EE Department Seminars

October 25, 2010, Monday, 15:00-16:00 p.m.
Yorgo Istefanopulos Meeting Lounge (KB 217)

A New World Record in Areal Recording Density for Digital Tape Recording Systems

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The volume of digital data being produced is growing at an ever increasing pace. According to a recent International Data Corporation study, 281 exabytes of data were created in 2007. In the future, this staggering volume of data is projected to grow at an almost 60% compound annual growth rate, faster than the expected growth rate of storage capacity. Moreover, new regulatory legislation requires that a larger fraction of this data be preserved. All of this translates into a growing need for cost-effective digital archives. Tape storage is the technology of choice for archival applications. State-of-the-art linear tape products found on the market achieve an areal storage density of about 1 Gbit/in2 and a cartridge capacity on the order of one to two terabytes. A technology demonstration showing an areal density of 29.5 Gbit/in2 using a new barium-ferrite magnetic medium was recently achieved jointly by IBM and Fujifilm. This talk will address the various breakthroughs in tape media, tape path, servo format, servo control, data detection and signal processing that made this new areal density record possible.

Short Bio:

Sedat Olcer received a Diploma of electrical engineering and a Ph.D. degree from the Swiss Federal Institute of Technology, Lausanne (EPFL), Switzerland. From 1982 to 1984, he was a research associate at the Information Systems Laboratory of the Stanford University, Stanford, CA, and at Yale University, New Haven, CT. In 1984, he joined the IBM Zurich Research Laboratory, Rueschlikon, Switzerland, where he has been working on digital transmission techniques for magnetic recording channels, and high-speed data communications for local area networking and network access. His research interests are in digital communications, signal processing and coding, with applications to broadband network access and storage systems. He was named an IEEE Fellow in Nov. 2005.