I-DEAS Online Help

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Using Group Reporting

A Group Reporting entity generates summarized results data on a specified group (or pair of groups) in spreadsheet format. During a solve, TMG creates a file GroupReport. xls (GroupReport.dat on UNIX) in the current Run Directory. The file contains the requested results data, arranged by Group Reporting entity, data option, and analysis time.

You can create one Group Reporting entity or many. Group Reporting entities can be copied, deleted and modified. Any number of Group Reporting entities can be included in a given TMG Study.

The following data options are available for individual element sets:

- *Summary* reports temperatures on the selected elements (average, maximum, minimum and T_{max} - T_{min}), absorbed heat from a variety of sources, and total heat absorbed.

- *Heat Loads* reports total loads on selected elements, as well as heat loads broken down in terms of solar, diffuse solar, diffuse IR and other types. The percentage of the total heat load on the model is also reported for the selected elements.

- *Heat Fluxes* reports total flux on selected elements, as well as heat flux broken down in terms of solar, diffuse solar, diffuse IR and other types. The report is analogous to the Heat Loads report with values divided by area.

- *Physical Properties* describes the selected elements in terms of total area, volume, mass and capacitance, as well as average density, thickness (shell elements), emissivity, absorptivity, conductivity, and specific heat.

- *Orbital/Source View Factors* reports Planet, Sun and Albedo view factors for the selected elements.

- *Phase Change Quality* reports Average Quality, Maximum Quality and Minimum Quality for the selected elements.

- *Duct Flow* reports Average Velocity, Average Pressure, Maximum Pressure, Minimum Pressure, Average Reynolds and Average Mass Flow for selected element sets.

The following data options are available for pairs of element sets:

- *Heat Flow* processes and reports heat flowing from group 1 (*i*) to group 2 (*j*). The temperature of the two sets of elements are reported, followed by heat flows broken down by Conduction, Radiation, Convection and Thermal Couplings, as well as the total heat flow.

- *View Factors/RadK's* post processes and reports view factors from group 1 (*i*) to group 2 (*j*). Emissivity values and area for both groups is reported, as well as black body and gray body view factors. Script F_{ij} is the GBVF $\times$ ε, and Radk$_{ij}$ is $\sigma \times$ ScriptF$_{ij}$.

- *Temperature Difference* compares temperatures between group 1 and group 2 reports maximum and minumum and average temperature offsets, as well as differences between all these values. This makes it easy to find the maximum deviation from average, or the maximum differential between the hottest and coldest temperatures.

Elements for Group Reporting

The following element types are supported:

- 2-D thin shell elements
- Beam elements with cross section defined
- Lumped mass elements
- Free faces of 3-D solid elements
- Axisymmetric shell elements
- Free edges of axisymmetric solid elements

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