

# 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.

 [Return to main document.](#)