Contents | **Find**

TMG Radiation Tools

TMG radiation has a wide range of functionality to accomplish fast and accurate simulation for different applications. In order to streamline the modeling process, some functionality is broken out into separate tools that may be applicable to a variety of applications. These may be broadly divided into two areas: controls and entities. They are summarized below and discussed in detail elsewhere.

Radiation Controls

Radiation Controls set global parameters for your radiation simulation. For most models, you will not have to set any of these parameters: the default setup will provide good results. However, for particular modeling situations you may be able to improve accuracy or reduce solution time by specifying more appropriate settings. See *Setting Radiation Controls* for details.

Additional Radiation Entities

Reverse Sides

By default, elements that radiate form both side have only one temperature. TMG can calculate a temperature for each side if a *Reverse Side* entity is defined on the element. You can also use *Reverse Side* entity to overwrite the reverse side material properties of specific elements. See *Front and Reverse Element Sides* for details.

Space Enclosures

A Space Enclosure is a TMG entity which during the analysis constructs a huge cube, tetrahedron, or cylinder around the model. Use this enclosure to model radiation to an ambient environment with constant or time varying temperatures. See *Defining a Space Enclosure* for details.

Selective Radiation or Shadowing

Use the *Element Radiation Switches* to deactivate selected elements or geometry groups for radiation calculations. The element will remain part of the thermal model. See *Selective Radiation or Shadowing* for details.

Articulating Structures

The *Articulation* entity models the articulation of selected elements in the model. This feature provides simulation of the transient radiative heat exchange induced by the motion of mechanized assemblies such as solar arrays, tracking antennas, or robotic systems. Time-varying radiative conductances and heat loads (including orbital heating) are computed based on the articulation sequence. You can visualize and animate the motion when you post-process the solution results. See *Modeling Articulation* for details.