AIM Bike Crank - Numerical Results, Verification & Validation

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

Numerical Results

The following video shows how to plot the deformed shape and use it to check if the displacement constraints have been applied correctly. We next take a look at

:T,

variation in the model. We interrogate

:T,

variation in the interior of the model using a plane.

Verification and Validation

- Check that the solution agrees with the mathematical model
    - Are the boundary conditions on displacement and traction satisfied?
    - Is equilibrium satisfied?
        - Do the reaction forces balance the applied load?
- Check that the numerical error is acceptable
    - Are the ANSYS results reasonably independent of the mesh?
        - We can refine the mesh by reducing the Size Controls and updating the solution. We can then compare the results to the original mesh.
- Compare with hand calculations for the bending stress and maximum displacement

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