

Numerical experiment 1

Material parameters:

Os: Young's modulus $E = 1,71 \times 10^{10}[\text{Pa}]$ and Poisson's ratio $\nu = 0,25$.

Cartilage: Young's modulus $E = 0,492 \times 10^9[\text{Pa}]$ and Poisson's ratio $\nu = 0,1$.

Boundary conditions:

Prescribed zero displacement on 1-2

Pressure $0,215 \times 10^7[\text{Pa}]$ on 3-4.

Discretization statistics:

10 subdomains, 1927 nodes, 3612 elements,

194 interface elements.

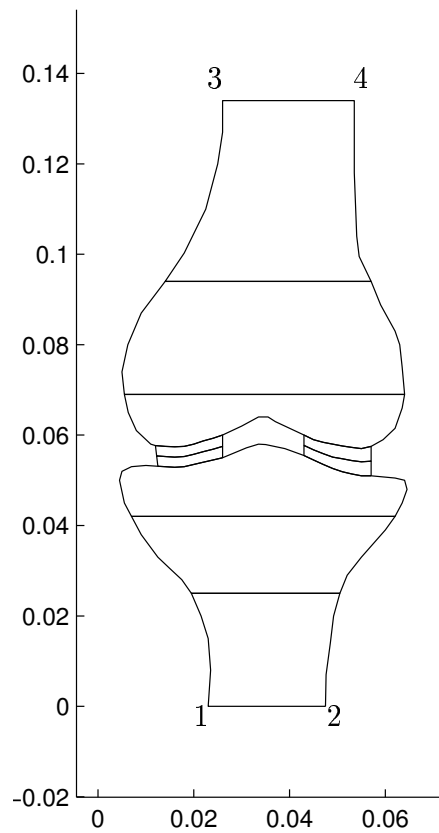


Figure 1: Geometry

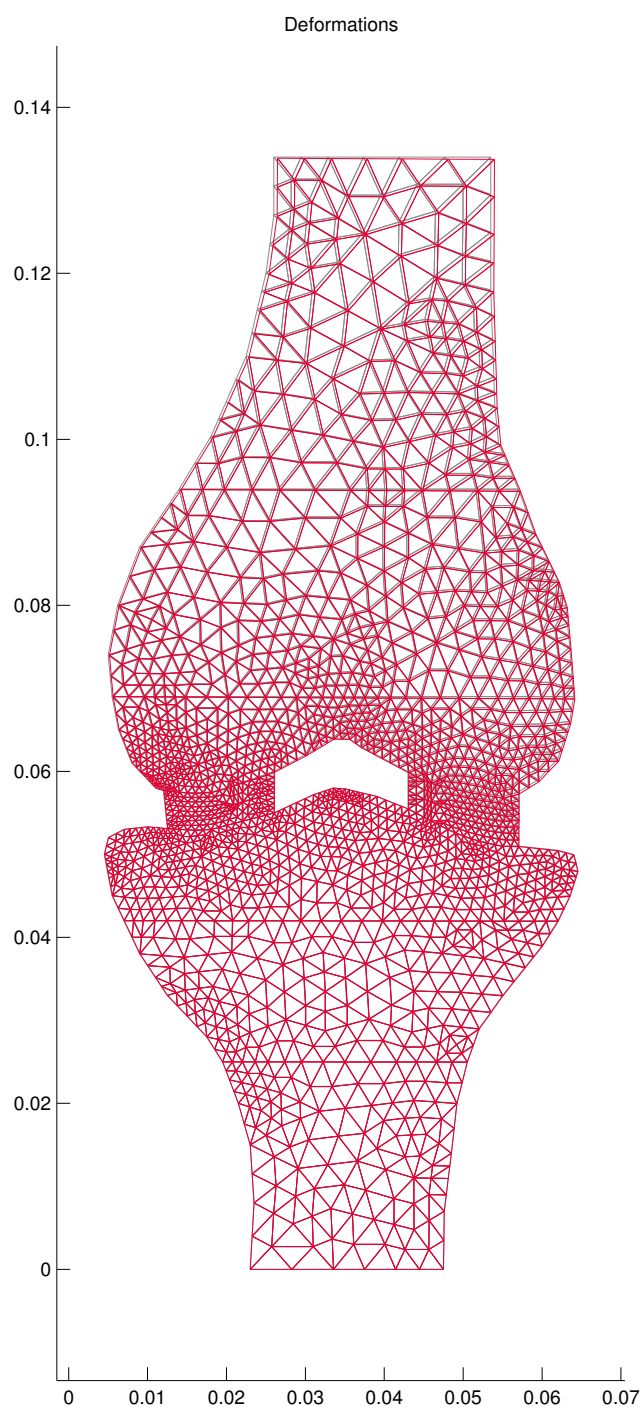


Figure 2: Deformations (enlarge factor=5)

