



HELIOS USER'S GUIDE

Revisions for HELIOS version 7.5.0

- Ability to specify tabulated thermal conductivities and electrical resistivities is enabled for all users.
- Data for the *Tabular Zoning* model (set up in *Preview Zoning* widget) is now stored in the workspace file with more significant figures.
- Added cross-sections for TT fusion reaction. The model is based on tabulated data and a fitting formulas 12-14 from Bosch and Hale, Nuclear Fusion, V. 32, No 4 (1992). Note that the alpha particles and neutrons created in this reaction are NOT added to the particle pool.
- Old PROPACEOS files (format ID < 4, EOSOPA-based formats) are no longer supported in Helios simulations and for visualizing with EOS Opacity Viewer.
- Bug fixes:
 - Fixed crash that occurred when attempting to run simulation in which *Tabulated Group Boundaries* is selected in *Radiation Transport* widget, but no group boundaries are entered into the table.
 - Checks for values of zero in the *Radiation Source* tables are no longer performed.
 - Radiation flux multiplier is no longer ignored when CR calculation starts.
 - If the radiation BC is specified as a time- and photon-energy-dependent table, it is also accounted for when CR model starts.
 - Option to use “Laser as radiation source” now works properly when CR model starts.
- *HydroPLOT*:
 - In addition to existing option to plot the plasma pressure (electron+ion), it is now possible to plot the electron and the radiation pressure. Note that the radiation pressure plots are only available for the simulation results performed with Helios 7.5.0 or newer.
 - *HydroPLOT* no longer crashes when requested to plot velocities (node-centered quantity) vs. zone mass.
 - Eliminated potential inconsistencies when plotting photon-energy-dependent quantities in CR simulations where the photon energy grid can change between the time steps.

- *EOS and Opacity Viewer*
 - The viewer now supports the latest PROPACEOS format (format ID 9) designed for the tables with more than two independent variables.
 - The viewer has redesigned graphical user interface with new features and plot options.

