

# Modal Analysis of a Composite Monocoque - Numerical Results

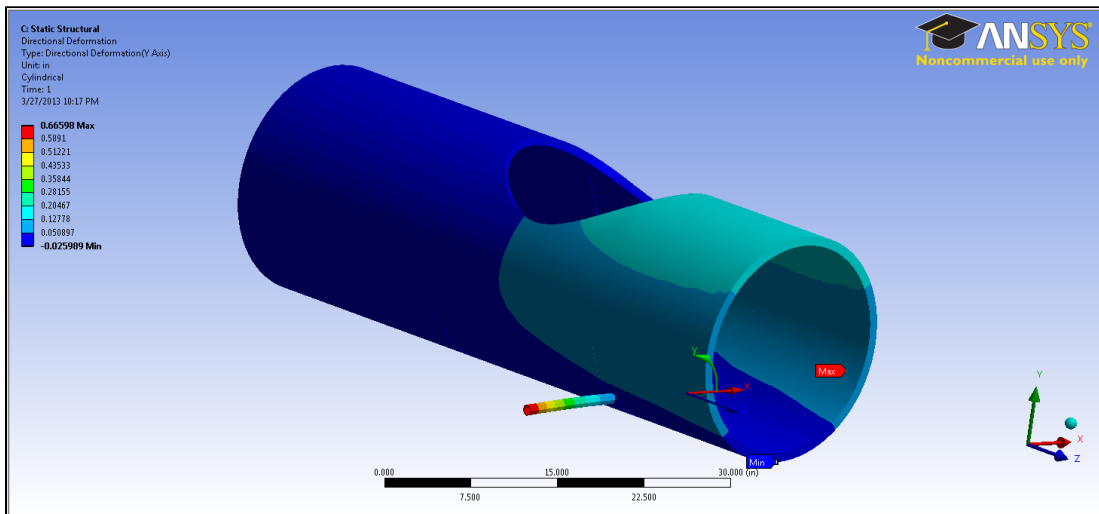
Author: Jingsi Wu, Cornell University

## Problem Specification

1. Pre-Analysis & Start-Up
  2. Geometry
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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 Stiffness

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

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