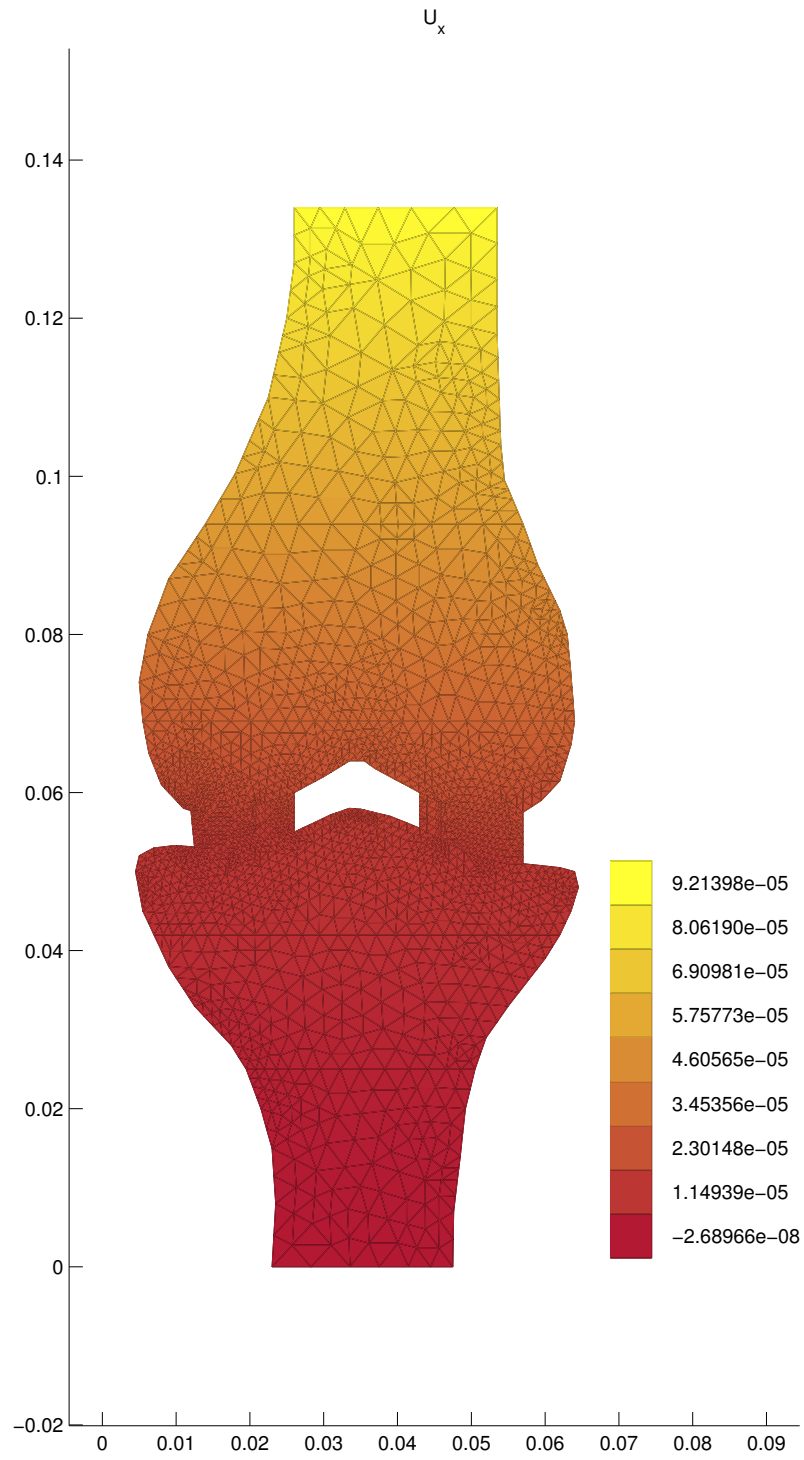


Figure 3: Horizontal component of