كلية الهندسة
College of Engineering
QATAR UNIVERSITY جامعة قطر

EE SEMINAR SERIES

The Department of Electrical Engineering, cordially invites you to a seminar on

Degrees of Freedom for Interference and Relaying Systems

By

Dr. Mohammad Nafie

Speaker's Bio:

Dr. Mohammad Nafie has graduated with a BSc from Cairo University in 1991, and with a PhD from the University of Minnesota in 1999. He has then joined the R&D center at Texas Instruments till 2001, and then co-founded and was the CTO of an Egyptian tech startup, Sysdsoft, from 2003 to 2006. He is currently an Associate Professor at both Cairo University and Nile University, where he was the director of the Wireless Intelligent Networks Center till 2012. He has over 60 papers and around 20 US patents. His research interests are in the areas of cognitive radios, relaying and interference management.

Date: Monday, February 11, 2013
Time: 11:00 am - 12:00 pm
Venue: G-209 Male Building

Abstract

With the expected smaller cells of cellular systems, wireless communications systems are more limited by interference than before. It is usually difficult to characterize the fundamental limits of performance of these systems. We can however characterize the performance of some of these systems using the pre-log factor of the capacity terms which is usually called the degrees of freedom (DoF) of the system and corresponds to the number of interference free streams that can be sent in the system. In this talk we present achievable schemes and upperbounds for a 3 user MxN MIMO interference channel, and also for a two way relaying system where a base station and a set of mobile stations are exchanging messages. Time permitting we also present an alternating relaying system and characterize its DoF.