Abstracts

Convergence of Numerical Solutions of Iris-Type Discontinuity Problems

The convergence of numerical solutions of several iris-type discontinuity problems in waveguides and periodic structures is investigated. It is demonstrated that the numerical solution of a set of equations obtained from a mode-matching procedure (which corresponds to an integral equation formulation of the problem generally known as the moment method) may converge to an incorrect value if an improper ratio is chosen between the number of modal terms in the aperture and the number of terms retained in the kernel of the integral equation. Guidelines for efficient numerical computations are indicated.

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