displacement

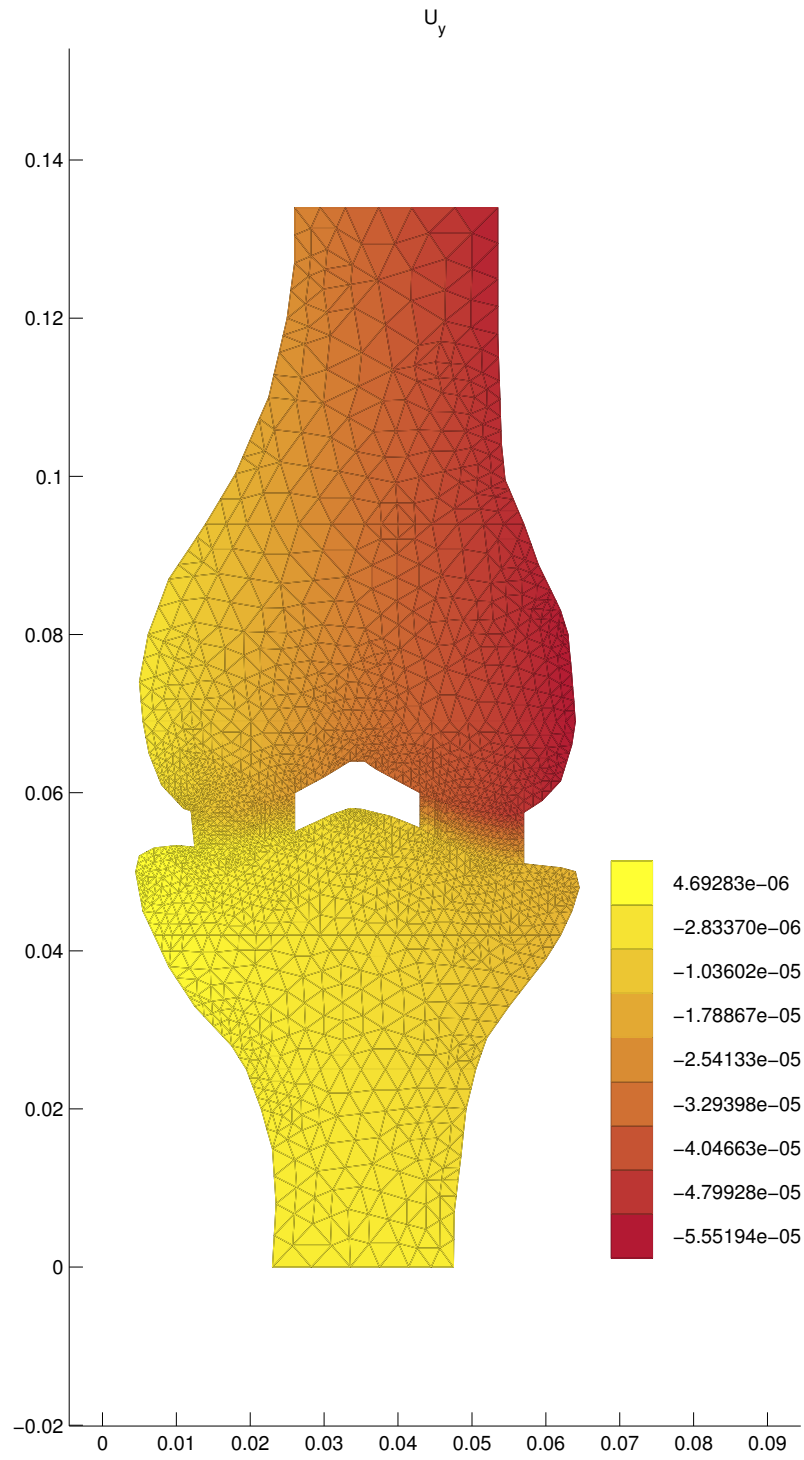


Figure 4: Vertical