The Hong Kong Polytechnic University
Department of Applied Mathematics

Seminar
On

Optimization and Power Control of Wireless Communication Systems

by

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Abstract

Power control is a core component of modern wireless communication systems. It controls the transmission power of each mobile device so as to reduce their total power consumption and to suppress the interference among their transmitted signals.

An optimal power control can be realized by solving an optimization problem. Namely, minimizing the total transmission power of all mobile devices, while keeping the interference below a desired level. The solution of this optimization problem is valuable for system design, since it provide a baseline for benchmarking. The solution also provide guidance for devising real-time power management schemes. Such a scheme usually has high commercial value.

In this talk, we introduce the optimization problem to the community of mathematical programming and operations research. We also present some of our approaches to the optimization problem for a recently developed wireless communication system.

Date : 6 March, 2008 (Thursday)

Time : 3:00 – 4:30 p.m.

Venue : Departmental Conference Room HJ610
The Hong Kong Polytechnic University

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