Study 2:

**Part 1)**

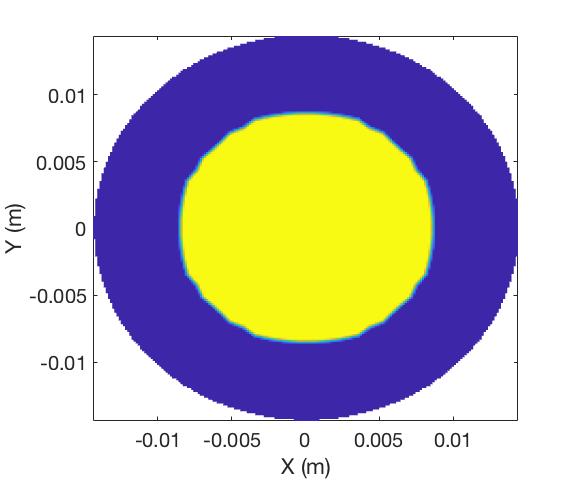
Human healthy femur:

Cortical material: G=4GPa

Trabecular material: G=13GPa

R2

A close up of a logo

Description automatically generated1.

R1

R1=8.63mm

R2=14.60mm

Angle of twist per unit length: 0.0010 rad/m

Torsional rigidity: 363.0207 N.m^2/rad

Total torque: 0.3630 N.m

Max stress resultant: 0.1118 MPa

A close up of a logo

Description automatically generated

A close up of a logo

Description automatically generated2.

R2

R1

R0

R1=8.63mm

R2=14.60mm

R0=4mm

Angle of twist per unit length: 0.0010 rad/m

Torsional rigidity: 357.5189 N.m^2/rad

Total torque: 0.3575 N.m

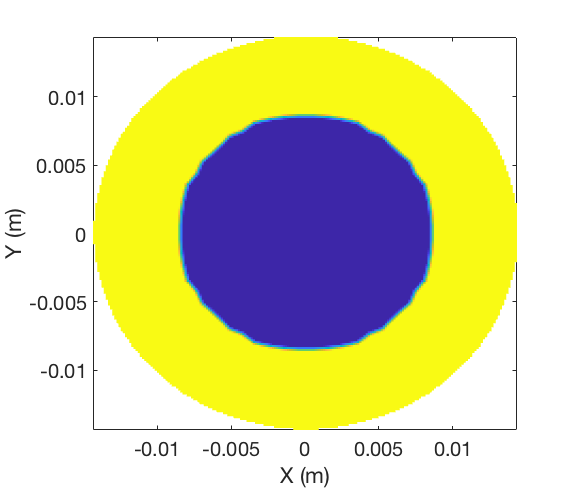
Max stress resultant: 0.1159 MPa

3.

R2

R1

A close up of a logo

Description automatically generated

R1=8.63mm

R2=14.60mm

Angle of twist per unit length: 0.0010 rad/m

Torsional rigidity: 248.6939 N.m^2/rad

Total torque: 0.2487 N.m

Max stress resultant: 0.0577 MPa

**Part 2)**

Human femur with fracture:

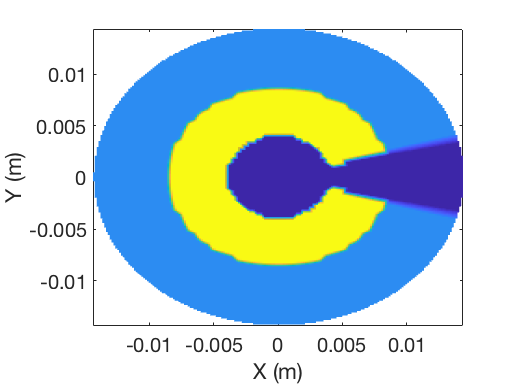
Cortical material: G=4GPa

Trabecular material: G=13GPa

Fracture angle: pi/6

A close up of text on a white background

Description automatically generated1.



R2

R1

R0

Angle of twist per unit length: 0.0010 rad/m

Torsional rigidity: 325.2520 N.m^2/rad

Total torque: 0.3253 N.m

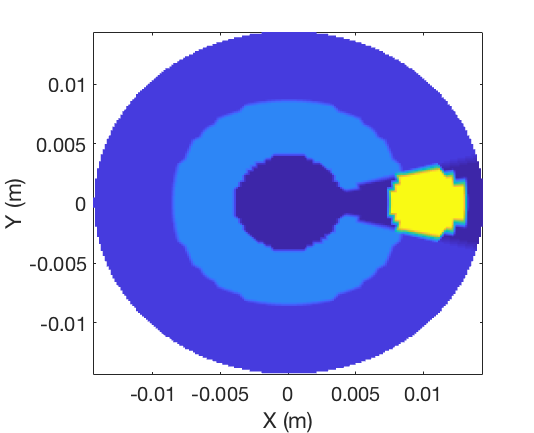
Max stress resultant: 0.5266 MPa

2.

A close up of a logo

Description automatically generated

R2



R1

R0

Angle of twist per unit length: 0.0010 rad/m

Torsional rigidity: 447.7356 N.m^2/rad

Total torque: 0.4477 N.m

Max stress resultant: 1.9312 MPa (steel)

A screenshot of a cell phone

Description automatically generatedMax stress resultant: 0.45 MPa (bone)

A close up of a logo

Description automatically generated

3.

R2

R1

R0

Angle of twist per unit length: 0.0010 rad/m

Torsional rigidity: 545.5474 N.m^2/rad

Total torque: 0.5455 N.m

Max stress resultant: 2.3233 MPa (steel)

Max stress resultant: 0.60 MPa (bone)