Abstracts

Efficient Hybrid TLM/Mode Matching Analysis of Packaged Components

M. Righi and W.J.R. Hoefer. "Efficient Hybrid TLM/Mode Matching Analysis of Packaged Components." 1996 MTT-S International Microwave Symposium Digest 96.2 (1996 Vol. II [MWSYM]): 447-450.

A combination of Transmission Line Matrix (TLM) method and time domain mode matching is proposed, The resulting hybrid algorithm allows to take full advantage of the characteristics of time domain methods for regions with highly complex geometries while exploiting the efficiency of analytical formulations for the more regular regions. The approach is demonstrated for a packaged microstrip line containing a via-hole. While the planar circuit is discretized by a TLM mesh, the field in the package is decomposed into modal fields. The two sub-domains are joined by modal diakoptics. We thus obtain not only a significant reduction in computer time and memory, but also gain new physical insight into the physics of package resonance.

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