Abstracts

A Closed-Form Spatial Green's Function for the Thick Microstrip Substrate (Short Papers)

Y.L. Chow, J.J. Yang, D.G. Fang and G.E. Howard. "A Closed-Form Spatial Green's Function for the Thick Microstrip Substrate (Short Papers)." 1991 Transactions on Microwave Theory and Techniques 39.3 (Mar. 1991 [T-MTT]): 588-592.

The spatial Green's function for the open microstrip structure, especially with a thick substrate, is generally represented by time-consuming Sommerfeld integrals. In this paper, through the Sommerfeld identity, a closed-form spatial Green's function of a few terms is found from the quasi-dynamic images, the complex images, and the surface waves. With the numerical integration of the Sommerfeld integrals thus avoided, this closed-form Green's function is computationally very efficient. Numerical examples show that the closed-form Green's function gives less than 1% error for all substrates and source-to field distances.

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