Regimes of self-pulsing in photonic crystal Fano lasers

Laser self-pulsing was a property exclusive to macroscopic laser systems until recently, where self-pulsing laser operation was demonstrated experimentally and theoretically in a microscopic photonic crystal Fano laser [1]. We now provide a detailed theoretical analysis of the self-pulsing mechanism and laser characteristics with numerical simulations to demonstrate the parameter dependence of the self-pulsing regime and its limitations, indicating how the design may be optimised for applications in e.g. integrated on-chip communication systems.

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