# Abstracts

## Time-varying Volterra-series analysis of spectral regrowth and noise power ratio in FET mixers

*J.A. Garcia, M.L. De la Fuente, J.C. Pedro, N.B. Carvalho, Y. Newport, A. Mediavilla and A. Tazon. "Time-varying Volterra-series analysis of spectral regrowth and noise power ratio in FET mixers." 2001 Transactions on Microwave Theory and Techniques 49.3 (Mar. 2001 [T-MTT]): 545-549.*

This paper presents a direct and robust analysis technique for evaluating nonlinear distortion phenomena in FET mixers excited by multitone signals. Time-varying Volterra-series analysis has previously been proven to be appropriate for small-signal intermodulation-distortion calculations in mixers excited by simple RF signals. Spectral convolutions of the suitably mapped control voltages are introduced in this paper in order to solve the nonlinear current source calculations for narrow-band modulated or broad-band multicarrier RF signals. Simulations and measurements of a properly characterized resistive mixer validate the accuracy of this direct and noniterative analysis tool for spectral regrowth and noise-power-ratio prediction in such applications.

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