



The University of Chicago
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STATISTICS COLLOQUIUM

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Self-Normalization for Time Series

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133 Eckhart Hall, 5734 S. University Avenue

Refreshments following the seminar in Eckhart 110.

ABSTRACT

In the inference of time series (e.g. hypothesis testing and confidence interval construction), one often needs to obtain a consistent estimate for the asymptotic covariance matrix of a statistic. Or the inference can be conducted by using resampling (e.g. moving block bootstrap) and subsampling techniques. What is common for almost all the existing methods is that they involve the selection of a smoothing parameter. Some rules have been proposed to choose the smoothing parameter, but they may involve another user-chosen number, or assume a parametric model. In this talk, we introduce the so-called self-normalized (SN) approach in the context of confidence interval construction and change point detection. The self-normalized statistic does not involve any smoothing parameter and its limiting distribution is nuisance parameter free. The finite sample performance of the SN approach is evaluated in simulated and real data examples.

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