Abstracts

A Study of Dielectric Resonators Based on Two-Dimensional Fast Wavelet Algorithm

K.F. Sabet and L.P.B. Katehi. "A Study of Dielectric Resonators Based on Two-Dimensional Fast Wavelet Algorithm." 1996 Microwave and Guided Wave Letters 6.1 (Jan. 1996 [MGWL]): 19-21.

This letter reports the implementation of orthonormal wavelets for the moment method characterization of three-dimensional dielectric structures. The formulation is based on a 3-D volume integral equation, which is solved numerically using a 2-D multiresolution analysis in conjunction with a sub-domain pulse basis. The use of multiresolution expansions leads to highly sparse linear systems that can be solved very efficiently using the bi-conjugate gradient method. To speed up the numerical evaluation of moment integrals, the fast wavelet algorithm (FWA) has been employed.

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