

Abstract Submitted  
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**Laser-cooling ions in an ultracold neutral plasma**<sup>1</sup> DANIEL CRUNKLETON, KYLE SCHNEIDER, KADE BISHOP, Brigham Young University, SCOTT BERGESON, Bri — We present our progress in laser-cooling ions in an ultracold neutral plasma. These plasmas are created by photo-ionizing laser-cooled Ca atoms in a MOT. We laser-cool using the strong  $4s \rightarrow 4p$  transition at 397 nm. Optical pumping into the metastable dark state is prevented using two repumper lasers at 850 and 854 nm. We avoid coherences in the repumping scheme by rapidly and alternately modulating the intensity of the two repumping lasers. We present our calculations and preliminary data on cooling.

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