The University of Chicago
Department of Statistics

Seminar Series

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Subsampling and the m Out of n Bootstrap in Non-regular Models

MONDAY, January 28, 2008 at 4:00 PM
133 Eckhart Hall, 5734 S. University Avenue
Refreshments following the seminar in Eckhart 110.

ABSTRACT

This paper considers inference based on a test statistic that has a limit distribution that is discontinuous in a parameter. The paper shows that subsampling and m out of n bootstrap tests based on such a test statistic often have asymptotic size—defined as the limit of exact size—that is greater than the nominal level of the tests. This is due to a lack of uniformity in the pointwise asymptotics. We determine precisely the asymptotic size of such tests under a general set of high-level conditions that are relatively easy to verify. The results asymptotically invalidate subsampling and the m out of n bootstrap in some examples and validate them in others. A second paper introduces general methods of constructing tests and CIs that have correct asymptotic size.