Question 17

🌔 Murata Software

Q: What is the 2D approximation in 2D analysis?

A: There are two approximations in 2D analysis as shown below. 2D Cross Section (Planer strain)

It is assumed as follows:

The object is fixed in the Y direction and there will be no displacement in the Y direction. The Y component of the strain is zero and only X/Z components are taken into account. In the event of SH waves, however, by unselecting [Y Displacement] for the variable to constrain, displacement in the Y direction can be taken into account.

Plane stress

It is assumed as follows:

The Y component of the stress is zero and only X/Z components are taken into account. The object's Y dimension is considerably smaller than the X/Z dimensions and the object can deform freely in the Y direction.

Set the thickness in the Y direction to [Thickness in depth direction] in the [Analysis Space Setting] dialog box.

This allows you to analyze the model having specified thickness to calculate the equivalent capacitance and equivalent inductance of the whole model.

Additional Information



Analysis Space Settin	ng X	
Model Unit	Analysis Space	
⊖um	©2D	
⊚ mm	Thickness in Depth Direction 1.0 [mm]	
Om	Axisymmetric	Z
	⊖3D	×
	OK Cancel <u>H</u> elp	

Thickness in depth direction

Analysis Condition Setting				
Piezoelectric Analysis				
Analysis Type	Analysis Plane	Variables to Constrain		
O Static Analysis	② 2D Cross Section	Electric Potential		
Resonant Analysis	○Plane Stress	X Displacement		
O Harmonic Analysis	Large Deformation	✓ Y Displacement		
 Transient Analysis 	Large Displacement	Z Displacement		
	Piezoelectric Analysis Analysis Type Static Analysis (Resonant Analysis) Harmonic Analysis Transient Analysis	Analysis Type Analysis Type Static Analysis Resonant Analysis Harmonic Analysis Transient Analysis Large Deformation Large Displacement		