

Seminar

Modeling Bent Waveguide Characteristics

For many optical integrated components, bent waveguides are the key building blocks. There are various schemes on how to model characteristics of a bent waveguide.

The task of the student is to compare and describe the scheme of at least two approaches.

[1] Andrea Melloni et al., "[Determination of Bend Mode Characteristics in Dielectric Waveguides](#)"

[2] Wayne W. Lui et al., "[Full-Vectorial Wave Propagation in Semiconductor Optical Bending Waveguides and Equivalent Straight Waveguide Approximations](#)"

[3] Jiangtao Huangfu et al., "[Application of Coordinate Transformation in Bent Waveguides](#)"

[4] Mordehai Heiblum et al., "[Analysis of Curved Optical Waveguides by Conformal Transformation](#)"

[5] Sangin Kim et al., "[Vector Analysis of Optical Dielectric Waveguide Bends Using Finite-Difference Method](#)"

Prerequisites

- good understanding of Maxwell's equations
- lecture: Optical Communication Systems

Advisors

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