Abstract Submitted
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Towards a 3-D Magneto-Optical Trap for Molecules[1] ALEJANDRA COLLOPY, MATTHEW HUMMON, MARK YEO, BENJAMIN STUHL[2], JILA, University of Colorado, BOERGE HEMMERLING, GARRETT DRAYNA, EUNMI CHAE, AAKASH RAVI, HSIN-I LU, JOHN DOYLE, Harvard University, JUN YE, JILA, University of Colorado — As the magneto-optical trap revolutionized atomic physics, we anticipate the molecular counterpart to open doors to unexplored molecular physics, including ultra-cold chemistry. While molecules possess more complex structure than atoms, quasi-cycling cooling transitions are still attainable in a variety of species, including the polar molecule YO. In order to remix dark states, we RF modulate the polarization of the light in our trap. In order to maintain a restoring force, we modulate the orientation of our magnetic fields in phase with the light using LC resonant in-vacuum magnetic coils. We demonstrate magneto-optical trapping in two dimensions for YO, and present progress towards a three dimensional implementation of a MOT loaded from a two-stage buffer gas cell source.

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