



### Revisions for PrOpacEOS 10.1.0

- Additional option for continuum lowering models (*Atomic Processes* -> *Advanced* -> *Transitions*) and for dense plasma shifts. FAC Table option and dense plasma shifts require \*.es atomic data files. The data will be distributed to all PROPACEOS users. A systematic calculation of plasma screening effects on atomic structure for all ions of  $Z=1$  to 36 has been carried out using the Flexible Atomic Code. The screening potential is obtained within the framework of Stewart-Pyatt model. The shifts in ionization potentials of bound electron radial orbitals up to principal quantum number 10 and all orbital angular momenta are tabulated on a grid of electron densities and temperatures. Due to the slight differences in the screening effects on different radial orbitals, this tabulated database enables to not only determine the continuum lowering of the ground states, but also transition energy shifts within the same ionization stages. The database of ionization potential shifts is a significant improvement over analytical formulas often employed for ionization potential depression.

Transition Parameters

Bound-Bound Atomic Data Modifiers

Set Stark broadening modifiers... Set transition modifiers...

Include dense plasma shifts

Inner-Shell Transitions

Add K-alpha/K-beta transitions for ions with # of bound electrons = 11 up to 100

Continuum Lowering

Model: FAC-Table IP lowering multiplier: 1

None  
Hummer-Mihalas  
Stewart-Pyatt  
Ecker-Kroll  
FAC-Table

Multiply  
 Treat  
state transitions in detail

- Default output file format is changed to 8 as it is the most common format.
- Added option to generate PROPACEOS data formatted specifically for FLASH code.

Set Run Parameters

Run Directory: /home/user Browse...

Run Name: my\_run

Output file format: Default format (8)  
Format for FLASH  
Format 9  
Default format (8)

Help OK Cancel