

Resonant coupling of a semiconductor laser to a Fabry-Perot resonator

V. Z. Tronciu, M. Radziunas, H. -J. Wunsche and M. Wolfrum

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Abstract

This paper investigates resonant coupling of a semiconductor laser to a Fabry-Perot (FP) resonator. This study considers a laser emission which is transformed by a lossless FP into the feedback. The impact of this feedback on two different laser models is investigated. Furthermore, a bifurcation analysis of both models is also performed. Results of this study reveal important information on how to design all-optical chaos and coherence control.