

## **Tailoring the dynamics of diode lasers by passive dispersive reflectors**

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### **Abstract**

Possibilities are investigated for influencing the dynamical behavior of diode lasers by means of integrated passive dispersive reflectors (PDR). The specific configurations comprise DFB lasers complemented with different PDR, which consist of a phase tuning section and a passive grating section. Among others, the potential of these configurations will be investigated for generation and tuning the properties of self pulsations (SP), as e.g. the frequency and the modulation depth. Our considerations are based on the Traveling Wave Equations (TWE) coupled to carrier rate Equations. Together with numerical time domain computations of this system, a single mode approximation is applied and checked as possible tool for tailoring the dynamic effects.