component of displacement

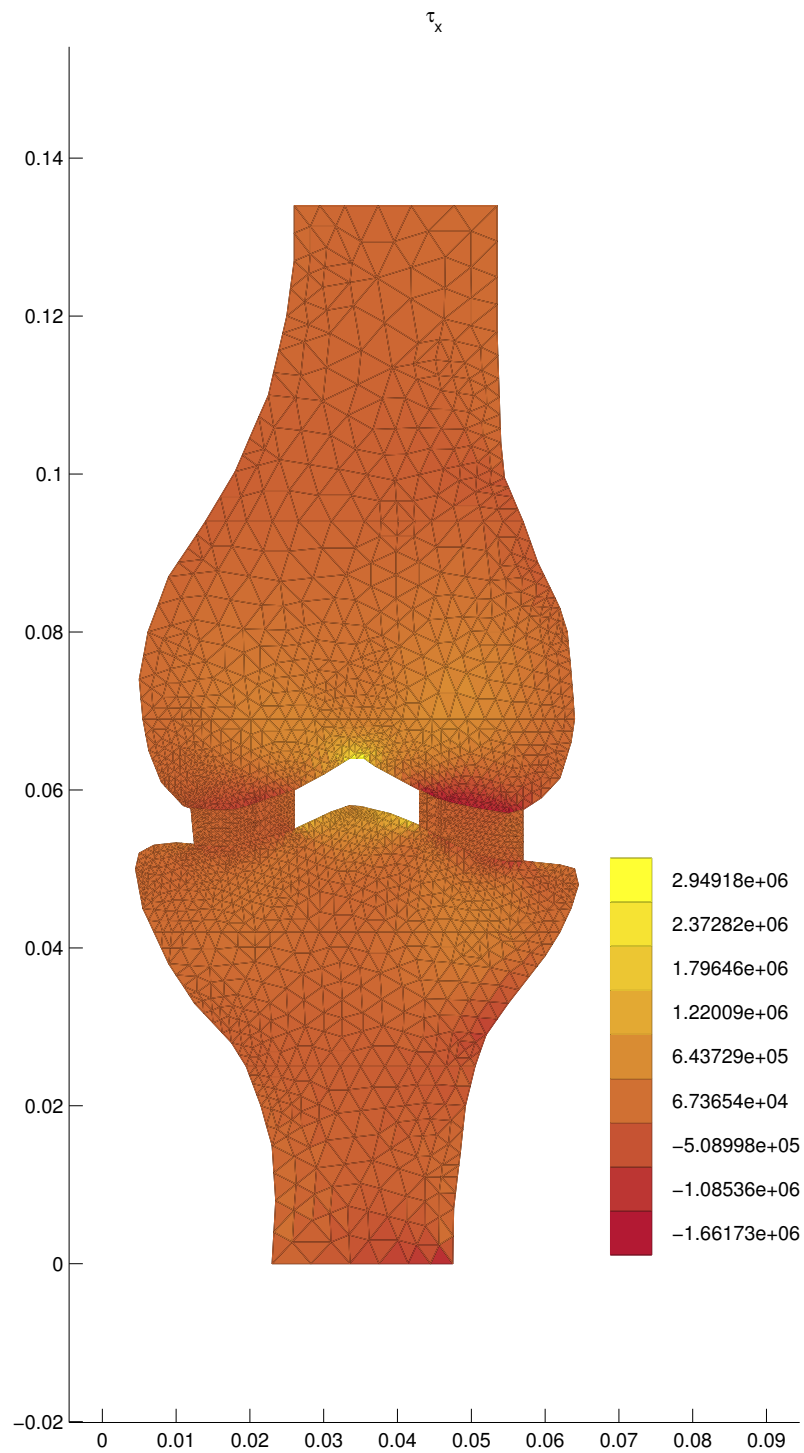


