Thursday, November 4
Scaife Hall Auditorium
Room 125
4:30 p.m.
Refreshments at 4:00 p.m.

Professor Ramesh Harjani
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Department of Electrical & Computer Engineering

Injection Locking Techniques for Wired & Wireless Communication

Injection locking techniques have been used since the start of the century. However, in between their use faded as we increasingly relied on PLLs for frequency multiplication and phase synchronization. In the recent past, interest in injection locking has once again revived due to the re-discovery of a number of its properties.

In this talk we shall describe some recent RF circuits for wireless and wired communication that exploit injection locking to increase performance and reduce power. In particular, we describe some recent developments in circuits for phased arrays, frequency synthesis and high speed I/Os. The talk will provide an overview of both recent and ongoing research results.

(For More info. Please visit ECE seminar website.)

Ramesh Harjani is a Professor in the Department of Electrical & Computer Engineering at the University of Minnesota. He is a Fellow of the IEEE and a Distinguished Lecturer of the IEEE Circuits and Systems Society. He received his Ph.D. in Electrical Engineering from Carnegie Mellon University in 1989. He was at Mentor Graphics, San Jose before joining the University of Minnesota. He has been a visiting professor at Lucent Bell Labs, Allentown, PA and the Army Research Labs, Adelphi, MD. He co-founded Bermai Inc, a startup company developing CMOS chips for wireless multi-media applications in 2001. His research interests include analog/RF circuits for wired and wireless communication systems.

Dr. Harjani received Best Paper Awards at the 1987 DAC, 1989 ICCAD, the 1998 GOMAC and the 2007 and 2010 TECHCON. His papers have been recognized as one of the most influential in the first 25 years of DAC and the Best of ICCAD. His research group won 1st prize for the SRC Design Challenges in 2000 and 2003. He was an Associate Editor for IEEE Transactions on Circuits and Systems II in 1995, Guest Editors for the International Journal of High-Speed Electronics and Systems and for Analog Integrated Circuits and Signal Processing in 2004 and is a Guest Editor for the Journal of Solid-State Circuits during 2009-2011. He was the Chair of the IEEE Circuits and Systems Society technical committee on Analog Signal Processing from 1999 to 2000.

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