Numerical experiment 2

Material parameters:

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

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

Boundary conditions:

Prescribed zero displacement on 1-2

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

Unilateral contact boundary: 5-6 and 7-8.

Discretization statistics:

10 subdomains, 1927 nodes, 3612 elements,

34 unilateral contact conditions, 160 interface elements.

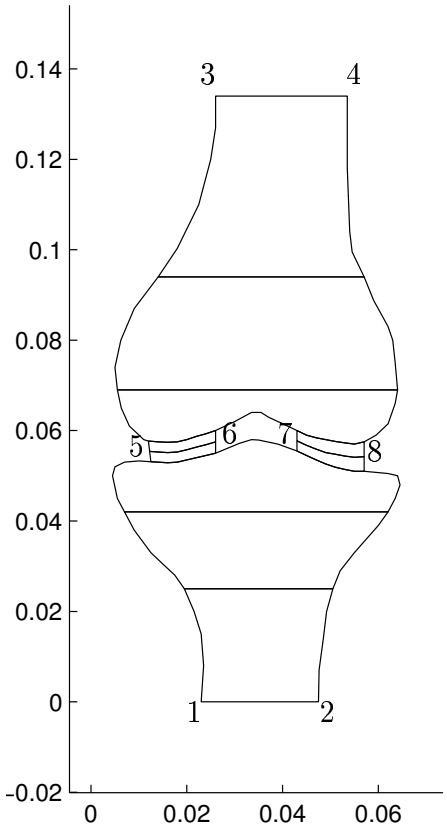

Figure 9: Geometry

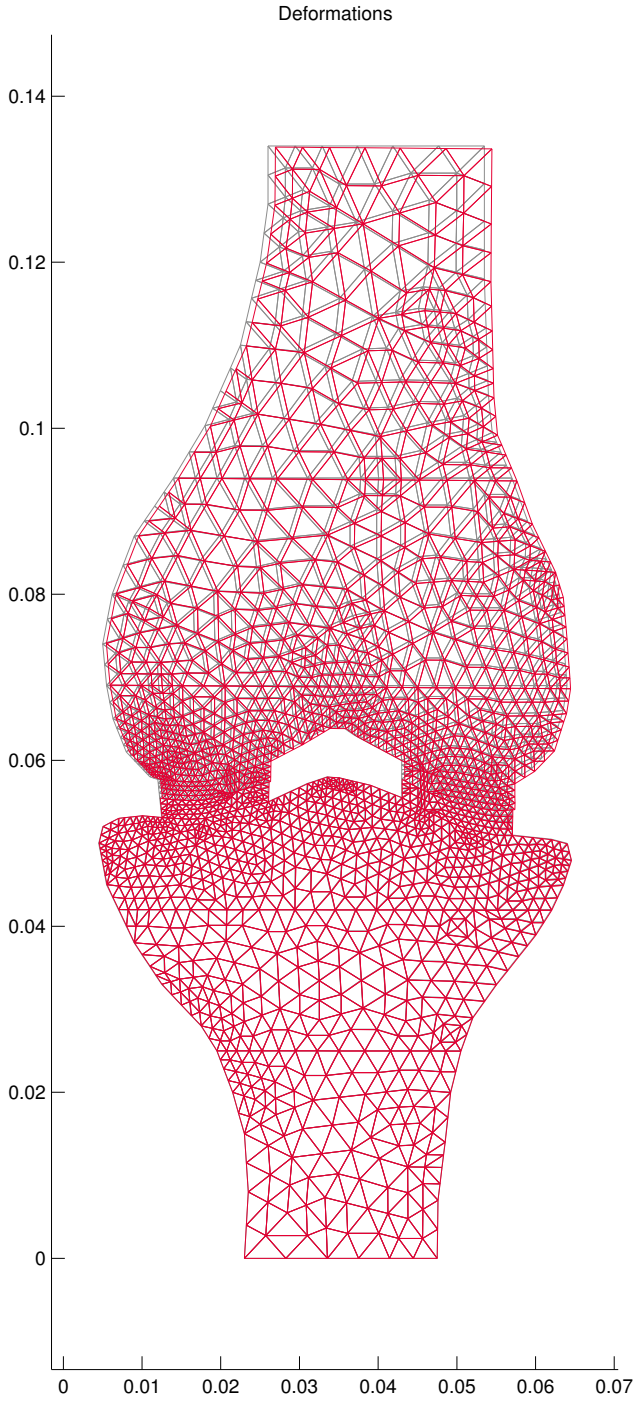

Figure 10: Deformations (enlarge factor=5)

