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**Parallel Implementation of X-Ray Scattering Models in SPECT3D.** JAMES SEBALD, IGOR GOLOVKIN, JOSEPH MACFARLANE, Prism Computational Sciences, PRISM COMPUTATIONAL SCIENCES TEAM — Spectrally resolved x-ray scattering has become a very effective method for diagnosing electron temperatures, densities, and average ionization in warm dense matter. The x-ray scattering modeling has been added to the multi-dimensional collisional-radiative spectral and imaging package SPECT3D. The ability to simulate the emissivity and attenuation of scattered photons within a multi-dimensional multi-volume-element plasma with non-uniform temperature and density distributions adds a major capability to existing spectroscopic models. We present parallel implementation of the scattering algorithms developed to support simulations with large-scale hydro grids. Various optimization options will also be discussed.

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