



Working with FE Studies

FE Studies are powerful tools to facilitate the testing of different model configurations without having to modify the boundary conditions or copy the model.

If you work with FE Studies, you can create as many TMG boundary conditions as you want in a given FE model, and activate only a subset of those conditions for a given analysis run. The list of boundary conditions you select is stored in the study. Also stored in the FE Study are choices you make on the *Radiation Control*, *Solver Control*, *Initial Conditions*, *Restart Control*, *Ambient Conditions*, *Advanced Solver Options*, *Boundary Conditions Sets* and *Solution Data* forms, as well as the results of the analysis.

All defined boundary conditions are visible on the *TMG Study Setup* form. You can select from among the existing boundary conditions which ones should be applied to your model for the analysis.

Working with FE Studies is optional. A Default FE Study is created automatically when you create your FE Model. All the boundary conditions that you create are by default active in the Default FE Study.

See Also

- [Understanding FE Studies](#)
- [Model Management](#)

Using FE Studies

To test different model configurations, create new FE Studies using the *Manage FE Model* icon. Name each FE Study after the specific configuration it will model. In the TMG task, use *TMG Study Setup* to select the boundary conditions and solver controls to be applied to the current FE Study.

FE Studies allow you to have all your boundary conditions in one FE Model. For example, you may have several heat loads defined on the same surface. Through the *Entity Manager* you can check and modify them if necessary. Then, using different FE Studies, you can select which of the Heat Loads to use for a specific analysis.

With the *TMG Preferences* form (accessed from the menu and the *Preferences...* option), you can control in which FE Study new entities take effect.

- *Current FE Study* causes new entities you create to be active only in the FE Study that is current.
- *All FE Studies* causes new entities to be active in all FE Studies that exist when the entity is created.
- *No FE Study* causes new entities to be inactive in all FE Studies.

FE Study Advanced Features

With *Manage FE Study*, you can change the material or physical property tables used in a specific FE Study. You can change the property tables of the model or apply the modifications to selected elements only.

The new property tables will be used only in the FE Study that you select. All other FE Studies *are unaffected*.

Note that the elements themselves (element type, size, etc.) cannot be modified.

Using Different Run Directories

Use *Specify Run Directory* to specify where the TMG solver will write its output files, including results, messages, warnings/errors, convergence plots, and scratch files. TMG will overwrite any similar files already present in a specified run directory with the new versions. Specifying a different run directory can be useful when you wish to compare output from different versions of the same model. The directory name must be followed by a slash ("/") for UNIX systems, a back-slash ("\") for NT systems (see *Solving the Model*).

This field also determines which directory will be accessed when using *Get Results*, *View Messages*, *View Errors/Warnings*.

Analysis Controls and Include File

You can directly access *Solver Control*, *Radiation Control*, *Initial Temperature and Restart*, *Ambient Conditions* and *Solution Data* from the TMG Study Setup form to quickly specify the analysis controls of your new FE Study.

Use *Include File* to specify that additional data is to be included in the analysis. You can use an *Include File* to insert data directly into the TMG input file when the model is solved. The file must be in INPF format (see the *TMG Reference Manual*), unless you are including a User Subroutine only, in which case you do not need the -1 delimiters. Enter the name of the file containing the data.

Copyright (c) 2007 UGS Corp. All Rights Reserved.