Abstracts

Improvements of the 2-D-FDTD Method for the Simulation of Small CPWs on GaAs Using Time Series Analysis

S. Hofschen and I. Wolff. "Improvements of the 2-D-FDTD Method for the Simulation of Small CPWs on GaAs Using Time Series Analysis." 1994 MTT-S International Microwave Symposium Digest 94.1 (1994 Vol. I [MWSYM]): 39-42.

The time domain simulation results of a two-dimensional FDTD analysis of a planar waveguiding structure are normally analysed by Fourier transform. The introduced method of time series analysis to extract propagation and attenuation constants reduces the desired computation time drastically up to a factor 25. Additionally, a nonequidistant discretization can be used to reduce the number of points in the spatial grid. Therefore, it is possible to simulate e.g. coplanar waveguide (CPW) structures with very thin conductors and small dimensions, as they are used in MMIC technology. The simulation results of several examples are compared with measurements and show good agreement.

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