



THE ELECTRICAL & COMPUTER ENGINEERING PROGRAM PRESENTS

Indefinite Quadratic Forms in Gaussian Random Variables: Distribution, Scaling, and Applications

Tareq Y. Al-Naffouri

Wednesday, June 3
12 – 1 p.m. light lunch will be served
Lecture Hall 143

Many applications in statistics, signal processing, and communications deal with quadratic forms in Gaussian random variables. In this talk, we study the distribution and scaling of indefinite quadratic forms in Gaussian random variables and apply that to study the scaling of broadcast channels. Part of this work was done in collaboration with Prof. Babak Hassibi (California Institute of Technology).

Dr. Tareq Al-Naffouri obtained his B.S. in Mathematics in 1994 from King Fahd University of Petroleum and Minerals, Saudi Arabia, his MS in Electrical Engineering from Georgia Institute of Technology in 1998, and his PhD in Electrical Engineering in 2004 from Stanford University. In 2005, he was a visiting researcher in the Electrical Engineering Department at California Institute of Technology and a Fulbright Scholar at the University of Southern California (USC) Feb-Aug. 2008. In September 2005, he joined the Electrical Engineering Department at King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia, as an assistant professor. In addition, since Nov. 2008, he has been appointed as the Director of the Office of Cooperation with King Abdullah University of Science and Technology (KAUST).

Dr. Al-Naffouri's research interests are in adaptive and statistical signal processing and their application to wireless communications and in multiuser wireless networks. His research on adaptive signal processing won the best student paper award at the IEEE-EURASIP Workshop on Nonlinear Signal and Image Processing 2001. He has held internship and research positions in NEC, Tokyo, National Semiconductors, Santa Clara, CA, Beceem Communications, Santa Clara, CA, the University of California at Los Angeles, and California Institute of Technology.



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