

Abstract Submitted
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Characteristics of a strongly coupled ultracold neutral Ca^{2+} plasma¹ MARY LYON, ABIGAIL WILKINS, SCOTT BERGESON, Brigham Young University — Ultracold neutral plasmas are formed by ionizing laser-cooled atoms at threshold. They are strongly coupled Coulomb systems. Disorder-induced heating limits the strong coupling parameter to values of $\Gamma \leq 4$. A recent simulation predicted that higher values of the strong coupling parameter in ultracold neutral plasmas can be realized if the plasma ions are excited to higher ionization states. The maximum value of Γ depends on the time at which the second ionization pulse arrives. We have built an experiment to test this prediction in laser-cooled calcium. This talk will describe the experiment and recent results.

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