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Achieving higher Gamma plasmas using higher ionization states[1]
NATHAN ROCK, ABIGAIL WILKINS, MARY LYON, SCOTT BERGESON, Brigham Young University — 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 describe an experiment in laser-cooled calcium. Neutral atoms in a MOT are ionized using laser pulses at 423 and 390 nm. These ions are ionized again to Ca^{2+} using laser pulses at 397, 210, and 434 nm. In this presentation we will describe the current status of the experiment.

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