COLLOQUIUM

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Modern Statistical Process Control:
Wonder of Tube Formulae and Covariance Estimation

Tuesday, November 2, 2010
A405 Wells Hall
10:20 a.m. - 11:10 a.m.
Refreshments: 10:00 a.m.

Abstract

Development of surveillance methods to provide both event early detection and awareness of unknown or subtle but important changes is extremely important in information age. In this talk, we introduce a new joint control chart and provide a general approximation to the joint distribution of average and maximum of a general continuous time process (not necessarily stationary), and to the joint distribution of related functions, using the tube formulae. The general approximations are of interests in themselves. The control chart is applicable when the covariance function of the process is known or has to be estimated. A new nonparametric estimation of the covariance function is also given. Our new control chart is efficient and compares well with the standard control charts.
Based on joint work with Y. Richard Fan and W. McCormick.

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