The University of Chicago

Department of Statistics

Seminar

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"General Empirical Bayes Wavelet Method and Exactly Adaptive Minimax Estimation"

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Monday, October 8, 2001 at 4:00 pm
133 Eckhart Hall, 5734 S. University Avenue

ABSTRACT

In many statistical problems, stochastic signals can be represented as a sequence of noisy wavelet coefficients. We develop a general empirical Bayes method for the estimation of the true wavelet coefficients. Our estimators possess the following main properties: (1) uniform ideal adaptivity in all Besov balls to the minimum risk of separable estimators, (2) universal exactly adaptive minimaxity in all Besov balls, and (3) full spatial adaptivity as a consequence of (1) and (2). In addition, our estimators are super-efficient in convergence rates at every point in the Besov spaces satisfying a mild condition on their shape parameters.
