

EDAÍ

uff puc ufrj



Martingale approximation and the central limit theorem for exact endomorphisms

PRIMEIRA AULA: 13/maio (quarta-feira)

HORA: 13:15 h

LOCAL: UFRJ

Sala 01 e 02 da decania do CCMN

RESUMO: This lecture introduces martingales, the martingale convergence theorem and the central limit theorem for martingales. Gordin's central limit theorem for dynamical systems is based on a martingale approximation argument. Recent work of Woodroffe and others give necessary and sufficient condition that a martingale approximation for the central limit theorem holds. The lecture also will contain several examples when Gordin's method is applicable (rational functions, maps of the interval, among others)

Characteristic function operators and local limit theorems

SEGUNDA AULA: 15/maio (sexta feira)

HORA: 15:00 h

LOCAL: UFF - Instituto de Matemática

Sala do seminário, 7º andar

RESUMO: Characteristic function operators appear first in the work of Roussau-Egele in dynamical systems. Perturbation theory of operators permit eigenvalue expansions which provide an easy argument to prove various probabilistic theorems, like weak convergence to stable distributions and local limit theorems. This theory is well developed for a certain class of dynamical systems, called Gibbs-Markov dynamics. These concepts are discussed, and some examples to skew product transformations will be given. An extension of the method also shows a local limit theorem for beta-transformations.

1º Minicurso EDAÍ

por
Manfred Denker

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Poisson approximation for the number of returns to small sets

TERCEIRA AULA: 18/maio (segunda feira)

HORA: 15:00 h

LOCAL: PUC-Rio

Departamento de Matemática - sala 856

RESUMO: The lecture gives an introduction to Poisson approximation. There are three methods to obtain the approximation for Bernoulli random variables in the dynamical context: the direct method using the theorem of Sevastianov, the transfer operator method and Stein's method. The approximation is connected to distributional convergence of waiting times for the first visit to small sets in a dynamical system.