PrismSPECT user's guide

Revisions for PrismSPECT 9.5.0

- Improved continuum lowering model where the electron density and the amount of IPD are determined self consistently with a combination of iteration and bisection techniques was implemented. This model can significantly affect ionization balance, especially for low temperature plasma. More details on the model can be found in the appendix of the main documentation.
- Improved consistency in modeling IPD for mixtures of elements.
- New block matrix population solver for large atomic systems has been implemented. For atomic models containing over 20000 levels, the new solver is expected to use significantly less memory, and be faster by at least a factor of few. More details on the model can be found in the appendix of the main documentation.
- Improved models for ion contribution for Stark broadening. Previously, the effect of ion contribution could have been significantly overestimated at lower densities.
- Added support for new distribution of FAC atomic data (v. 1.5.0U).
- Updates were made to better support graphics on high-resolution monitors.
- Options were added to Preferences to control matrix solver and iterative continuum lowering.

Prefer	rences					
Data	Plots	Database	Default Directories	Simulations		
Mult	i-threadir	ng				
🖸 P	erform n	nulti-threaded s	imulations			
	🗹 Limi	it max number	of threads to: 8			
Advanced Radiation Physics Parameters						
Separate photon energy grids for bound-bound and bound-free transitions						
 	Jse quasi-	- contiguous lin	, eshape model			
Solve	er Methoo	d for Steady-Sta	te Populations			
0) seudo-ti	me-dependent	May num iterat	tions: 150		
	Secto-ti	me-dependent	Max. Hum. iterat	ions, 100		
	steady-st	ate iterative	Max. num. iterat	ions: 500		
<u> </u>	Jse block	matrix solver				
🗹 Use	e iterative	continuum lov	vering			
Help				<u>O</u> K <u>C</u> ar	ncel	

• Added option to re-generate transition labels in the *Transition String Properties* dialog. The changes will be applied to all selected transitions.

Transition String Properties							
Include ion name	Include term symbol						
Configuration:	All subshells \sim						
Vertical position (0 - 1.0):	0.7						
*Settings will be applied to newly generated labels.							
For transitions selected in table:							
Regenerate labels Reset positions							
Help	OK Cancel						

Bug fixes:
Improved placement of transition gridlines in the spectral viewer.