Abstracts

Dyadic Green's function of multilayer cylindrical closed and sector-structures for waveguide, microstrip-antenna, and network analysis

M. Thiel and A. Dreher. "Dyadic Green's function of multilayer cylindrical closed and sector-structures for waveguide, microstrip-antenna, and network analysis." 2002 Transactions on Microwave Theory and Techniques 50.11 (Nov. 2002 [T-MTT] (Mini-Special Issue on the 2002 IEEE Radio Frequency Integrated Circuit (RFIC) Symposium)): 2576-2579.

A clear and systematic method to derive the spectral- and space-domain dyadic Green's function of arbitrary cylindrical multilayer and multiconductor structures is proposed. The derivation is either done for a circumferentially closed or a cylindrical sector structure, which is bounded by electric or magnetic walls in an azimuthal direction. The solution for the dyadic Green's function in the spectral domain is obtained via an equivalent circuit. Relations between the spectral and space domains for the dyadic Green's functions are derived using eigensolution expansions. Finally, the dyadic Green's function is applied to the problem of finding the propagation constants of the two-layer dielectric rod.

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