

Using the Green's Function Multiple Scattering Method to Model Warm and Hot Dense Matter

Charles Starrett¹

Los Alamos National Laboratory

The Green's function multiple scattering method is a well developed method for solid state physics that has recently found new use in the field of dense plasmas. We discuss the challenges in that field and why the Green's function method is attractive, in particular, the favorable scaling of the method with temperature. We also show equation of state results to very high temperatures ($1000 \text{ eV} \approx 10^7 \text{ K}$) from a recent fully relativistic implementation.

References

1. C. E. Starrett, "High Temperature Electronic Structure with Korringa-Kohn-Rostoker Green's Function Method", Phys. Rev. E **97**, 053205 (2018).

¹Email: starrett@lanl.gov