

Abstract Submitted
for the DAMOP20 Meeting of
The American Physical Society

Cold dense ion clouds in a cryogenic neutral plasma NISHANT BHATT, KOSUKE KATO, AMAR VUTHA, University of Toronto — We describe the production of dense clouds of a variety of cold atomic ions, cooled by collisions with cryogenic helium buffer gas. The ion clouds exist within a neutral plasma with a Coulomb coupling parameter $\Gamma_C \approx 0.5$. High optical depths can be achieved for the ion clouds, enabling convenient laser absorption measurements. We also discuss the first precise measurements of isotope shifts of Nd^+ ions, and a test of King plot linearity, performed using this system.

Amar Vutha
Univ of Toronto

Date submitted: 31 Jan 2020

Electronic form version 1.4