



The University of Chicago
Department of Statistics

VISITING STUDENT SEMINAR

MARTIN WENDLER

Department of Statistics
The University of Chicago

Generalized Linear Statistics of Dependent Data

TUESDAY, March 1, 2011, at 3

110 Eckhart Hall, 5734 S. University Avenue

ABSTRACT

Generalized linear (GL) statistics are a unifying class that contains U -statistics, U -quantiles, L -statistics as well as trimmed and winsorized U -statistics. For example, many commonly used estimators of scale fall into this class. GL -statistics can be described as linear combinations of generalized quantiles. GL -statistics only have been studied under independence; in my talk, I will present an asymptotic theory for GL -statistics of sequences which are strongly mixing or L^1 near epoch dependent on an absolutely regular process. For this purpose, we prove an almost sure approximation of the empirical U -process by a Gaussian process. With the help of a generalized Bahadur representation, it follows that such a strong invariance principle also holds for the empirical U -quantile process and consequently for GL -statistics. We obtain the functional central limit theorem and the law of the iterated logarithm for GL -statistics as straightforward corollaries.

Information about building access for persons with disabilities may be obtained in advance by calling Sandra Romero at 773.702-0541 or by email (sandra@galton.uchicago.edu).