

Rigorously Modeling Short Bent, Graded-Index Dielectric Slab Waveguides

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Circularly short bent, graded-index dielectric slab waveguides are mathematically modeled using both a direct integration method and a source-type integral equation method. The former method is easy to implement, requiring only small amounts of computer time. The latter method has the potential to be extended to a rigorous model for bent channel waveguides. Both homogeneous and inhomogeneous slab waveguide layers are considered. The mathematical models are validated through comparison of the numerical results with results obtained by the analytical resonance conditions. Numerous numerical examples are given.

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