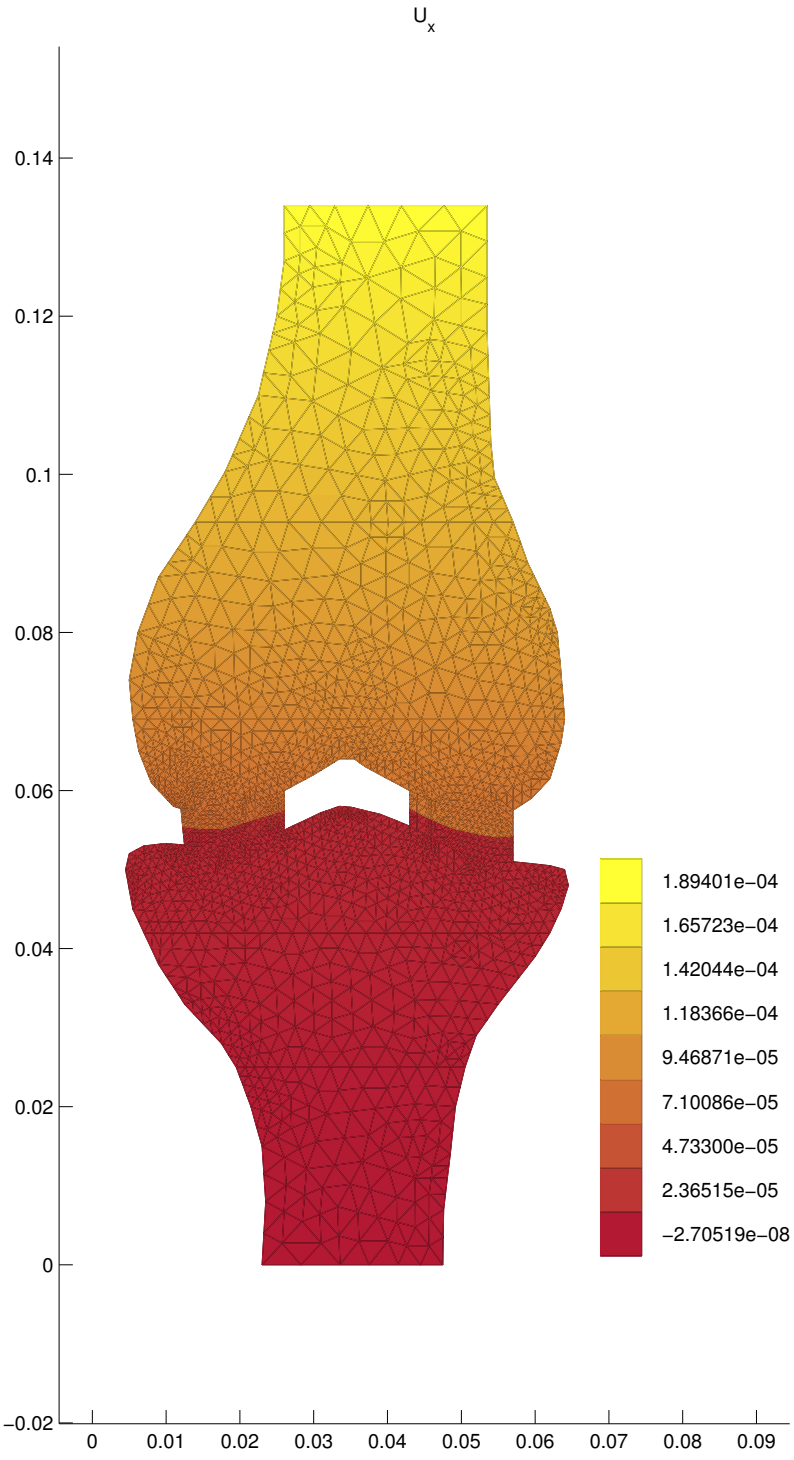

Figure 11: Horizontal component of