ANSYS - Vibration Analysis of a Frame - Step 8

Step 8: Postprocess the results

Enter Postprocessing module to analyze solution

Main Menu > General Postproc

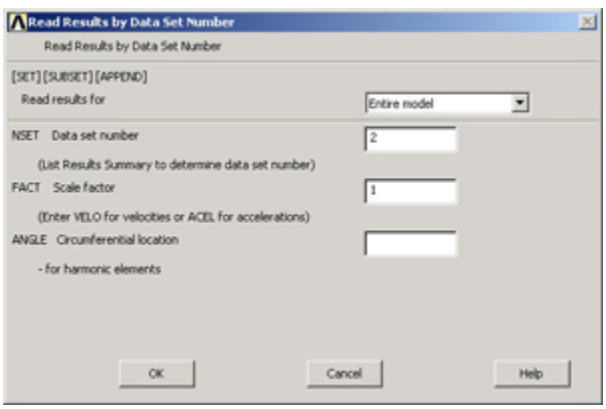
Select ***Results Summary***.

This shows you the cyclic frequencies of the ten modes. Compare with the values in the book.

View Mode Shape for Mode 2

Read Results > By Set Numbers

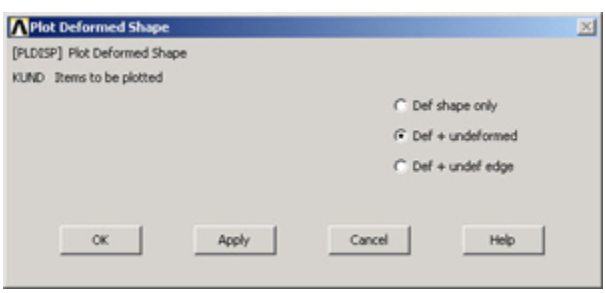
Enter 2 for ***NSET***.



Click ***OK***.

Plot Results > Deformed Shape

Select ***Def+undeformed***.



Click ***OK***.

This plots the mode shape for mode 2. Similarly, look at the other mode shape and compare them with figure 11.17-2 in the book.

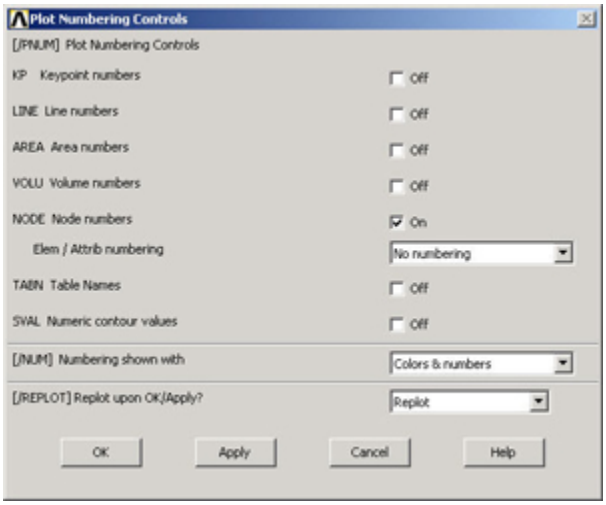
Find Mode Numbers

Table 11.17-1 gives amplitude values for selected d.o.f. for three nodes.

To find the node numbers corresponding to the ones in the book, turn on node numbering.

Utility Menu > PlotCtrls > Numbering

Turn on ***Node Numbers***.



Click ***OK***.

If you need to refresh the screen: **Utility Menu > Plot > Multi-plots**

By comparing the node numbers, we find:

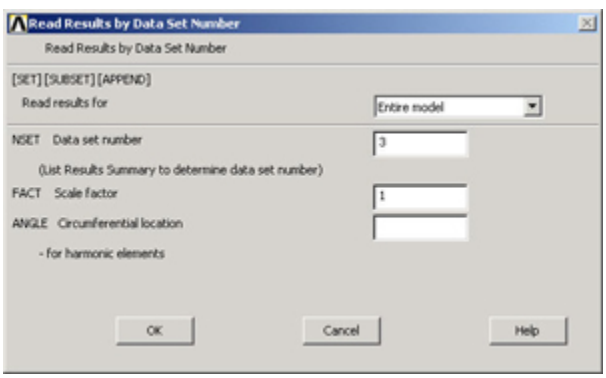
Node Numbers		Cook et al.	ANSYS
16	17		
41	42		
51	32		

Determine the Displacement Amplitude

To determine the displacement amplitude at node 17 for mode 3,

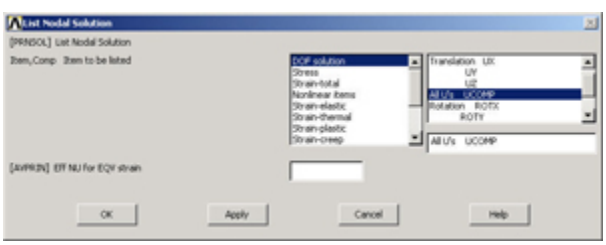
General **Post Proc > Read Results > By Set Number**

Enter 3 for ***NSET***.



General Post ***Proc > List Results > Nodal Solution***

Select ***UCOMP***.



From the list, the displacement amplitude, denoted as ***USUM***, is 23.9e-3. The corresponding value in table 11.17-1 is 23.8e-3. Similarly, you can determine the other entries in the table. Note that the rotational d.o.f. to use for the second row in the table is ***ROTZ***_._

Save your work

Click on ***SAVE_DB*** in the *ANSYS Toolbar* to save the database.

Go to Step 9: Validate the results

Go to all ANSYS Learning Modules