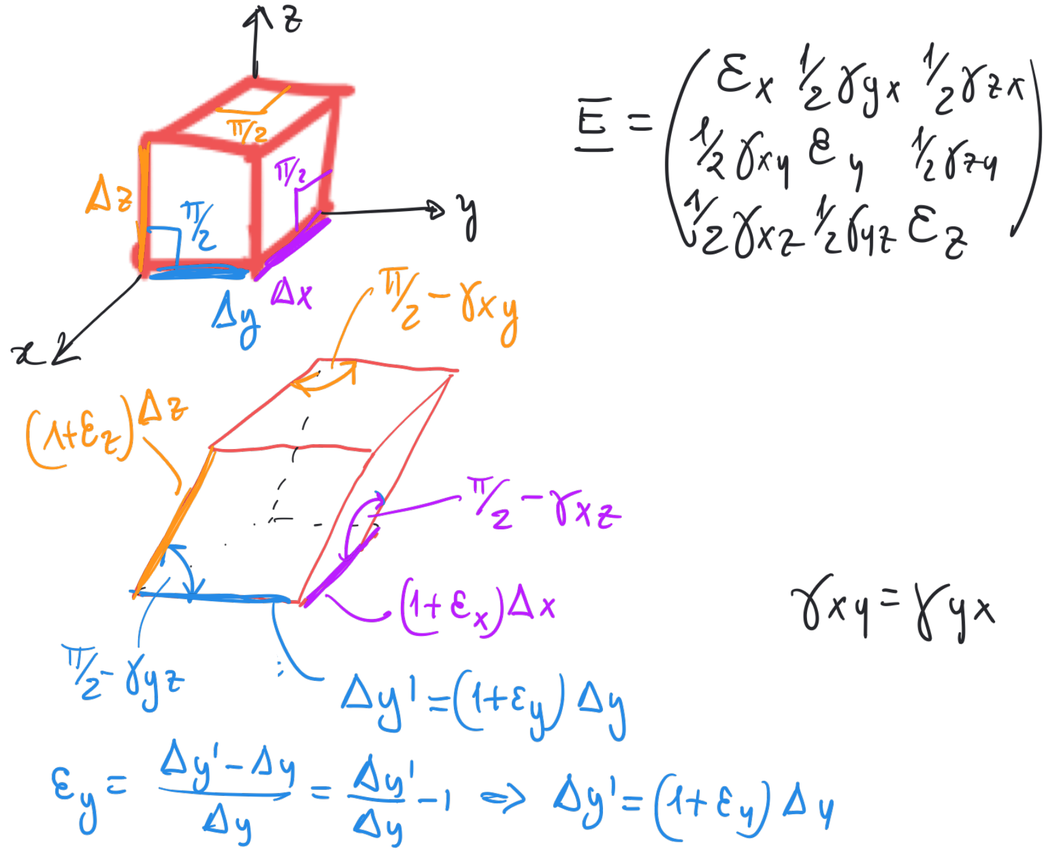


scorrim. < 0

$$\gamma = \frac{\pi}{2} - \vartheta$$

TENSORE DELLA DEFORMAZIONE



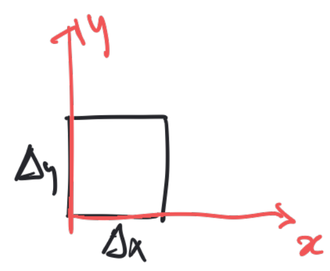


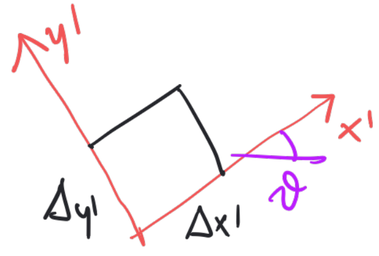
$$\underline{\underline{E}} = \begin{pmatrix} \varepsilon_x & \frac{1}{2}\gamma_{yx} & \frac{1}{2}\gamma_{zx} \\ \frac{1}{2}\gamma_{xy} & \varepsilon_y & \frac{1}{2}\gamma_{zy} \\ \frac{1}{2}\gamma_{xz} & \frac{1}{2}\gamma_{yz} & \varepsilon_z \end{pmatrix}$$

