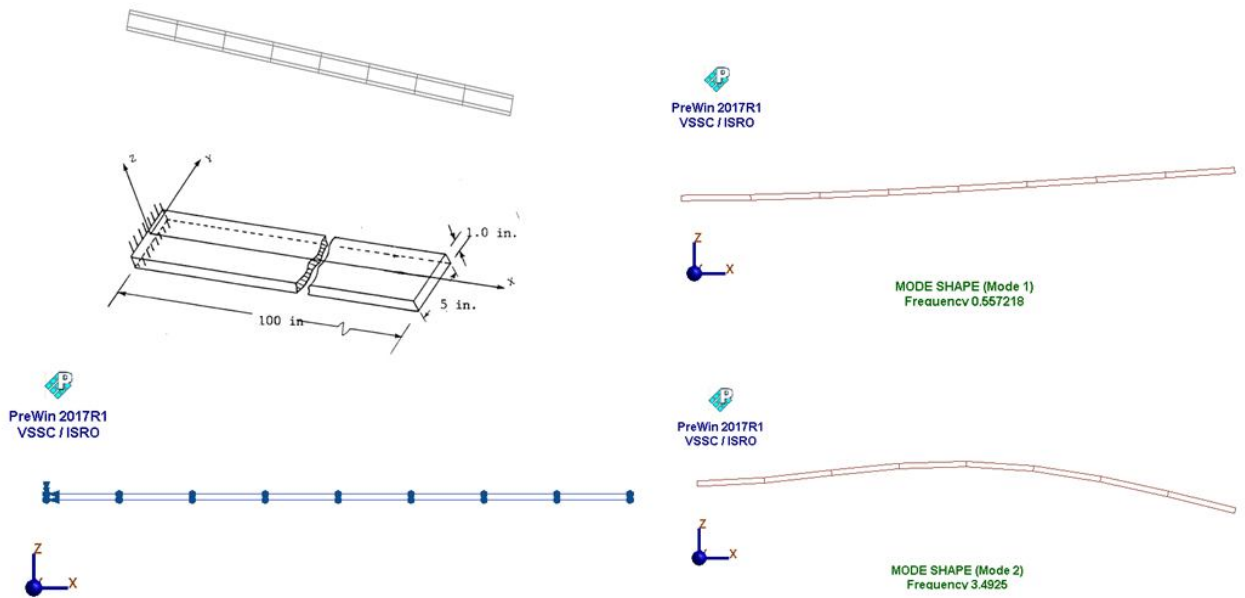


Free vibration analysis of a cantilever beam using solid elements-1



Boundary condition : $U_x, U_y, U_z = 0$ at left end. $U_y = 0$ at all nodes

Material property : $E = 12 \times 10^8 \text{ psi}$, $\nu = 0.0$, $\rho = 1.0 \text{ lb-sec}^2/\text{in}^4$

Element type : 3-D solid element

Finite element statistics :

Number of elements	Number of nodes	Degrees of freedom
8	36	64

Mode	Theoretical	FEAST ^{SMT}	NISA2 [®]
Bending 1	0.5595	0.557218	0.561
Bending 2	3.5067	3.4925	3.643
Bending 3	9.82	9.92947	10.97
Bending 4	19.244	20.2095	24.19
Bending 5	31.809	36.0319	47.38
Bending 6	47.517	62.1155	90.03
Bending 7	66.366	114.641	182.1
Axial 1	86.603	86.4635	86.74