Figure 5: Stresses τ_x

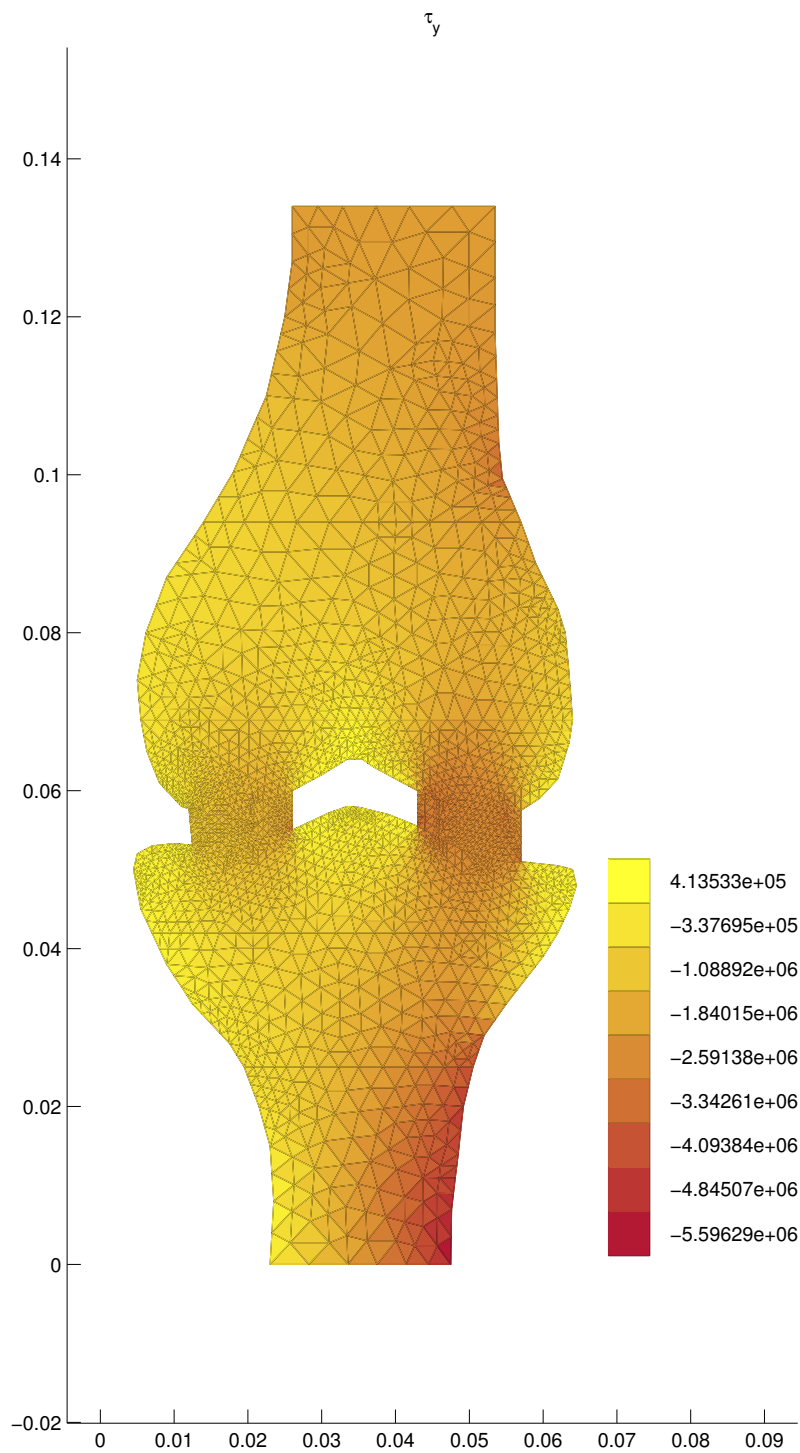


Figure 6: Stresses τ_y

