# Abstracts

## Direct Analytical Solution for the Electric Field Distribution at the Conductor Surfaces of Coplanar Waveguides

*M. Gillick, I.D. Robertson and J.S. Joshi. "Direct Analytical Solution for the Electric Field Distribution at the Conductor Surfaces of Coplanar Waveguides." 1993 Transactions on Microwave Theory and Techniques 41.1 (Jan. 1993 [T-MTT]): 129-135.*

A new analytical method of evaluating the electric field distribution across the conductor surfaces of coplanar waveguides (CPW's) is presented. Here, a series of conformal mappings are employed to transform the CPW's geometry and field distribution into a uniform image domain, to facilitate a direct field solution. The cumulative electric flux distribution across each conductor surface with the dielectric substrate is studied, and its effects on coupling and propagation modes are described. Direct solutions for the quasistatic normal electric field components are presented together with their graphical representations. Numerical computations show how the total electric flux terminating on the CPW's conductor surfaces varies in terms of the CPW's geometry and substrate parameters.

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