Abstracts

Non-Perturbative Fullwave Analysis of Lossy Planar Circuits

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A non-perturbative analysis, including both metallic and dielectric losses, of planar circuits is presented. The Green's impedance dyadics are modified to account for metallic losses in the ground plane and the conducting surfaces. Dielectric constants are allowed complex values to describe their lossy properties. The complex resistive boundary condition is modified to take into account the fact that thin conductors distinguish between LSE and LSM modes. The theory describes lossy ground planes exactly and is exact for conductors of finite width in the limit of small thickness. Expression for the conductance, the resistance, the inductance and the capacitance matrices are presented as well as corresponding numerical results. Modal attenuation constants and dispersion curves are discussed.

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