Modal Analysis of a Composite Monocoque - Numerical Results

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Numerical Results

Ansys results for tangential displacement is shown in the picture below:



The maximum tangential deformation occurs at the tip of the suspension links, which is reasonable, and the tangential value is 0.0226 inches.

 $\theta = \frac{180}{\pi} \tan^{-1} \frac{\delta_t}{L}$ $\tau = F * L$ $k_t = \frac{\tau}{\theta}$ $\theta: Angle of rotation$ $\delta_t: Tangential displacement from Ansys$ L: Length of the moment arm F: Force applied $\tau: Torque$ $K_t: Torsional Stif fness$

Using the equations given above, you can calculate the torsional stiffness to be 5797.41 ft-lb/deg.

Go to Step 7: Verification & Validation

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