

Abstract Submitted
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Cold chemistry with trapped ions C. D. AHL, J.M. HANSON, M. OKANE, B.R. SLIMMER, M. YEATES, S.J. BROMLEY, J.P. MARLER, Clemson University — Experimental study of chemical reactions at low temperatures gives insight into the rotationally and vibrationally resolved properties of molecules with an unprecedented precision. Specifically such experiments offer new clues to the dynamics of charge exchange and molecule formation and dissociation at low interaction temperatures. Trapped ions represent a unique system for such experiments down to the mK energy scale. Large trap depths allow for the charged products of such collisions to remain trapped and the products studied in detail. Taking advantage of the ability to easily co-trap laser coolable atomic ions with various atomic or molecular ions of interest opens up a large variety of possible interactions ranging from fundamental physics to astrochemical or biological systems.

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