STANFORD UNIVERSITY

DEPARTMENT OF STATISTICS

DEPARTMENTAL SEMINAR

4:15 p.m., Tuesday, April 30, 2002
Sequoia Hall Room 200
(Cookies at 3:45 in 1st Floor Lounge)

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Filtering, Smoothing and Parameter Estimation in Hidden Markov Models

After a brief overview of hidden Markov models and their applications in engineering, economics and bioinformatics, we consider a number of long-standing problems concerning efficient parameter estimation and optimal filters and smoothers when the underlying Markov chain takes values in a general (possibly infinite and multidimensional) state space. We describe certain bounded-complexity approximations and simulation-based methods that are asymptotically as efficient as the computationally intractable maximum likelihood estimators and Bayesian filters and smoothers.