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Magneto-Optical Trap Thermometry Using a Triggered Electro-Optic Modulator S.A. ENTNER, University of Connecticut; Wentworth Institute of Technology, J. M. KWOLEK, University of Connecticut, D.S. GOODMAN, University of Connecticut; Wentworth Institute of Technology, W.W. SMITH, University of Connecticut — Magneto-optical trapping and cooling is fundamental to the study of ultra-cold gases, often serving as the workhorse for many cutting-edge, cold-atomic-physics applications. The magneto-optical trap creates a cold ($\sim$ 100 uK) localized cloud of neutral atoms, therefore, characterizing the temperature of the cloud is an essential task. Our poster will describe the implementation of a modified release-and-recapture technique that measures a trapped sodium clouds temperature via spatiotemporal fluorescence imaging (STFI). The technique uses a triggered electro-optic modulator and CCD camera to release, recapture, and image the ballistic expansion of the atom-cloud. Ultimately, tracking the clouds expansion allows us to determine the temperature of the trapped atom-cloud.

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