Homework #6 **Deadline: April 24, 2018, 12:20.**

Show that the principle (assumption) of the maximization of the rate of entropy production (dissipation) applied to the following three situations:

(a) $\xi = 2\mu_*|\mathbf{D}|^r$ & $\tilde{\xi}(\mathbf{D}) = \mathbf{T}\cdot\mathbf{D}$ & maximize w.r.t. $\mathbf{D}$

(b) $\xi = \dfrac{1}{2\alpha_*}|\mathbf{T}^d|^{r'}$ & $\tilde{\xi}(\mathbf{T}^d) = \mathbf{T}\cdot\mathbf{D}$ & maximize w.r.t. $\mathbf{T}^d$

(c) $\xi = \dfrac{1}{2\mu_*|\mathbf{D}|^{r-2}}|\mathbf{T}^d|^2$ & $\tilde{\xi}_{\mathbf{D}}(\mathbf{T}^d) = \mathbf{T}\cdot\mathbf{D}$ & maximize w.r.t. $\mathbf{T}^d$

leads to the same constitutive equation, namely

$$\mathbf{T} = -p\mathbf{I} + 2\mu_*|\mathbf{D}|^{r-2}\mathbf{D}.$$

What is the relation between α_* and μ_* (both are positive constants)?