

Abstract Submitted  
for the DAMOP14 Meeting of  
The American Physical Society

**Optical response of a dense gas of moving atoms** YI LI, SUNGMI YOO, JUHA JAVANAINEN, University of Connecticut — At high density, dipole-dipole interactions between the atoms may have a major impact on light propagation in a dense gas. We have developed a classical-electrodynamics simulation to study the cooperative response of a near-resonant gas to light. We take into account the motion of the radiators using classical trajectories, including collisions with the walls of the container and atom-atom collisions, and describe the transition from homogeneously broadening to inhomogeneously broadened phenomenology.

Yi Li  
University of Connecticut

Date submitted: 30 Jan 2014

Electronic form version 1.4