Degradation of Side-Mode Suppression Ratio in a DFB Laser Integrated With a Semiconductor Optical Amplifier - DTU Orbit (31/12/2018)

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The degradation of the side-mode suppression ratio (SMSR) in a monolithically integrated distributed feedback laser and semiconductor optical amplifier (SOA) cavity is investigated. An expression is derived that gives the degradation of the SMSR in the case of a perfectly antireflection-coated SOA facet. The amplified spontaneous emission (ASE) backcoupling can have dramatic effects and degrade the SMSR of single-mode devices to unacceptable levels.

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