

The University of Chicago

Department of Statistics

Seminar

PETER HANSEN

Department of Statistics

Stanford University

**“Regular and Modified Kernel-Based Estimators of Integrated
Variance: The Case with Independent Noise”**

Monday, January 10, 2005 at 4:00 PM
133 Eckhart Hall, 5734 S. University Avenue
Refreshments following the seminar in Eckhart 110.

ABSTRACT

We consider kernel-based estimators of integrated variances in the presence of independent market microstructure effects. We derive the bias and variance properties for all regular kernel-based estimators and derive a lower bound for their asymptotic variance. Further we show that the subsample-based estimator is closely related to a Bartlett-type kernel estimator. The small difference between the two estimators due to end effects, turns out to be key for the consistency of the subsampling estimator. This observation leads us to a modified class of kernel-based estimators, which are also consistent. We study the efficiency of our new kernel-based procedure. We show that optimal modified kernel-based estimator converges to the integrated variance at the optimal rate, $m^{1/4}$, where m is the number of intraday returns.