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S E M I N A R

Room 118 Civil Engineering

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A Linearized CMOS OTA with Frequency-Dependent Harmonic Distortion Analysis and Its Application in Filters

by

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Abstract: Modern wireless and wireline communication systems require high-performance analog baseband circuits. The trends for communication systems are higher data rates; thus large bandwidth and high linearity are required.

It's well known that high frequency parasitic effects are very important for high frequency RF circuits. Harmonic distortion analysis (Volterra series) shows that the parasitic effects also play a big role in the linearity of baseband circuits. Harmonic distortion analysis of a proposed linearized OTA shows that the linearity degradation is proportional to the operating frequency of OTA due to high frequency poles. Experimental results of the prototype chip are also demonstrated to confirm the theoretical results.

Jianlong Chen received his BS in applied physics and MSEE from University of Science and Technology of China and University of Michigan, in 1999 and 2001, respectively. He is currently working towards the Ph.D. degree at Analog and Mixed Signal Center, Texas A&M University, College Station, TX. His research interests include analog filter, continuous-time sigma-delta modulator and xDSL transceiver architecture.

