

Abstract Submitted
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Asymmetric laser sideband generation with a tapered semiconductor amplifier¹ MICHAEL YANAKAS, MICHAEL LIM, Department of Physics and Astronomy, Rowan University — We have constructed a free-space, frequency-shifted feedback amplifier using a tapered semiconductor gain element. The general layout of the system is similar to that described in Littler, et al., *Opt. Comm.* **88**, 523 (1992). Traveling-wave feedback is demonstrated with the $m = -1$ order of several different acousto-optic modulators driven at variable frequency. Asymmetric sideband production is observed in the rf spectrum of a fast photodiode and in the transmission of a scanning Fabry-Perot interferometer. The number of asymmetric modes is controlled with the AOM rf drive power and the seed laser optical power.

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