



The University of Chicago
Department of Statistics

MASTER'S THESIS PRESENTATION

BEINA ZHANG

Department of Statistics
The University of Chicago

**Simulation of Fractional Brownian Motion and
Fractional Ornstein-Uhlenbeck Process**

FRIDAY, November 11, 2011, at 10:30 AM
110 Eckhart Hall, 5734 S. University Avenue

ABSTRACT

In recent years, there has been great interest in applications of long-range dependence processes, in particular fractional Brownian motion (fBm) with Hurst index $H > 1/2$. Motivated by the research in applications of fractional Brownian motion, this paper gives a brief introduction to fBm and its incremental process, the fractional Gaussian noise. Based on the properties, two simulation methods are described. Then, as an application of fBm, the fractional Ornstein-Uhlenbeck process is studied, which includes the simulation of the process provided that we have known how to simulate fBm.

For information about building access for persons with disabilities, please contact Matt Johnston at 773.702-0541 or send an email to mhj@galton.uchicago.edu. If you wish to subscribe to our email list, please visit the following web site: <https://lists.uchicago.edu/web/arc/statseminars>.