Abstracts

An Application of the Moment Method to Waveguide Scattering Problems

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A moment method is suggested to solve scattering problems in waveguides. It takes advantage of the localized nature of the evanescent waves to assure the convergence of the solutions. The method chooses the point-matching approach with pulse basis functions so that it may be versatile and can be applied to discontinuities of an arbitrary shape. To illustrate this method, examples are given for open-ended parallel-plane waveguides, both flanged and unflanged, and for waveguides with obstacles of various shapes. Comparisons are made with solutions by other approaches and, whenever possible, with exact solutions. The agreements are good.

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