Abstracts

Separation of the nonlinear source-pull from the nonlinear system behavior

P. Crama, Y. Rolain, W. Van Moer and J. Schoukens. "Separation of the nonlinear source-pull from the nonlinear system behavior." 2002 Transactions on Microwave Theory and Techniques 50.8 (Aug. 2002 [T-MTT]): 1890-1894.

In this paper, we describe a measurement technique to identify a nonlinear system in the presence of nonlinear source-pull. Models identified with continuous-wave measurement data are not generalizable when nonlinear source-pull is present. This is demonstrated on measured data and compared with the performance of the proposed technique. The method is based on two-tone signals with very close frequencies that excite the system at the fundamental and harmonic frequencies. By varying the phase relation between the beat components, the system's nonlinear behavior is separated from the nonlinear source-pull. Note that such excitations can be generated using commercially available synthesizers with single-sideband in-phase-quadrature modulation options.

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