displacement

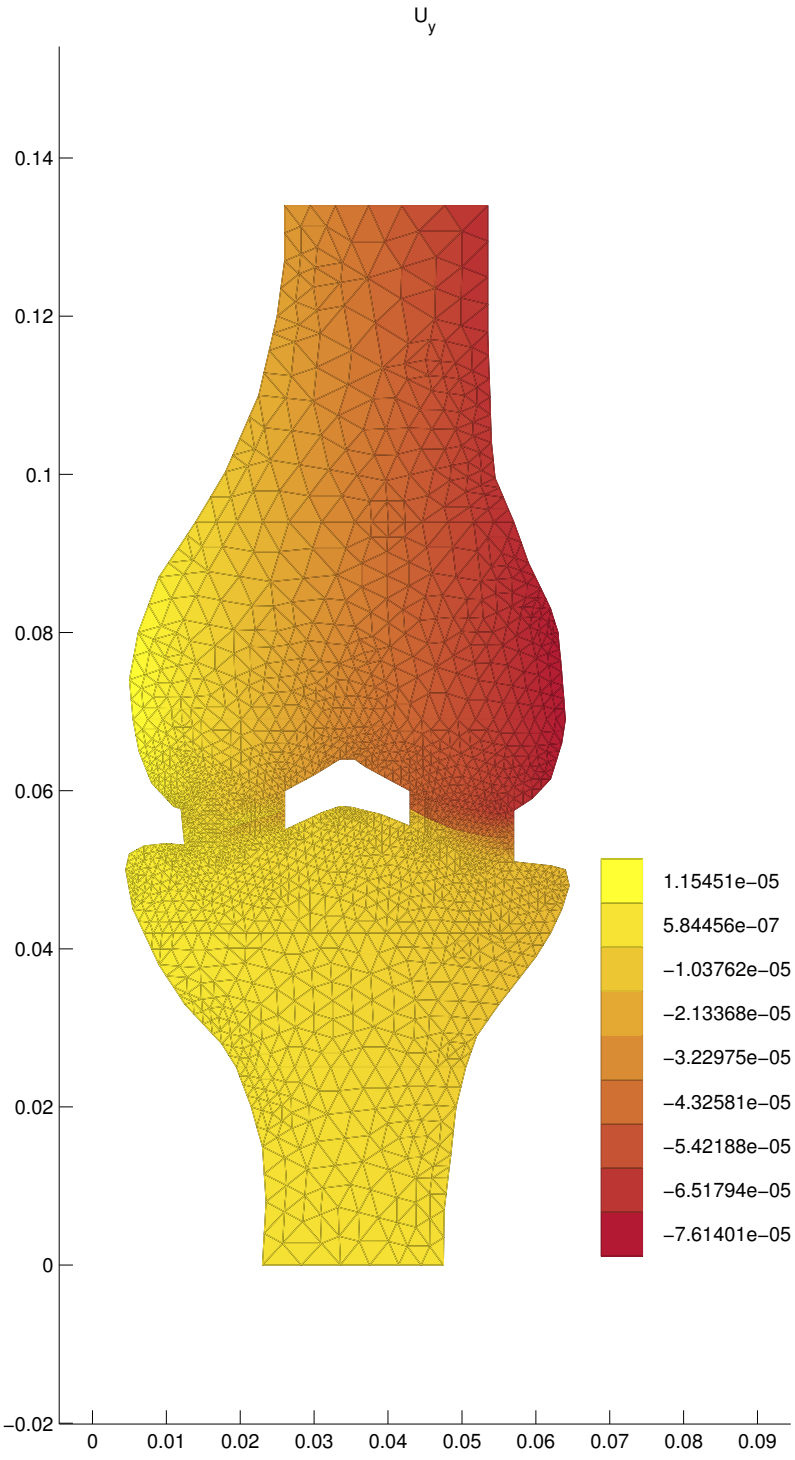

Figure 12: Vertical