

COOL SOFTWARE TRICKS

EXTREMELY HELPFUL STUFF YOU WON'T FIND IN THE USER'S MANUAL



Exporting Deformed SHAPES

Here's an easy trick for exporting COSMOSWorks deformed shape results plots to SolidWorks

FEA RESULTS PLOTS OFTEN SHOW STRESS OR DISPLACEMENT VALUES displayed on geometry that has been deformed by the applied loads. In addition to visualizing the effects of applied loads graphically, if used as part of the CAD assembly model, deformed shape results plot models can pinpoint possible part interference.

COSMOSWorks users can save analysis results plots as VRML (Virtual Reality Modeling Language) files and either share them with co-workers or customers who don't have COSMOS via a free VRML plug-in or export them into SolidWorks. In SolidWorks, the deformed shape model helps design teams check whether applied loads will cause sufficient deformation to interfere with adjacent parts of an assembly.

To export the results, first the user runs a static stress analysis in COSMOSWorks, and then chooses to view a deformation plot from a menu of visualization possibilities. For export purposes, he needs to use true scale (scale factor = 1). He then right-clicks on the results plot and selects "Save As," and chooses VRML files (*.wrl) from the menu. Next, the user starts SolidWorks, and goes to the File menu and chooses "Open." In the "Files of Type" drop down menu, he selects VRML (*.wrl) and browses to the file he wants. At this point, the design engineer opens the "Import Options" dialog, clicks the "Options" button, and selects "import as Solid Body," followed by "OK." He also clicks "OK" in the "File Open" dialog, and the deformed shape of the dialog will be imported into SolidWorks as a solid model. The same technique may be used to export deformed displacement plots as well as stress plots.

After the export has been completed, the designer can include the model in his assembly document and check to see if the component, when deformed under applied load, causes any interference with adjacent parts in the assembly.

—Ramesh Ramalingam
COSMOS product manager
ram@solidworks.com

You need this trick if: You're a user of COSMOSWorks and want to check for any interference in an assembly caused by the part due to deformation from applied loads.

To see and share VRML versions of deformation results plots, users will find a link for downloading a free VRML viewer at:
<http://rbi.ims.ca/4911-518>, <http://rbi.ims.ca/4911-519>

Four Easy Steps to Checking Interference

1) Menu pick for selecting VRML in COSMOSWorks "Save As" menu.

2) Import options dialog box in SolidWorks.

3) Deformed shape model.

4) VRML options.

Got a cool software trick? Send us details, including any documentation and supporting code, to kfield@reedbusiness.com. If we publish your trick, we'll send you a super cool, limited-edition *Design News* t-shirt.