# Abstracts

## M-ary PSK signal power spectrum at the output of a nonlinear power amplifier

This paper proposes a simple accurate method to estimate the output wideband M-PSK spectrum, which is spreaded by a nonlinear power amplifier. The amplifier is modelled by a complex power series extracted from CW measurements. Some papers relate spectral regrowth assuming that the input signal is Gaussian. An other contribution derives a closed form expression between the output covariance function and the input QPSK-OQPSK signal according to cumulant properties for a third order polynomial model. Even if the generalization to higher order is straightforward, high order cumulant statistic expressions are quite tedious and difficult to exploit. In this paper a simple closed-form expression between input signal and output signal spectrum that can be applied to any M-PSK signal for any order of a memoryless nonlinear model is derived. Different pulse waveforms are simulated to test this closed form expression.

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