component of displacement

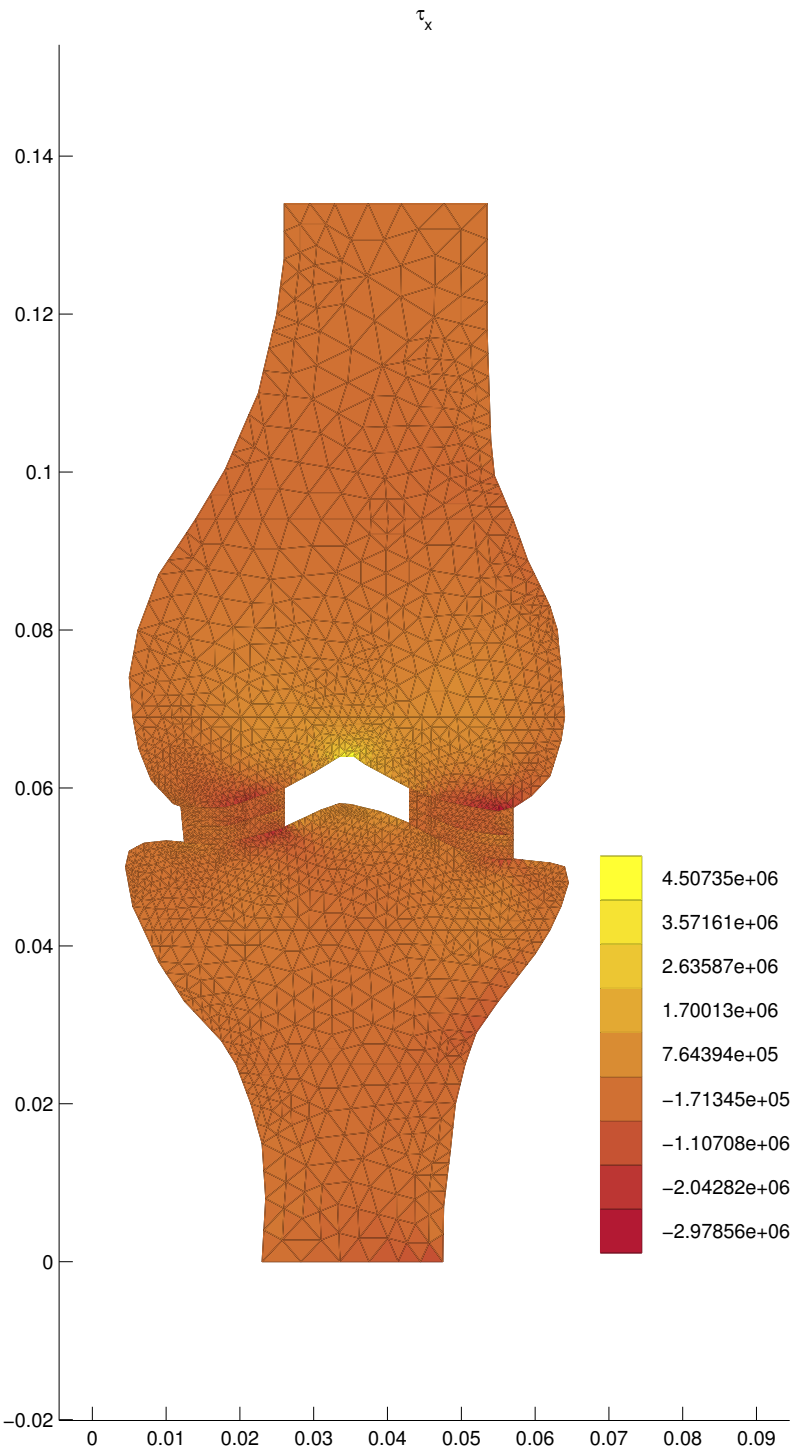

