Abstract Submitted
for the DAMOP16 Meeting of
The American Physical Society

Electron effective thermalization via non-collisional mechanisms in ultracold neutral plasmas[1] CRAIG WITTE, JACOB ROBERTS, Colorado State University — Many ultracold neutral plasmas (UCPs) are formed with non-uniform electron and ion densities. We present the results of a numerical simulation that compares the velocity distribution evolution after UCP formation between uniform and non-uniform density UCPs. We find that the non-uniform density distribution couples electron collective motions in such a way as to alter the effective thermalization of the electrons in the UCP. This is relevant for understanding the establishment of equilibrium in the electron component of UCPs in experimentally relevant conditions.

[1]This work supported by the AFOSR

Jacob Roberts
Colorado State University

Date submitted: 29 Jan 2016 Electronic form version 1.4