EE Department Seminar

30 Temmuz, 2010, Cuma, 15:00
Yorgo İstefanopulos Toplantı Salonu (KB 217)

Analysis and Design for Reliability of Analog Circuits in Nanometer CMOS Technology

Prof. Georges Gielen
Katholieke Universiteit Leuven -BELGIUM

Reliability is becoming one of the major concerns in designing integrated circuits in nanometer CMOS technologies. Problems relate to increased external interference such as caused by crosstalk and EMI, as well as due to technology-related degradation mechanisms such as NBTI, causing time-dependent circuit performance degradation. Variability only makes these things more severe. This creates a need for innovative design techniques and design tools that help designers coping with these reliability and variability problems. This invited talk will describe novel circuit design techniques that can be used at IC design time before tapeout or through run-time circuit adaption and reconfiguration after fabrication. Also, design tools for the efficient analysis and identification of reliability problems in analog circuits are described. This will be illustrated with some design examples.

Georges G.E. GIELEN received the MSc and PhD degrees in Electrical Engineering from the Katholieke Universiteit Leuven, Belgium, in 1986 and 1990, respectively. He currently is a Full Professor at the Katholieke Universiteit Leuven. His research interests are in the design of analog and mixed-signal integrated circuits, and especially in analog and mixed-signal CAD tools and design automation (modeling, simulation and symbolic analysis, analog synthesis, analog layout generation, analog and mixed-signal testing). He has authored five books and more than 300 papers in journals and conference proceedings. He is Fellow of the IEEE and served as the 2005 President of the IEEE Circuits And Systems (CAS) Society.