STANFORD UNIVERSITY

DEPARTMENT OF STATISTICS

SPECIAL DEPARTMENTAL SEMINAR

4:15 p.m., Friday, February 11, 2000
Sequoia Hall Rm. 200

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Asymptotic equivalence of nonparametric experiments

The Le Cam deficiency distance between statistical experiments can be characterized by how closely one set of distributions can be approximated by a randomization applied to the other set of distributions. Recently, Brown and Low (1996) and Nussbaum (1996) have established Gaussian approximations to nonparametric regression and density estimation experiments, respectively, in terms of this distance. This talk will discuss some new general techniques for bounding the deficiency. A simple example of a normal approximation to a binomial will be used to demonstrate the bounds. There are two techniques which work under different conditions on the parameter set: one relies on classical local-limit theories to bound the distance and the other takes advantage of a coupling between symmetric distributions. These bounds between binomial and normal experiments are the key pieces in constructing an approximation between the density estimation experiment and a Gaussian process.