

Question 20

Q: How to calculate the shape that has been deformed by static force?

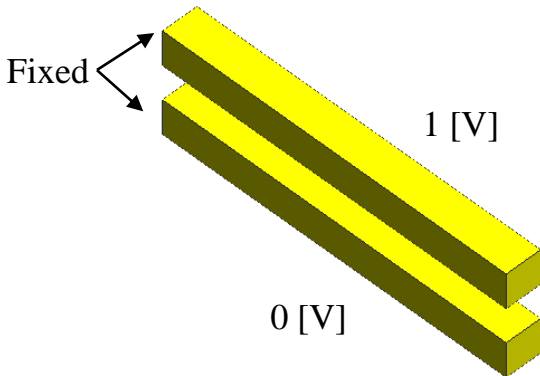
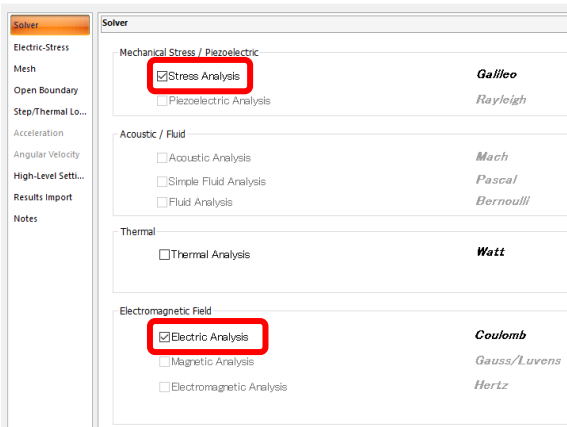
A: Perform the electric-stress coupled analysis to obtain the deformed shape.

Please refer to the next few slides.

Additional Information

- Two cantilevers of aluminum that are attracted to each other by applied electric potential are analyzed.
- Select [Electric Analysis] and [Stress Analysis].
- [Electric Potential] and [Fixed Displacement] are set to an electric boundary condition and a mechanical boundary condition, respectively. Be aware that the cantilevers will be moved freely by electrostatic force if not fixed.
- Boundary Condition
 - Outer Boundary: Electric Wall specified by 0 [V]
 - Air Domain: [Create ambient air automatically] selected
- Material of the cantilever: Aluminum (Available from the material DB)

Analysis Condition Setting



Additional Information

- The vectors of the resultant electrostatic force indicate that the aluminum cantilevers are mutually attracting each other.
- The displacement vectors and displacement diagram indicate the aluminum cantilevers are attracted from each other and undergo deformation.

