Queen's University

SCHOOL OF COMPUTING

2011 Distinguished Seminar Series

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Carleton University.

Thursday, Jan. 20th
Dupuis Hall 215
2:30 - 3:30 PM

Refreshments

Emerging Concepts and Technologies for Beyond-4G Wireless Cellular Networks for Broadband Connectivity

Commercial cellular wireless communications have a history of about 25 years. With the upcoming 4th generation (4G) networks, namely LTE/LTE-Advanced, wireless internet connectivity will be faster and more affordable which will result in substantial increase in wireless internet usage. The wireless networks of the future will not be limited to supporting only cell phones; rather, such advanced networks will support a plethora of wireless devices (WDs) in a truly pervasive wireless environment facilitating human-to-human, human-to-machine, and machine-to-machine communications. This connectivity will enable various services such as e-health, e-government, e-learning, and e-business, which are expected to result in an improved quality of life and a better functioning society. As such, broadband wireless connectivity will become an inseparable part of our lives, and in a not too distant future, ubiquitous (anytime, anywhere) and affordable broadband (very high speed) wireless connectivity will be one of the most important measures in determining the extent of development in societies.

This talk aims at highlighting some of the emerging concepts and technologies, along with the corresponding mathematical tools, which are expected to facilitate the affordable provision of very high data rates with virtually ubiquitous coverage in beyond-4G wireless networks. In particular, the talk will focus on the coherent integration of advanced radio resource management (RRM) techniques with certain advanced physical layer (PHY) operations in the presence of advanced radio access network (RAN) architectures; we refer to this design principle as the "integrated cross-layer across-network design".

Biography http://www.sce.carleton.ca/faculty/yanikomeroglu.html

Dr. Yanikomeroglu is a Full Professor at the Department of Systems and Computer Engineering at Carleton University. His research interests cover many aspects of the physical, medium access, and networking layers of wireless communications with a special emphasis on the next-generation cellular networks; Dr. Yanikomeroglu co-authored 38 peer-reviewed papers in these research areas in 2010. In recent years, Dr. Yanikomeroglu's research has been funded by the Canadian and international industry including Huawei, RIM, Samsung, and Nortel.

Dr. Yanikomeroglu is a recipient of the Carleton University Faculty Graduate Mentoring Award in 2010, the Carleton University Graduate Students Association Excellence Award in Graduate Teaching in 2010, and the Carleton University Research Achievement Award in 2009. He has been Carleton's nomination for the NSERC Steacie Fellowship in 2010 and 2011. Dr. Yanikomeroglu has given around 20 tutorials in leading international conferences. He served as the Technical Program Co-Chair of IEEE Wireless Communications and Networking Conference (WCNC) 2004 and the Technical Program Chair of IEEE WCNC 2008. He was the General Co-Chair of the IEEE Vehicular Technology Conference held in Ottawa in September 2010 (VTC2010-Fall). He is the former chair of the IEEE Technical Committee on Personal Communications (now called Wireless Technical Committee). Dr. Yanikomeroglu is a member of the Carleton University Senate; he is also a registered Professional Engineer in the province of Ontario, Canada. Dr. Yanikomeroglu is also an adjunct research professor at King Saud University's Prince Sultan Advanced Technology Research Institute.