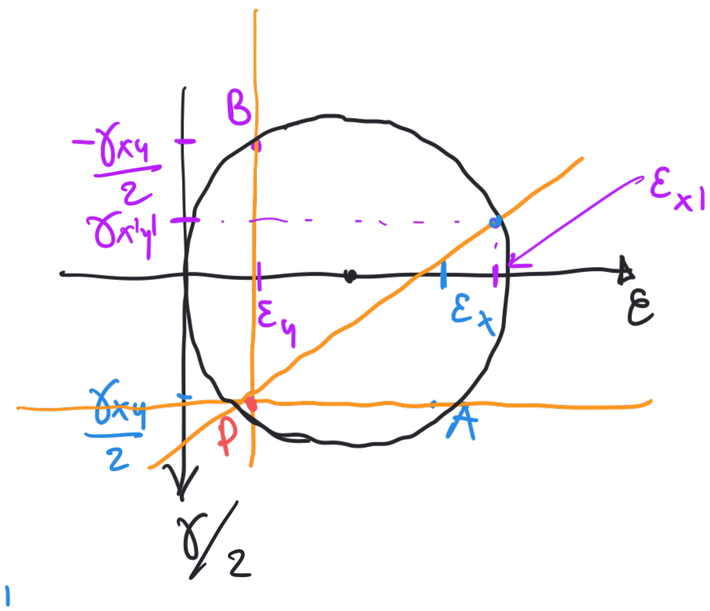
$$\gamma_{xy} = \gamma_{yx}$$

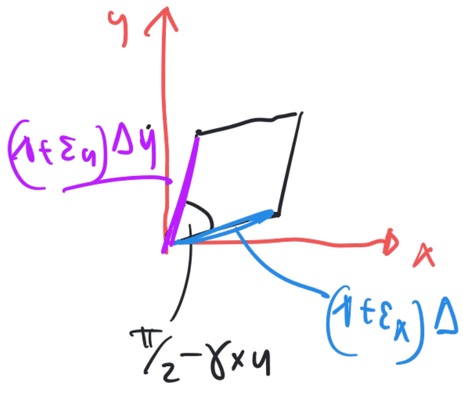
$$\varepsilon_y = \frac{\Delta y' - \Delta y}{\Delta y} = \frac{\Delta y'}{\Delta y} - 1 \Rightarrow \Delta y' = (1+\varepsilon_y)\,\Delta y$$

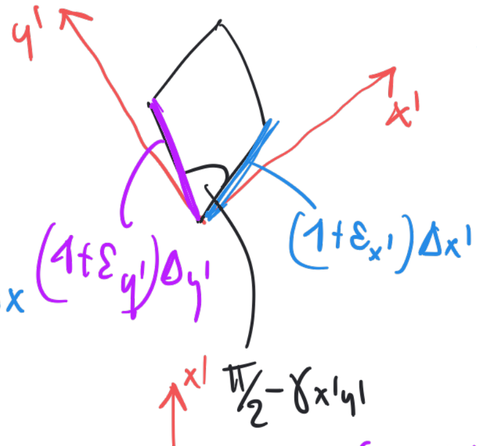
Costruzione di Mohr

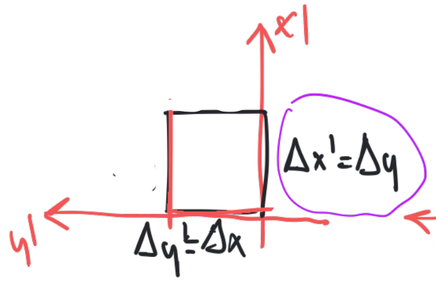












$(1+\varepsilon_{x'})\Delta x' = (1+\varepsilon_{x'})\Delta y = (1+\varepsilon_y)\Delta y \Rightarrow \varepsilon_{x'} = \varepsilon_y$

$\frac{\pi}{2} - \gamma_{x'y'} + \frac{\pi}{2} - \gamma_{xy} = 0 \Rightarrow \gamma_{x'y'} = -\gamma_{xy}$