

Abstracts

A stable algorithm for modeling lumped circuit source across multiple FDTD cells

Jie Xu, An Ping Zhao and A.V. Raisanen. "A stable algorithm for modeling lumped circuit source across multiple FDTD cells." 1997 Microwave and Guided Wave Letters 7.9 (Sep. 1997 [MGWL]): 308-310.

Incorporating lumped-circuit elements into finite-difference time-domain (FDTD) simulation greatly enhances the FDTD method's capability to model both distributed structures and lumped circuitries. The multiple-cell formulation proposed by C.H. Durney et al. (see *ibid.*, vol. 6, p. 85-7, Feb. 1996) is only numerically stable for modeling structures with large permittivity. A stable algorithm for modeling material with both large and small permittivity is presented in this letter. Verification data is given together with detailed derivations.

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