Figure 13: Stresses τ_x

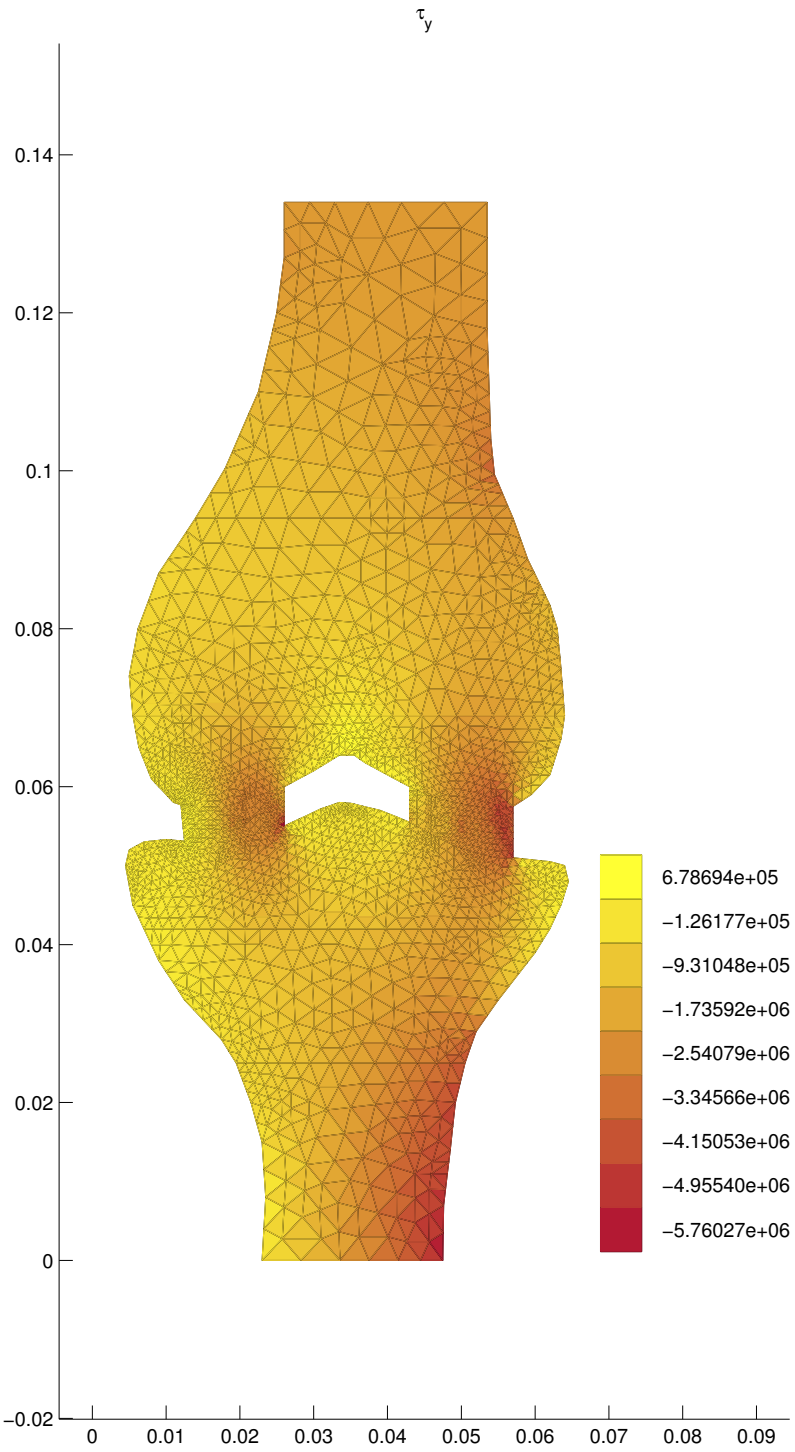

Figure 14: Stresses τ_y

