Abstracts

Electromagnetic and Transport Considerations in Subpicosecond Photoconductive Switch Modeling

S.M. El-Ghazaly, R.P. Joshi and R.O. Grondin. "Electromagnetic and Transport Considerations in Subpicosecond Photoconductive Switch Modeling." 1990 Transactions on Microwave Theory and Techniques 38.5 (May 1990 [T-MTT] (Special Issue on Applications of Lightwave Technology to Microwave Devices, Circuits, and Systems)): 629-637.

It is now possible to use optoelectronic techniques to both generate and measure electrical waveforms with subpicosecond rise times. These rise times invalidate assumptions commonly made in developing equivalent circuit models for transmission lines and other simplifications commonly made in modeling conductivity. In this paper we discuss how a combination of direct finite-difference time-domain solutions of Maxwell's equations and Monte Carlo models of photocarrier transport can be used to avoid making these assumptions.

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