

Equalization Architectures for High Speed ADC-Based Serial I/O Receivers

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Date: Friday, October 7, 2016
Time: 2:00pm Location: EEB 132

Abstract: Increasing I/O data rates in excess of tens of Gb/s is necessary to support the future bandwidth requirements for high performance applications such as data centers and exascale supercomputing. This demand for increased data rates over high-loss channels has motivated investigation into advanced modulation schemes, such as PAM4 and PAM8, and the use of forward error correction. These advanced modulation schemes are a natural fit for ADC-based receiver architectures. This talk discusses ADC-based receiver architectures suitable for operation in the tens of Gb/s over high-loss channels in an energy efficient manner, which can enable the integration of a large number of serial links and significant improvements in interconnect bandwidth density.

Biography: Sebastian Hoyos received the B.S. degree in electrical engineering from Pontificia Universidad Javeriana (PUJ), Bogota, Colombia, in 2000, and the M.S. and Ph.D. degrees in electrical engineering from the University of Delaware, Newark, in 2002 and 2004, respectively. He was with Lucent Technologies Inc., Bogota, Colombia, from 1999 to 2000 for the Andean region in South America. Simultaneously, he was a lecturer with PUJ, where he lectured on microelectronics and control theory. During his M.S. and Ph.D. studies, he was with PMC-Sierra Inc., the Delaware Research Partnership Program, and the Army Research Laboratory Collaborative Technology Alliance in Communications and Networks. He was a Postdoctoral Researcher (2004-2006) with the Berkeley Wireless Research Center, Department of Electrical Engineering and Computer Sciences, University of California, Berkeley. He joined Texas A&M University, College Station, TX in 2006 where he is currently an Associate Professor with the Department of Electrical and Computer Engineering. His research interests include telecommunication systems, digital signal processing, and analog and mixed-signal processing and circuit design.

Hosted by Prof. Hossein Hashemi, Prof. Mike Chen, and Prof. Mahta Moghaddam. Organized and hosted by Tzu-Fan Wu.