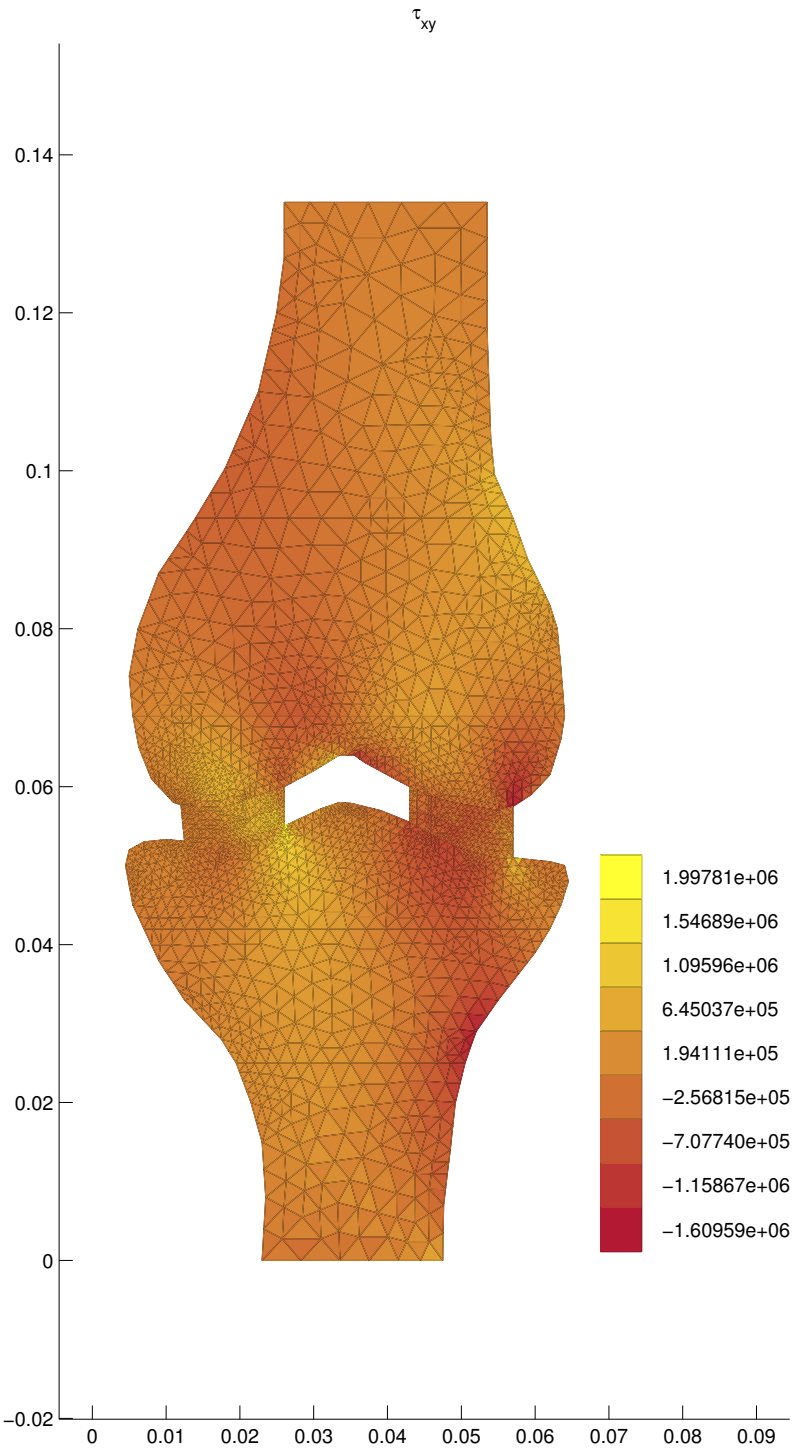

Figure 15: Stresses τ_{xy}

