High Resolution FE Model of Bone - Verification & Validation

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Problem Specification
1. Pre-Analysis & Start-Up
2. Geometry
3. Mesh
4. Physics Setup
5. Numerical Solution
6. Numerical Results
7. Verification & Validation
Exercises

Comments

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Verification & Validation

Recall from Pre-analysis, the equivalent stiffness of the bone model is:

$$E_{equiv} = \frac{\sigma_{equiv}}{\varepsilon_{equiv}} = \frac{R/Area}{\delta/L} = \frac{R/L^2}{\delta/L}$$
$$E_{equiv} = \frac{72.558/(4.947x10^{-3})^2}{0.5/4.947} = 29.33 MPa$$

ANSYS gives a stiffness of 29.33 MPa for the bone model. According to Professor Hernandez, the stiffness for this model is about 24MPa. There is an 22% error and the source of the error is currently being determined.

Go to Exercises

Go to all ANSYS Learning Modules