The Institute of Electrical and Electronics Engineers (IEEE)

Galveston Bay Section Meeting

Joint VTS Chapter

June 30th, 2017 (Friday) Luncheon Meeting

TOPIC: "Present and Future Challenges of Data Storage Channels"

SPEAKER: Dr J.R.Cruz, Universityof Oklahoma

IEEE/VTS Distinguished Speaker

PRESENTATION:

Data storage plays a large role in our lives and drives an industry with annual sales approaching $30B. To be useful, data storage devices must be able to reliably read back the same data that was originally written. However, the underlying communication channels in these systems are inherently unreliable, often very unreliable, and behave in complex ways unlike simpler communications channels often found in transmission systems. Understanding the behavior of these complex channels is necessary in order to design reliable data storage systems that can overcome these challenges. In this lecture, we first discuss the magnetic recording channel for high-density hard-disk drives and our development of a state-the-art channel model. We also discuss NAND-flash solid-state drive channels as well as future non-volatile memories such as spin-torque transfer random access memory (STT-RAM), and explore how all these channels pose special problems for reliable storage system design.

SPEAKER:

J. R. Cruz received his undergraduate degree in electrical engineering from the University of Porto, Portugal, in 1974, and the M.S. and Ph.D. degrees from the University of Houston, Texas, in 1977 and 1980, while a Fulbright Fellow. He currently holds the Tilley Chair in Electrical Engineering at the University of Oklahoma. He was an engineer and task leader at the NASA Johnson Space Center in Houston, TX, working on the navigation systems for the first two missions of the Space Shuttle Columbia, and later became a member of the research staff of Motorola, Inc., where he worked on signal processing for wireless communications. His current interests are in signal processing and coding for digital communications and storage systems. Professor Cruz is a Fellow of the IEEE and the Radio Club of America. He was a co-recipient of the Best Paper Award at the 2007 IEEE International Conference on Communications, a recipient of the Outstanding Service and Stuart Meyer Memorial Awards from the IEEE Vehicular Technology Society, and the IEEE Third Millennium Medal. He is a former Editor-in-Chief of the IEEE Transactions on Vehicular Technology, a past President of the IEEE Vehicular Technology Society, and a former Chairman of the Research Council of the University of Oklahoma.

Gilruth Recreation Center NASA-JSC, Discovery Room (downstairs)

Free parking. No security processing required. Easy drive in off Space Center Blvd. See website below for map.

Interested non-IEEE engineers, technicians, scientists, IEEE Members and guests alike are welcome!

12:00 PM – 1:00 PM - Program and Q&A

11:30 AM - Light Lunch with reservation ($10.00 donation). Please RSVP Before Noon Tuesday, May 26, 2017

Number of lunches is limited. Please reserve early

Reservations for lunch or to attend this meeting should be made by email to:
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