1_)A short example:

$$U=\frac{(\lambda+2\mu)}{2}\left(\sqrt{J_2}\left(\frac{\partial u_\sigma}{\partial\sigma}+\frac{\partial u_\tau}{\partial\tau}+\sqrt{J_3}\frac{\partial u_\phi}{\partial\phi}\right)\right),$$

$$T_{\max}=\frac{1}{2}\rho\omega^2\oiiint_{\forall}\left(u_\sigma^2+u_\tau^2+u_\phi^2\right)d\tau d\sigma d\phi$$

2) what I want to calculate. $L_{\max}=U-T_{\max}$

3) change of variable: $\aleph=\frac{\tau}{\tau_R},\Upsilon=\frac{\sigma}{\sigma_R}\quad,\varsigma=\frac{\phi}{\phi_R}\Rightarrow d\tau=\tau_R d\aleph,\quad d\sigma=\sigma_R d\Upsilon,\quad d\phi=\phi_R d\varsigma$

4) some assumptions:

$$u_\sigma=\sum_{i=0}^{I}\sum_{j=0}^{J}\sum_{k=0}^{K}A_{ijk}\Im_{ijk}(\sigma,\tau,\phi),u_\tau=\sum_{m=0}^{M}\sum_{n=0}^{N}\sum_{p=0}^{P}B_{mnp}\Re_{mnp}(\sigma,\tau,\phi),u_\phi=\sum_{q=0}^{Q}\sum_{r=0}^{R}\sum_{s=0}^{S}C_{qrs}\Gamma_{qrs}(\sigma,\tau,\phi)$$

5) final equation

$$L_{\max}=\frac{(\lambda+2\mu)}{2}\left(\sqrt{J_2}\left(\frac{\partial u_\sigma}{\partial\sigma}+\frac{\partial u_\tau}{\partial\tau}+\sqrt{J_3}\frac{\partial u_\phi}{\partial\phi}\right)\right)-\frac{1}{2}\rho\omega^2\oiiint_{\forall}\left(u_\sigma^2+u_\tau^2+u_\phi^2\right)d\tau d\sigma d\phi$$

6) so by using these equation:

$$\frac{1}{\sigma_R}\sum_{ijk}A_{ijk}\frac{\partial\Im_{ijk}}{\partial\Upsilon}=\frac{\partial u_\sigma}{\partial\sigma},u_\sigma=\sum_{ijk}A_{ijk}\Im_{ijk},\frac{1}{\phi_R}\sum_{ijk}A_{ijk}\frac{\partial\Im_{ijk}}{\partial\varsigma}=\frac{\partial u_\sigma}{\partial\phi}$$

$$\frac{1}{\tau_R}\sum_{mnp}B_{mnp}\frac{\partial\Re_{mnp}}{\partial\aleph}=\frac{\partial u_\tau}{\partial\tau},\quad\frac{1}{\phi_R}\sum_{mnp}B_{mnp}\frac{\partial\Re_{mnp}}{\partial\varsigma}=\frac{\partial u_\tau}{\partial\phi},u_\tau=\sum_{mnp}B_{mnp}\Re_{mnp}$$

$$\frac{1}{\phi_R}\sum_{qrs}C_{qrs}\frac{\partial\Gamma_{qrs}}{\partial\varsigma}=\frac{\partial u_\phi}{\partial\phi},,u_\phi=\sum_{qrs}C_{qrs}\Gamma_{qrs},\frac{\partial u_\phi}{\partial\sigma}=\frac{1}{\sigma_R}\sum_{qrs}C_{qrs}\frac{\partial\Gamma_{qrs}}{\partial\Upsilon},\frac{\partial u_\phi}{\partial\tau}=\frac{1}{\tau_R}\sum_{qrs}C_{qrs}\frac{\partial\Gamma_{qrs}}{\partial\aleph}$$

7) so:

$$L_{\max}=\frac{(\lambda+2\mu)}{2}\left(\sqrt{J_2}\left(\frac{1}{\sigma_R}\sum_{ijk}A_{ijk}\frac{\partial\Im_{ijk}}{\partial\Upsilon}+\frac{1}{\tau_R}\sum_{mnp}B_{mnp}\frac{\partial\Re_{mnp}}{\partial\aleph}+\sqrt{J_3}\frac{1}{\phi_R}\sum_{qrs}C_{qrs}\frac{\partial\Gamma_{qrs}}{\partial\varsigma}\right)\right)-$$
$$\frac{1}{2}\rho\omega^2\oiiint_{\forall}\left(\left(\sum_{ijk}A_{ijk}\Im_{ijk}\right)^2+\left(\sum_{mnp}B_{mnp}\Re_{mnp}\right)^2+\left(\sum_{qrs}C_{qrs}\Gamma_{qrs}\right)^2\right)\tau_R\sigma_R\phi_R d\aleph d\varsigma d\Upsilon$$

8) now I want to calculate $\frac{\partial L_{\max}}{\partial A_{ijk}},\frac{\partial L_{\max}}{\partial B_{mnp}},\frac{\partial L_{\max}}{\partial C_{qrs}}$