Abstracts

Electromagnetic Scattering and Radiation from Finite Microstrip Structures

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In this paper, two techniques are presented for the analysis of electromagnetic radiation and scattering from finite microstrip structures. The two techniques are based on two different formulations, viz. the volume/surface and surface/surface formulations. In the volume/surface formulation the finite-sized dielectric is replaced by an equivalent volume polarization current whereas the conducting plates are replaced by equivalent surface currents. For the surface/surface formulation the surface covering the dielectric volume is replaced by equivalent electric and magnetic currents and the conducting plates by surface electric currents. Both techniques can be utilized for the analysis of arbitrarily shaped finite microstrip structures. The techniques are quite accurate and they are utilized to validate each other. Finally, typical numerical results are presented representing the agreement between these two solution techniques.

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