

# NOTES ON VIBRATION MODELING:

1) INCREASING ELEMENT NUMBERS WILL RESULT IN MORE NATURAL FREQ'S TO BE EXTRACTED ACCURATELY.

2) USE OF SYMMETRY

SYMMETRIC MODELS REVEAL SYMM. MODES AND FREQ.'S ONLY! THESE MAY NOT BE CRITICAL MODES & FREQ'S

3) ELEMENT SELECTION

NATURE OF CHOSEN ELEM. DICTATES THE MODES AND FREQ'S. 2-D BEAM ELEM'S ALLOW FOR IN-PLANE MODES AND FREQ'S. 2-D PLANE STRESS (STRAIN) CAPTURE PLANAR MODES & FREQ'S.

USE SHELLS TO CAPTURE OUT-OF-PLANE MODES AND FREQ'S.

4) USE OF LUMPED MASS IN MODELING

IF GEOMETRY OF PORTIONS OF THE SYSTEM DO NOT PLAY A SIGNIFICANT ROLE IN OVERALL STIFFNESS, WE CAN REPLACE THOSE PORTIONS WITH LUMPED MASSES, AND IN THE PROCESS SIGNIFICANTLY SIMPLIFY THE MODEL.



