

Abstract Submitted
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Injection locking of 767 nm laser diodes with RF modulation

CHARLES CONOVER, Colby College — We have explored RF modulation of 767 nm injection-locked diode lasers as a way to generate the two colors, separated by approximately 462 MHz, necessary for magneto-optical trapping of K-39. We discuss the differences in behavior between standard Fabry-Perot lasers and antireflection-coated diodes, and the behavior of the lasers with changes in temperature, DC bias current, RF power, injected laser intensity, and modulation frequency. Using modest (<10 mW) RF power, we are able to stably generate optical power in the first-order sidebands of greater than 25% of the carrier power, with significant asymmetry between the upper and lower sidebands affected by appropriate choice of parameters.

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