

#<Number> : Use PLOTEL3/4 Plate elements to reduce results size for mode shape

Product: OptiStruct

Product Version: OptiStruct 13.0 and greater

Partner: -

Computer Hardware: All supported

Computer Operating System: Window

Industry: All

Categories: OptiStruct

Subcategories:

Topic Objective

The usage of coarse plate elements (PLOTEL3/4) for display and visualization

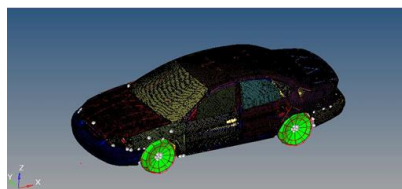
Background

Coarse display model (PLOTEL3/4) is 1~2 % of the original detailed FE model size

Used for pre- and post- visualization

Support by HyperMesh and OptiStruct solver

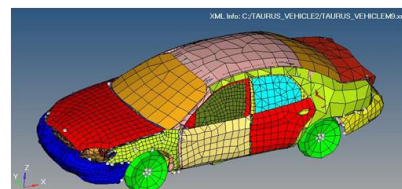
Much smaller results files



Detailed Mesh



Results on Detailed Mesh



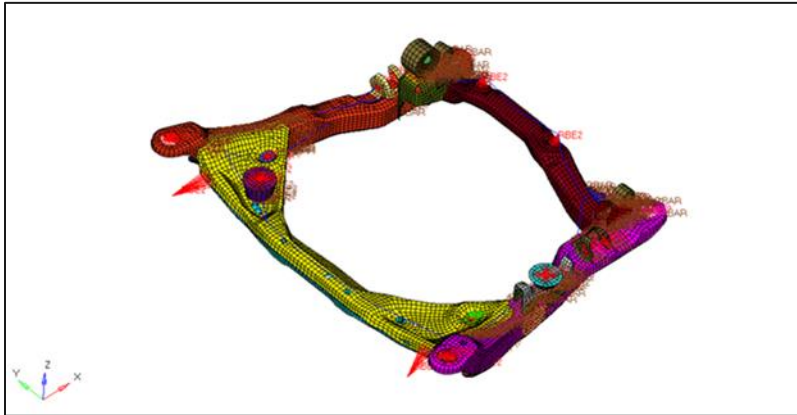
Coarse Display Mesh



Results on Coarse Display Mesh

Model Details

Front subframe in automotive



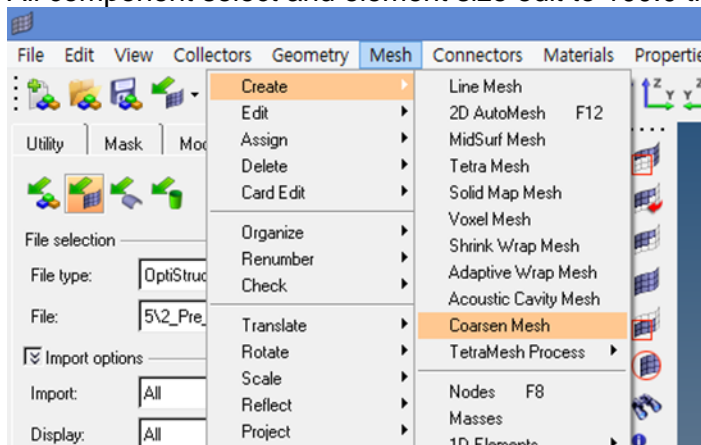
Assumptions / Limitations

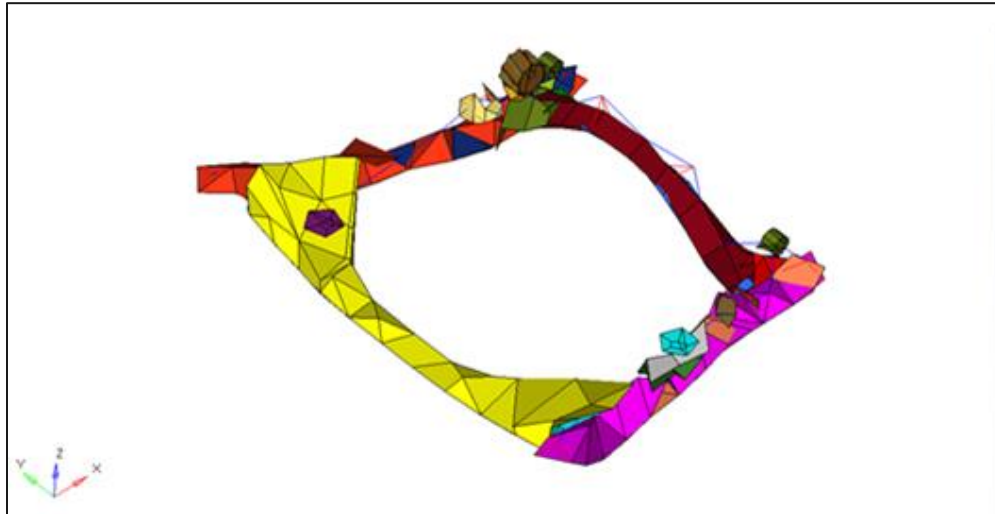
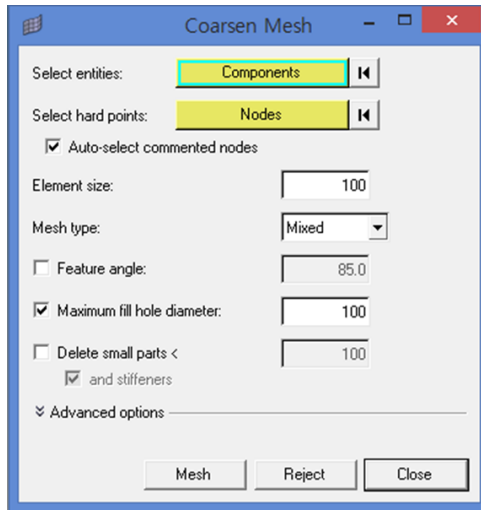
Boundary Condition

Free Free Normal mode

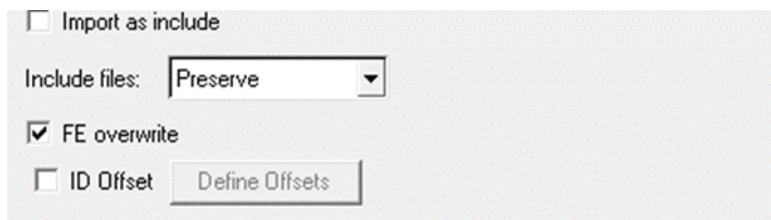
Step by Step Procedure

1. Import **subframe.fem** in HyperMesh
2. Mesh full down menu → Create → Coarse Mesh
