Abstracts

On the Application of the Wiener-Hopf Technique to Electrostatic Field Problems in Interdigital Transducers

A.F. Molisch, A.R. Baghai-Wadji and C.O. Schiebl. "On the Application of the Wiener-Hopf Technique to Electrostatic Field Problems in Interdigital Transducers." 1993 Transactions on Microwave Theory and Techniques 41.2 (Feb. 1993 [T-MTT]): 318-324.

Using the Wiener-Hopf-technique, we compute the electrostatic field distribution of interdigital transducers at the plane interface of two dielectric media sandwiched between two grounded metallic plates and neighbored by two grounded semi-infinite plates at the interface. To this end, we compute, for the first time, the associated Green's function, which already satisfies the boundary conditions at all the grounded plates. Consecutively, the Green's function is used to derive the elements of the charge-potential-interrelation matrix for various basis- and testing functions for a method-of-moments application. Examples demonstrate that the new method has considerable advantages with respect to accuracy and computer-memory requirements.

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