The University of Chicago
Department of Statistics

Mini-seminars for First Year Ph.D. Students

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A Robust Regression Model for Unequally Spaced Time Series Data with Application to Water Monitoring

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ABSTRACT

The presented paper proposes a robust approach for estimating regression parameters and a first-order autocorrelation parameter in a time series with unequal spacing. Estimates are obtained from an estimating equation that is constructed as a linear combination of estimated innovation errors, made robust by symmetric and bounded functions. Subject to the data missing completely at random (MCAR) assumption and some regularity conditions, the estimates are shown to be consistent and asymptotically normal. As environmental monitoring often involves unequally spaced time series data that are not normally distributed, the proposed method is applied to the water clarity data collected from Boston Harbor.

Information about building access for persons with disabilities may be obtained in advance by calling Karen Gonzalez (Department Administrator and Assistant to Chair) at 773.702.8335 or by email (karen@galton.uchicago.edu).