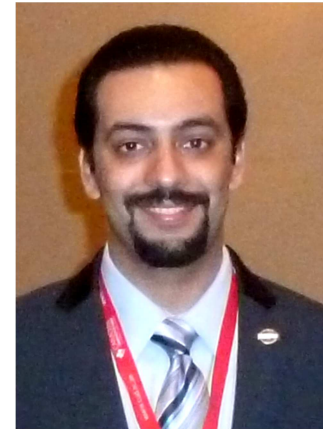




IEEE Okanagan Subsection Presents

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New Transform Domain for Exact Analysis of Wireless Cooperative Networks



Time & Date: 5pm-6pm, Monday June 24, 2013

Location: EME 1202, UBC Okanagan campus

Talk Abstract: Much research and publication focused on the performance of Amplify-and-Forward (AF) relaying systems. Yet, for multihop networks, all previous work reports approximate solutions for the performance metrics of the system because no exact solution for the end-to-end received SNR of multihop AF relaying is known. In this seminar, a new transform method is presented for the exact analysis of generic multihop AF relaying systems, valid for any modulation scheme, and any fading channel distribution. The new approach represents a general framework for the analysis of cooperative networks. The talk begins with presenting the system model and then the modified generalized transformed characteristic function (M-GTCF) approach is explained and discussed. Numerical results are presented for performance metrics such as the average symbol error probability, ergodic capacity and the outage probability for systems operating over Rayleigh, Nakagami- m and Rician fading channels to demonstrate the application of the new M-GTCF approach. The computational complexity of the proposed method is compared to the direct exact method. Numerical results for different fading channels show that there is a perfect match between results obtained from the M-GTCF method and simulation results, while some of the state-of-art published approximate results are very inaccurate. Finally, the validity of the CLT theorem and the presence of a limiting distribution to the end-to-end SNR are investigated.

Speaker Biography: Samy S. Soliman (S'08) received the B.Sc. (honors) and M.Sc. from Cairo University, Egypt, in 2007 and 2009, respectively. He was awarded the Cairo University award of Eng. Nabil El-Gebaly and the Cairo University award of Eng. Reda Hamza both in 2008. Mr. Soliman worked as a Teaching and Research Assistant at the Electronics and Electrical Communications Department, Cairo University, as well as at the Electronics Engineering Department, AUC, from 2007 to 2009. In 2009, Mr. Soliman joined the AITF Wireless Communications Laboratory (*iWCL*) in 2009 as a Research Assistant and is currently a Ph.D. candidate at the University of Alberta, Canada. He is a recipient of the Professional Development Award from the University of Alberta twice in June 2012 and April 2013. He was also awarded an IEEE Student Grant in May 2012. His research interests include wireless cooperative networks, multiple input multiple output (MIMO) systems, wireless sensor networks, and ultra-wide bandwidth wireless systems.

Refreshments will be provided. For further information please contact:
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