All component select and element size edit to 100.0 then hit Mesh button





- ✂ Above new coarse model is PLOTTEL3/4 and original model is completely deleted.
- ✂ But do Not Save this Model with the original file name. You will lose your detail model if you don't give it a new name.
- 3. Then you can import original model (subframe.fem) file to HM. You have to use "FE overwrite" for import option.



4. MODEL card setup

Analysis page → control cards → MODEL

MODEL	PLOTEL	TYPE NORIGID
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5. Create EIGRL card and Normal mode load step
6. Analysis

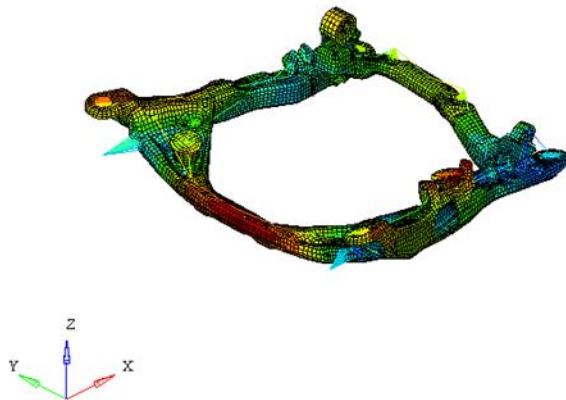
Results & Reports

Detailed model vs coarse display model
Same mode shape and much smaller result file size

Model info: F:\AltairKorea_Customer_NVH_Trainings\Pre_Processors\Coarse_disp...
Result: F:\AltairKorea_Customer_NVH_Trainings\Pre_Processors\Coarse_display\...
Subcase 1 (mode): Mode 9 - F = 1.279673E+02
Frame 1 : Angle 0.000000

Model info: F:\AltairKorea_Customer_NVH_Trainings\Pre_Processors\Coarse_disp...
Result: F:\AltairKorea_Customer_NVH_Trainings\Pre_Processors\Coarse_display\...
Subcase 1 (mode): Mode 9 - F = 1.279673E+02
Frame 1 : Angle 0.000000

h3d, 1.900 KB



h3d, 50KB

