Abstracts

Analysis of the Junction Between Smooth and Corrugated Cylindrical Waveguides in Mode Converters (Short Papers)

L.C. da Silva and M.G.C. Branco. "Analysis of the Junction Between Smooth and Corrugated Cylindrical Waveguides in Mode Converters (Short Papers)." 1990 Transactions on Microwave Theory and Techniques 38.6 (Jun. 1990 [T-MTT]): 800-802.

A method for the determination of the scattering matrix of the junction between smooth and corrugated cylindrical waveguides is developed based on the expansion of the modal fields for the corrugated waveguide into eigenfunctions of the transmission matrix of a waveguide unit cell. This method, used in conjunction with usual techniques for evaluation of the scattering matrix of mode converters, is here shown to improve the precision of results obtained by rendering uniform the accuracy of the models applied in the calculations. Also, the analysis is now valid for any size of corrugation depth, and the frequency band of applicability is enlarged accordingly.

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