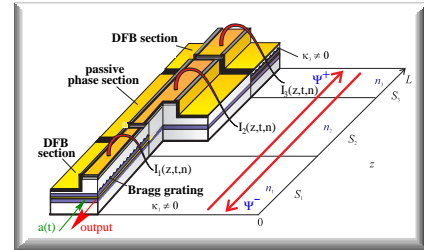


LDSL-tool

Simulation and Analysis of Dynamics in Semiconductor Lasers

Product

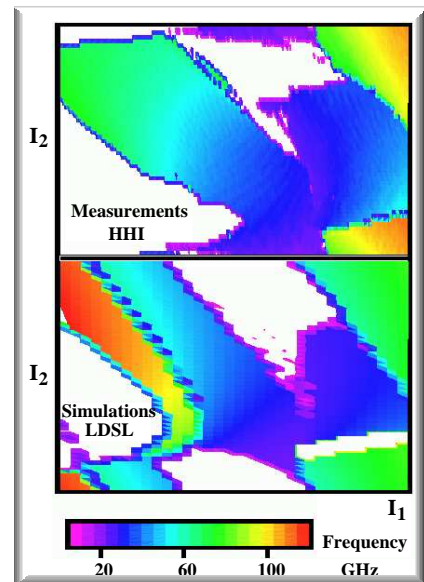
LDSL-tool (Longitudinal Dynamics in Multisection Semiconductor Lasers) is a software for simulation and analysis of Longitudinal Dynamics in multisection Semiconductor Lasers. It is based on Traveling Wave (PDE) equations describing the propagation of optical fields along the longitudinal direction of the laser which are nonlinearly coupled to the ordinary differential equations for carrier densities and polarization functions.



Key Benefits

We provide a highly efficient analysis and simulation tool for nonlinear dynamics in different types of multisection lasers and coupled laser structures which allows for tailoring of dynamics for different applications in optical data transmission systems:

- Pulsating multisection lasers for optical clock recovery
- Frequency locking by optical/electrical modulated signal
- Pulse generation in multisection or ring mode-locked lasers
- Multisection lasers with direct signal modulations
- Wavelength conversion in ring lasers
- Chaos synchronization in master-slave laser systems
- Various dynamical regimes of coupled laser systems
- etc.



Key Features

LDSL-tool allows the simulation for a hierarchy of PDE models. The implemented data postprocessing routines supply an automatic detection and validation of dynamical regimes. For certain classes of models LDSL-tool analyses the dynamics of longitudinal modes and builds reduced ODE models based on a finite number of modes. After showing good agreement with the basic Traveling Wave model, these models can be further analyzed with advanced mathematical tools for numerical bifurcation analysis.

Our Service

- Individual consulting
- Joint problem definition and search for solutions
- Model adaptation and implementation conforming to customers requirements
- Rapid and reliable implementation and support

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