Abstracts

A new numerical method for synthesis of arbitrarily terminated lossless nonuniform transmission lines

G. Xiao, K. Yashiro and S. Ohkawa. "A new numerical method for synthesis of arbitrarily terminated lossless nonuniform transmission lines." 2001 Transactions on Microwave Theory and Techniques 49.2 (Feb. 2001 [T-MTT]): 369-376.

In this paper, the synthesis of a nonuniform transmission line is treated by solving an inverse classical Sturm-Liouville problem, in which the boundary conditions are described by S-parameters. The related inverse problem is readily solvable if the terminated impedances and S-parameters satisfy some required conditions. This method can be used to design transmission-line filters and impedance transducers for almost arbitrarily provided source and load impedances.

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