Abstracts

Impedance Domain Green's Functions in the Spectral for Layered Anisotropic Media

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This paper presents new formulations of the impedance Green's functions in the spectral domain for general anisotropic media. The main advantages are: first, decoupling of the relationship between electric and magnetic field as opposed to dealing with coupled equations obtained when using other methods, and secondly, obtaining closed form expressions of the different TE and TM wave propagation constants. This is essential for modelling substrates involving tensor components and for the rigorous analysis of (M)MIC structures on multiple layered anisotropic substrates. The theory is demonstrated at the example of microstrip lines on ferrite-dielectric substrates with different directions of magnetic bias. The numerical results are found to be in good agreement with previously published data.

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