Abstracts

A hybrid technique combining the method of moments in the time domain and FDTD

A.R. Bretones, R. Mittra and R.G. Martin. "A hybrid technique combining the method of moments in the time domain and FDTD." 1998 Microwave and Guided Wave Letters 8.8 (Aug. 1998 [MGWL]): 281-283.

This letter presents a new hybrid method that efficiently combines two versatile numerical techniques, viz., the finite difference time domain (FDTD) and the method of moments in the time domain (MoMTD). The hybrid method is applicable to complex geometries comprising arbitrary thin-wire and inhomogeneous dielectric structures. It employs the equivalence theorem to separate the original problem into two subproblems: (1) the region containing the wires, which is analyzed by using the MoMTD, and (2) the dielectric zone that is modeled with the FDTD. The application of the method is illustrated by analyzing two canonical problems involving thin wires and inhomogeneous media.

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