

Abstract Submitted
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Using Frequency Noise Feedback to Improve Stability in Extended Cavity Diode Lasers MCKINLEY PUGH, DALLIN DURFEE, Brigham Young University — We are developing a feedback system to stabilize extended cavity diode lasers using frequency noise. In other literature, amplitude noise has been used to predict and prevent mode hops. Weve found, however, that amplitude noise only correlates to an impending mode hop when the laser is locked to a frequency reference. We have found evidence that the amplitude noise is generated from more fundamental frequency noise by the lock feedback. We therefore propose a way to use frequency noise directly to generate a signal to predict and prevent mode hops.

McKinley Pugh
Brigham Young University

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