## عنوان مقاله:

Relative intensity noise in optical injection locked semiconductor lasers

## محل انتشار:

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## خلاصه مقاله:

An injection-locked laser system contains two semiconductor lasers. The light from a masterlaser is injected into the slave laser oscillating above threshold, and the injected radiationcompetes with the spontaneous emission of the slave laser being amplified. For analog fiberoptical communication system, this technique is an effective method to increase the laserrelaxation oscillation frequency, improve laser bandwidth, reduce nonlinear distortions,suppress the frequency chirp and further reduce the laser system noise [1]. The relativeintensity noise (RIN), intrinsic noise inherited in the device due to spontaneous emissionnoise, is of major importance for optical communication systems, whereas low RIN is neededto achieve high signal-to-noise ratio. Intensity noise in free-running lasers is caused byrandom carrier recombination and generation events. Several theoretical simulations of noisecharacteristics have been reported [2,3]. In OIL lasers, the intensity and phase fluctuations ofthe injected light also contribute to the system's noise and cannot be ignored.

## کلمات کلیدی: