Princeton/Central Jersey Section of IEEE Circuits and Systems Chapter Meeting

Time:
4:00-5:00pm, Friday, October 3, 2003

Place:
WINLAB, Rutgers University, Bush Campus, 73 Brett Road, Piscataway, NJ

Speaker:
Dr. Frederik Gunnarsson
Department of Electrical Engineering, Linkoping, University, Sweden

Talk: ASPECTS OF POWER CONTROL IN WIRELESS NETWORKS

Abstract:
The global communication systems critically rely on control algorithms on various kinds. In universal mobile telephony system (UMTS)--the third generation mobile telephony system just being launched--power control algorithms play an important role for efficient resource utilization. This talk describes and discusses various aspects of UMTS power control with emphasis on practical issues, using an automatic control framework. Generally, power control of each connection is distributively implemented as cascade control, with an inner loop to compensate for fast variations and an outer loop focusing on longer term statistics. These control loops are interrelated via complex connections, which affect important issues such as capacity, load and stability. Therefore, both local and global properties are important. The concepts and algorithms are illustrated by simple examples and simulations.

Biography:
Frederik Gunnarsson received M. Sc. degree in applied physics and electrical engineering in 1996 and Ph. D. degree in electrical engineering in 2000, both from Linkoping University. He is presently with Division of Control and Communications, Department of Electrical Engineering, Linkoping University, Linkoping, Sweden. He has published several journal and more than a dozen IEEE conference papers on power control in wireless networks.

Refreshments:
3:45-4:00 (provided by IEEE)

Information:
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