

Excitability of Lasers

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A permanent challenge in communication systems is to increase the data rate. Recent experiments indicate that semiconductor lasers with dispersive reflector are possible candidates to replace traditional electronic devices. In the process of signal reconstruction special units are needed to distinguish between noise and signals.

We construct a simple model (system of ordinary differential equations representing balance equations) for a special DFB-laser and investigate the occurrence of some threshold behavior which is basic for excitability. The paper is joint work with H.-J. WÜNSCHE, V. TRONCIU, J. SIEBER and M. RADZIUNAS.