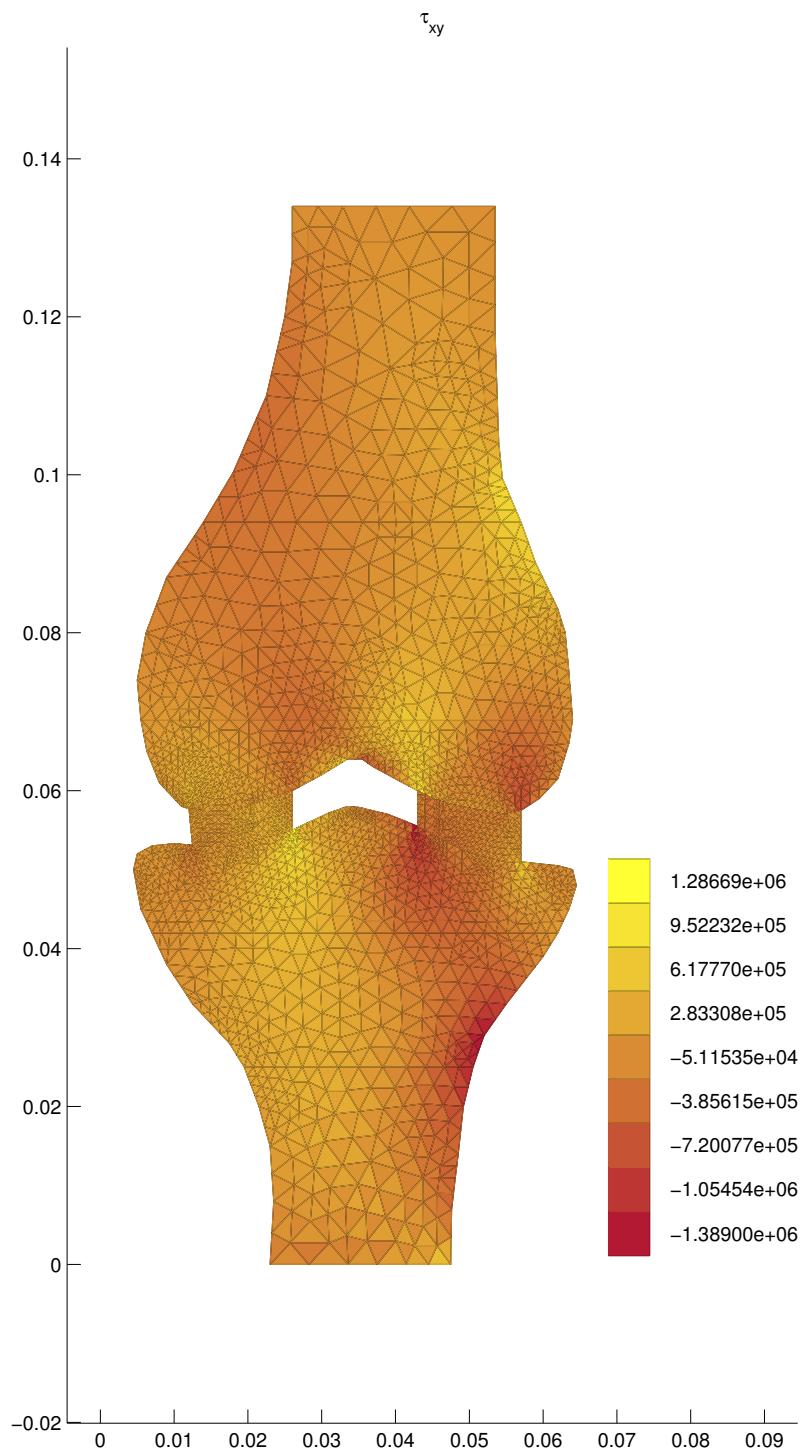


Figure 7: Stresses τ_{xy}

