# Abstracts

## Synergistic design of DSP and power amplifiers for wireless communications

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Co-design of digital signal-processing (DSP) algorithms and power-amplifier characteristics can lead to improved efficiency and linearity through a variety of strategies including: predistortion, DSP control over bias conditions, particularly the power supply voltage, and DSP generation of digital input signals for switching amplifiers. This paper discusses several amplifier architectures that exemplify these approaches, including: bias-controlled amplifiers, linear amplification with nonlinear component amplifiers, and class-S amplifiers. We envision for the future a generation of "smart power amplifiers," in which DSP optimization of amplifier parameters is carried out for changing environments.

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