



The University of Mississippi
Department of Mathematics

Statistics Seminar

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Title: Sometimes, disorder helps.

11:00 am, Friday, November 1st 2019
Hume Hall 331

Abstract: Consider the problem of estimation of the parameters of a system that evolves with possibly long-range dependence. We have observations that are a realization of a stochastic process that exhibits some kind of dependence. We need to estimate in the simplest case the mean and construct some confidence intervals or test hypotheses. In many statistical problems of this kind, the sample mean has a distribution that is complex in general and might not satisfy the central limit theorem for any normalization, or has a complex limiting distribution. Several works have addressed this question over the years. The literature is abundant with procedures to estimate the dependence coefficient or the memory parameter to provide some asymptotics in this case. Even when the underlying stationary distribution is Gaussian, procedures still require estimating the variance and the memory parameter the construction of a confidence interval for the mean. In a recent work by Longla and Peligrad (2019), a step was provided in the direction of providing statistical tools that don't require estimation of the memory parameter or the variance of partial sums. This talk will take you through the procedure with examples. The idea of the proof seems to follow a joke of mine: "An organized and well placed disorder can help figure out what a previously unknown disorder was about."