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Frequency Chirped Pulses at Large Detuning with an Injection-Locked Diode Laser for Atomic Physics Experiments BRIAN KAUFMAN, ANTHONY LIMANI, KEVIN TENG, MARTIN DISLA, JOHN DELLATTO, TRACY PALTOO, MATTHEW WRIGHT, Adelphi University, WRIGHT TEAM — We have built a laser system that allows us to generate a frequency-chirped laser pulse at rapid modulation speeds ($\sim$ 100 MHz) with a large frequency offset. Laser light from an external cavity diode laser is passed through a lithium niobate electro-optical phase modulator (EOM). We drive the EOM with a $\sim$ 6 GHz signal whose frequency is itself modulated at speeds on the order of 100 MHz. This light is passed into an injection-locked laser which is used to filter out all of the light except the frequency-chirped $\pm$ 1 order by more than 30 dB. Using an RF switch, we are able to turn the injection locking on and off on a time scale faster than 20 ns. We are currently exploring using this system to adiabatically transfer atoms into an excited state.

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