Hamilton Institute

Hamilton Bicentenary Year 2005 Public Lecture Series

Industrial Mathematics in Bell Labs: Past and Present

Debasis Mitra,
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7pm Tuesday, September 27th 2005
Royal Irish Academy, Dublin

Abstract
The Mathematical and Algorithmic Sciences Center in Bell Laboratories, Lucent Technologies, is home to about 40 researchers drawn from the following disciplines: Mathematics, Computer Science, Electrical Engineering, Statistics and Operations Research. The talk will illuminate certain patterns of the Center's modes of operation that have held steadfast over several decades, and how it has come by them. Foremost of these is the blending of problems from the field with discipline based research. Tackling real world problems involves iterating between modeling, analysis and algorithms, which is invariably undertaken by multi-disciplinary teams. While drawing from the disciplinary knowledge base, the reverse process of abstracting the field experience into disciplinary knowledge is also emphasized.

This talk will dwell briefly on the lives and works of three past influential members of the Center, Thornton Fry, its first Director, John Tukey and Claude Shannon. It will then trace their legacies in recent research in queuing network analysis and optimization, exploratory data analysis of packet traffic in the Internet and space-time wireless communications.

Biography
Debasis Mitra is Vice President, Mathematical and Algorithmic Sciences Center at Bell Labs. He received the Ph.D. degree in Electrical Engineering from London University and joined Bell Laboratories as a Member of Technical Staff in 1968. During the fall semester of 1984 he was Visiting McKay Professor at the University of California, Berkeley. He directs research in fundamental mathematics, mathematics of networks and systems, statistics and data mining, information and communications theory, and industrial mathematics. His personal research interests are currently in optical networking, IP/optical convergence, stochastic traffic engineering, network economics and network revenue management.

Venue: Royal Irish Academy, 19 Dawson Street, Dublin 2

Time: 7pm Tuesday, September 27th 2005 (drinks reception 6.30pm).

Travel directions are available at www.ria.ie. For further details see www.hamilton.ie.

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