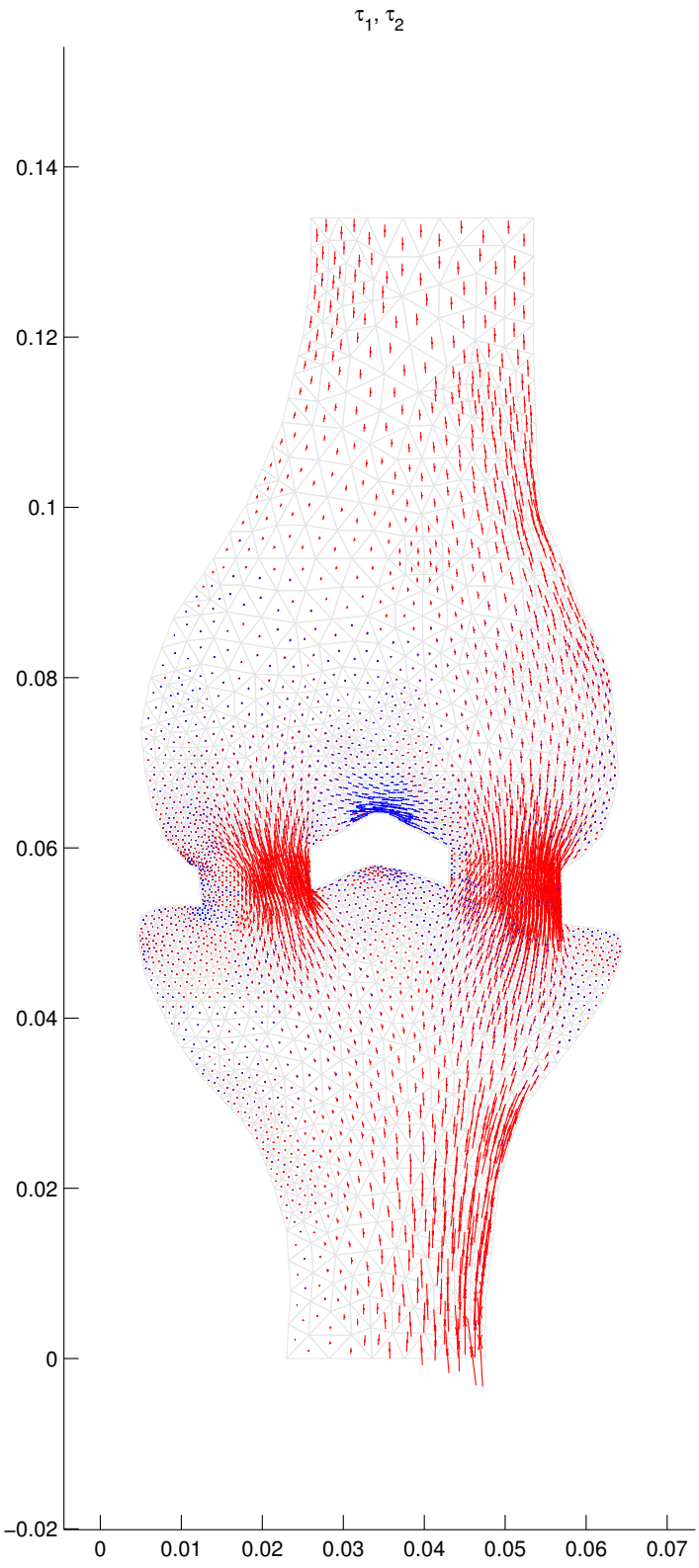

Figure 16: Principal stresses.

