

$$\underbrace{\frac{1}{2} \sum_{J=1}^3 \sum_{K=1}^3 \frac{\xi_{JK}}{h_J h_K} \frac{\partial}{\partial \xi^J} (u_{\langle K \rangle} h_K)}_{\Theta_r} \hat{e}_r$$

$$\Theta_r : \frac{1}{2} \sum_K \frac{\xi_{12K}}{h_2 h_K} \frac{\partial}{\partial \xi^2} (u_{\langle K \rangle} h_K) + \frac{1}{2} \sum_K \frac{\xi_{13K}}{h_3 h_K} \frac{\partial}{\partial \xi^3} (u_{\langle K \rangle} h_K) = \frac{1}{2} \frac{\xi_{123}}{h_2 h_3} \frac{\partial}{\partial \xi^2} (u_{\langle 3 \rangle} h_3) +$$

$$\frac{1}{2} \frac{\xi_{132}}{h_3 h_2} \frac{\partial}{\partial \xi^3} (u_{\langle 2 \rangle} h_2) = \frac{1}{2r(R+r \cos \theta)} \left(\frac{\partial u_\phi}{\partial \theta} (r \cos \theta + R) - r u_\phi \sin \theta - r \frac{\partial u_\theta}{\partial \phi} \right)$$