

MINI-SEMINAR FOR FIRST-YEAR PH.D. STUDENTS

Department of Statistics

Iterated Random Functions

by

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ABSTRACT

This talk is mainly based on the paper "Iterated random functions" (Persi Diaconis and David Freedman, *SIAM Rev.* 41, 41-76). The paper surveys the field of the applications of Iterated Random Functions, and describes a simple idea which helps unify many arguments in Markov chains, simulation algorithms, control theory, queuing and other branches of applied probability. The idea is -- the iterates of random Lipschitz functions converge if the functions are contracting on average.

A comparison with a well known mathematical theorem will be showed for better understanding of the main results, instead of the details of the proof. Some examples of applications taken from other papers and books will also be presented.