

Abstract Submitted
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Velocity Map Imaging of Trapped Cold Molecular Ions¹ ELIZABETH WEST, ERIC HUDSON, UCLA — Velocity map imaging (VMI) is a standard technique of gas-phase chemistry enabling the detailed investigation of molecular structure and reaction dynamics with an energy resolution that can exceed $h \times 1$ GHz. In typical VMI, the species of interest are initially neutral. We describe progress towards realizing a new type of VMI technology in which the species of interest are trapped, cold atomic and molecular cations. This extension of the VMI technique could be used to explore new realms of ion and plasma chemistry and bring to bear the many established advantages of ion traps, including long interaction times, single-particle addressability, and the ability to prepare pure-state ultracold reactants. We present preliminary data on VMI of photodissociated cold BaCl^+ from a linear quadrupole ion trap.

¹Army Research Office, National Science Foundation

Elizabeth West
University of California, Los Angeles

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