AIM Bike Crank - Numerical Results, Verification & Validation

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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

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variation in the model. We interrogate

:ℸ,

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