

**TUESDAY
APRIL 15, 2008**

**Hamerschlag Hall
Room 1112**

2:00 p.m.
Refreshments—1:45 p.m.



Prof. José Vieira
PROFESSOR
UNIVERSITY OF AVEIRO

José Vieira was born in Aveiro, Portugal in 1963 and received the diploma in Electrical Engineering in 1988 from the University of Coimbra. In 2000 he received his PhD degree in Electrical Engineering from the University of Aveiro. He has been a professor of electrical engineering in the University of Aveiro since 1991, and a researcher at the IEETA Institute. He has been the President of the Portuguese section of the AES, since 2003. His major research interests are in the fields of digital audio, signal reconstruction, digital fountains and compressed sensing.

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Compressed Sensing and Digital Fountains

Blahut was one of the first researchers to notice the tight connections between the signal processing and the coding areas. Coding using the real or complex fields was until a few years ago, a mere academic topic without any interesting applications.

Recently, Elad and Donoho discovered an efficient method to recover a sparse signal from a set of random linear combination of its samples. This discovery created the compressed sensing area and new ways of sampling and representing signals.

Digital Fountain coding is a new concept where the traditional paradigm of transmitting information as an ordered stream of packets is changed to one where the user must receive a sufficient amount of packets in order to reconstruct the original information.

In this tutorial talk we will introduce these two concepts, Compressed Sensing and Digital Fountains, and how they are related. An overview of the applications of Digital Fountains will also be presented.