Question 15

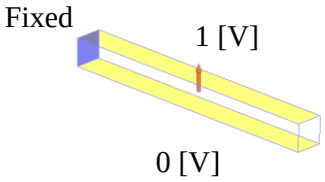
Q: When resonant frequencies are displayed in the mode on the results tab, why is 'no convergence' displayed there?

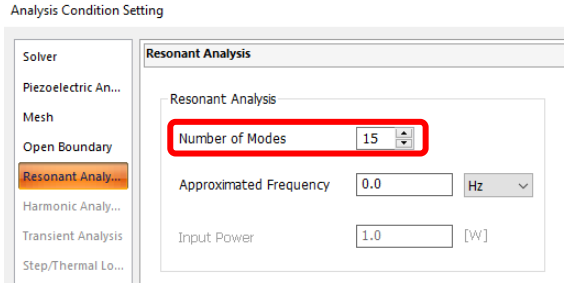
A: In the resonant analysis, a model should be divided into a size of one-fourth to one-sixth wavelength to accurately represent the deformed shape that is determined by a vibration mode.
The next slide's model of a cantilever fixed at one end has transverse modes of vibration. The length of the cantilever equals one-fourth of the primary mode's wavelength and three-fourth of the second mode's wavelength. This means the secondary mode's wavelength is shorter than the primary mode's. To represent the deformed shape of higher vibration modes, finer meshes are required in response to their wavelengths or frequencies.

If coarser meshes fail to represent the deformed shape of interest, 'no convergence' may be displayed in the mode on the results tab. In such a case, due to low analysis accuracy, it is advised not to use results related to the resonant mode and frequency.
If 'no convergence' is displayed, finer meshes should be used to represent the deformed shape or reduce the number of resonant modes to calculate for lower computation load.

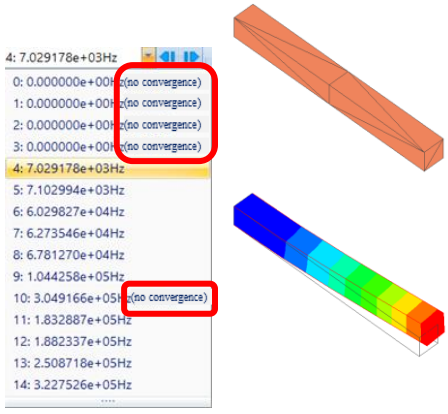
Please refer to the next slide.

Additional Information

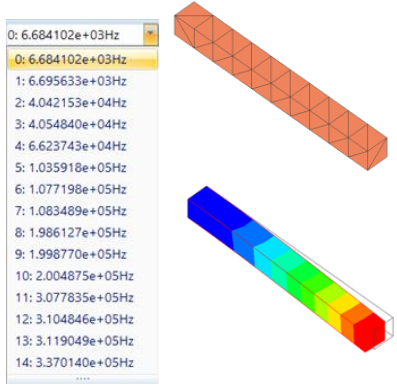




Coarse meshes



Fine meshes



‘Non-convergence’ is not displayed with finer meshes.