

MODAL ANALYSIS IN NON RECIPROCAL WAVEGUIDE BASED ON THE FINITE ELEMENT METHOD

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The study of the electromagnetic fields in photonic components, like optical waveguides, is the key starting point to design novel and advanced optical devices before their manufacturing. For this reason, the development and the optimization of accurate mathematical models is a very important issue.

In this talk, we present an accurate modal analysis for non-reciprocal waveguide using the finite element method. Such a waveguide can be used to perform optical isolator [1], where the forward and backward waves are characterized by a different propagation constants. While the most used method for computing the shift between the forward and the backward propagation constants is the perturbative method [2], here we present a more rigorous approach which allows to directly compute the electromagnetic modes and the corresponding propagation constant [3].

References

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