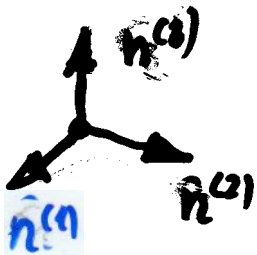
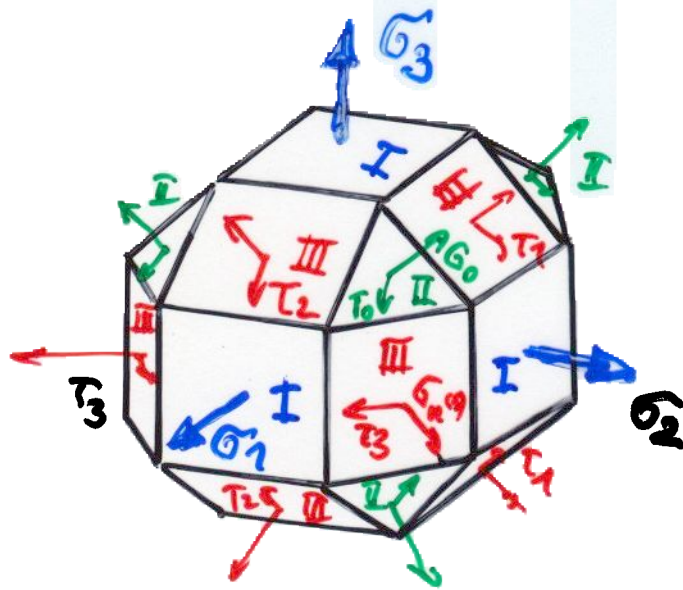


Geometrische Illustration!



Hauptrichtungen (principal directions)
Hauptachsen

I = Hauptebenen (principal planes)

II = Oktaederebenen (octahedral planes)

$$\sigma_0 = \sigma_{oct} = \frac{1}{3} (\sigma_1 + \sigma_2 + \sigma_3) = p$$

$$\tau_0 = \tau_{oct} = \sqrt{\frac{2}{3} (-I_2(s))} = \sqrt{\frac{2}{3}} \tau_I$$

$$\tau_I = \sqrt{-I_2(s)} - \text{Schubspannungsintensität (intensity of shear stresses)}$$

III = Ebenen der extremalen Schubspannungen!

$$\tau_1 = \frac{\sigma_2 - \sigma_3}{2}, \tau_2 = \frac{\sigma_1 - \sigma_3}{2}, \tau_3 = \frac{\sigma_1 - \sigma_2}{2}$$

$$\sigma_{n^{(1)}} = \frac{\sigma_2 + \sigma_3}{2}, \sigma_{n^{(2)}} = \frac{\sigma_1 + \sigma_3}{2}, \sigma_{n^{(3)}} = \frac{\sigma_1 + \sigma_2}{2}$$