Abstracts

Frequency-Domain Nonlinear Circuit Analysis Using Generalized Power Series

G.W. Rhyne, M.B. Steer and B.D. Bates. "Frequency-Domain Nonlinear Circuit Analysis Using Generalized Power Series." 1988 Transactions on Microwave Theory and Techniques 36.2 (Feb. 1988 [T-MTT] (Special Issue on Computer-Aided Design)): 379-387.

This paper presents for the first time details of the generalized power series technique for the analysis of analog nonlinear circuits. The method uses generalized power series descriptions of the nonlinear elements and a spectral balance technique to operate entirely in the frequency domain. It is therefore suited to the analysis of analog nonlinear circuits with large-signal multifrequency excitation of arbitrary frequency separation. The analysis of a low-frequency mixer is used here as a vehicle to illustrate the concepts of large-signal frequency-domain analysis and the generalized power series analysis technique.

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