# Wind Turbine Blade - Numerical Solution

Author: Ben Mullen, Cornell University

**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

## **Numerical Solution**



This tutorial is not being updated any more. We recommend that you follow this newer tutorial on fluid-structure analysis of a wind turbine blade. Thank you!

#### **Deformation**

To add deformation to the solution, first click Solution (B5) to add the solution sub menu to menu bar. Now in the solution sub menu click Deformation > Total to add the total deformation to the solution. It should appear in the outline tree.

### **Equivalent Stress**

In the solution sub menu, select Stress > Equivalent (von-Mises). In the details pane, ensure Geometry is set to All Bodies.

#### **Normal Stress**

In the solution sub menu, select Stress > Normal. In the details pane, ensure Orientation is set to X Axis, and Geometry is set to All Bodies. Rename the Stress to StressXX by right clicking Normal Stress in the Outline window and selecting Rename.

We are ready to solve the simulation. Press Solve



Go to Step 6: Numerical Results

Go to all ANSYS Learning Modules