

Abstracts

An improved thin-wire model for FDTD

R.M. Makinen, J.S. Juntunen and M.A. Kivikoski. "An improved thin-wire model for FDTD." 2002 Transactions on Microwave Theory and Techniques 50.5 (May 2002 [T-MTT]): 1245-1255.

An improved thin-wire model for the finite-difference time-domain method is proposed. The new model can be used to accurately model straight wire sections connected to other metal structures. In addition, the model includes the effect of charge accumulation at wire end caps. The end-cap model is based on conservation of charge and Coulomb's law. Using the end-cap model, unconnected wires such as wire antennas are also accurately modeled. The results indicate a significant improvement in predicting the resonance frequency of a dipole antenna.

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