Solutions of Boltzmann Equation for Simulation of Particle Distributions in Plasmas JASON HAMMOND, Air Force Research Laboratory —
We are investigating the time evolution of the electron and excited state distribution functions. To accomplish this, we solve the time dependent Boltzmann equation to overcome some typical limitations of modeling high pressure plasmas using Monte Carlo methods. Here we focus on the numerical approach to solving the time dependent Boltzmann equation using a multi-term approximation of the electron distribution function. We also compare Boltzmann results for electron distribution evolution against multiple plasma simulations using experimental collisional cross-section data.

Wilkin Tang
Air Force Research Laboratory

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