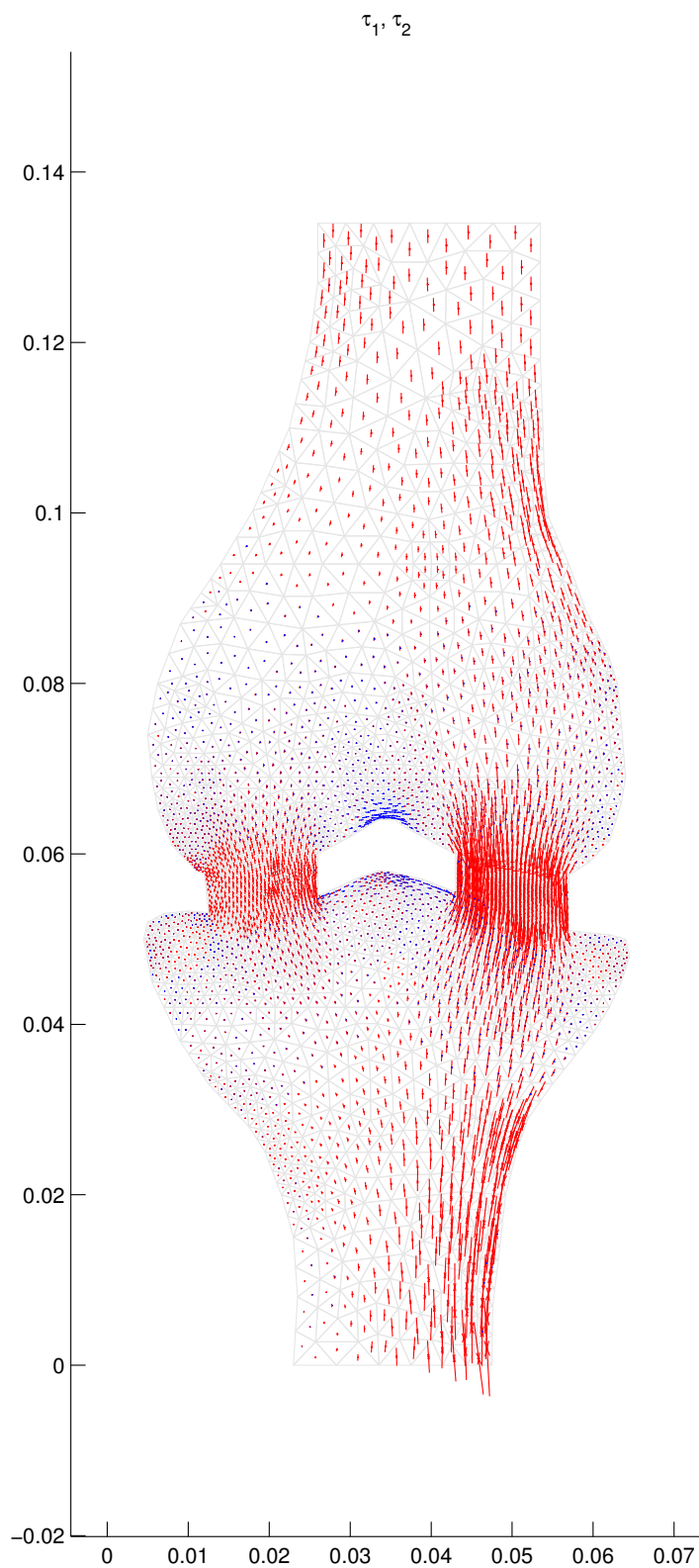


Figure 8: Principal stresses.