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FAC Atomic Data in SPECT3D[1] TIMOTHY WALTON, JAMES SEBALD, IGOR GOLOVKIN, JOSEPH MACFARLANE, Prism Computational Sciences — SPECT3D is a collisional-radiative spectral analysis package used to compute detailed emission, absorption and XRTS spectra, as well as filtered images, for multiple 1D, 2D, and 3D geometries. SPECT3D computes LTE and non-LTE populations using detailed atomic physics models. Here we introduce the initial implementation of SPECT3D support for atomic data produced by the Flexible Atomic Code (FAC) in addition to the standard ATBASE atomic data. Users can now use the Prism application Atomic Model Builder to read binary FAC output and produce atomic model files which can be read by SPECT3D and other Prism plasma codes. We demonstrate good agreement with the well-validated ATBASE data for a Local Thermodynamic Equilibrium (LTE) spectral calculation from an aluminum plasma using the single-cell code PrismSPECT.

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