

Abstracts

Pulsed-RF and Transient Analysis of Nonlinear Microwave Circuits by Harmonic-Balance Techniques

V. Rizzoli, A. Lipparini, P. Ghigi, F. Mastri and C. Cecchetti. "Pulsed-RF and Transient Analysis of Nonlinear Microwave Circuits by Harmonic-Balance Techniques." 1991 MTT-S International Microwave Symposium Digest 91.2 (1991 Vol. II [MWSYM]): 607-610.

The paper introduces a harmonic-balance approach to the simulation of nonlinear microwave circuits excited by pulsed RF and/or DC sources. The same technique also provides a transient analysis capability for circuits including passive components that can only be characterized in the frequency domain. Making use of Fourier expansions of the modulating signals, the problem is reduced to the analysis of the nonlinear circuit under multitone excitation. The resulting job is very demanding from the numerical viewpoint, and requires the harmonic-balance simulator to possess a number of advanced capabilities, which are discussed in detail. The pulsed-RF analysis of a microstrip power amplifier matched by radial stubs is presented as an example of application.

[Return to main document.](#)