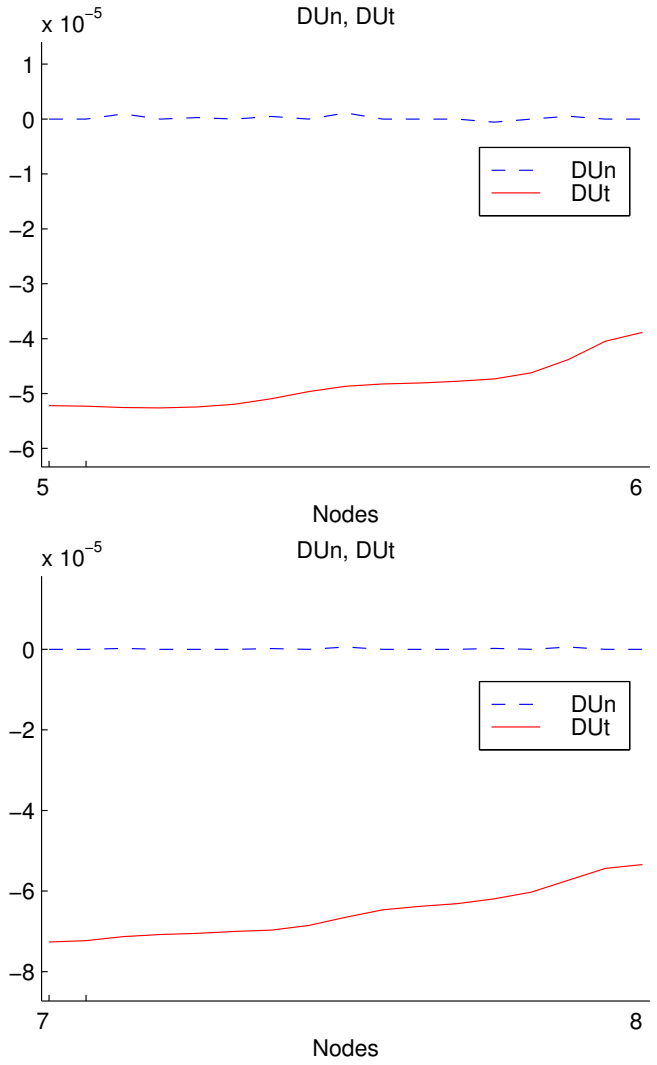

Figure 17: A normal and tangential components of displacement on contact boundary.

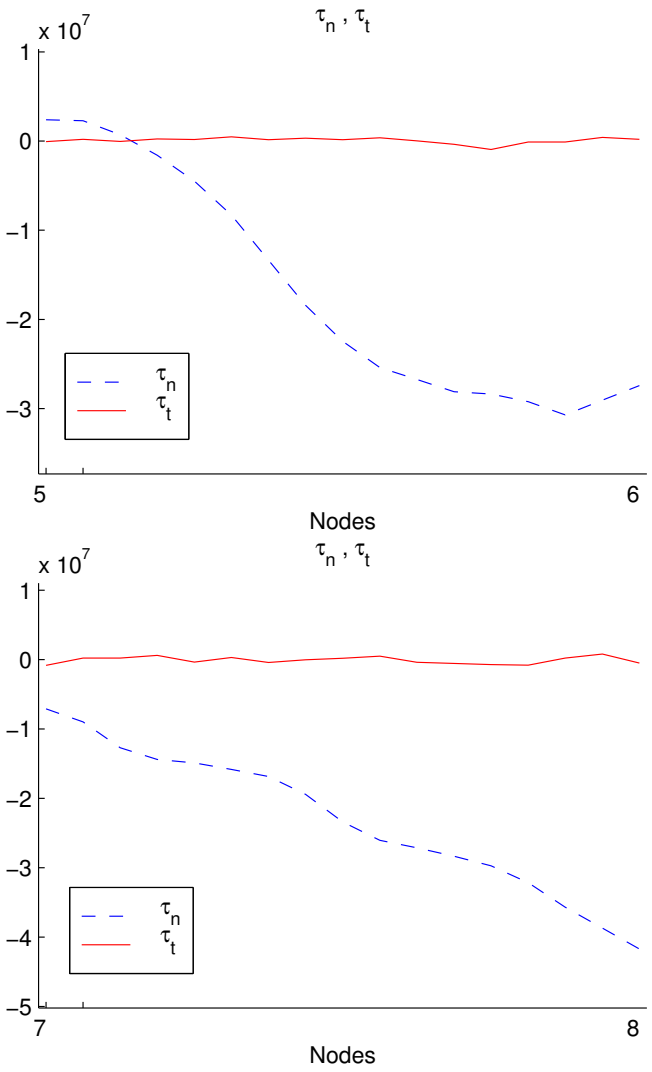

Figure 18: A normal and tangential components of stress on contact boundary.