哈爾濱工業大學 数学研究院
Institute for Advanced Study in Mathematics of HIT

Ergodicity and exponential ergodicity of Feller-Markov processes on infinite dimensional Polish spaces

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CAS

Abstract:

In this talk we extend the fundamental gap comparison theorem of Andrews and Clutterbuck to the infinite dimensional setting. More precisely, we proved that the fundamental gap of the Schrödinger operator $-\mathcal{L}_* + V$ ($\mathcal{L}_*$ is Ornstein-Uhlenbeck operator) on the abstract Wiener space is greater than that of the one dimensional operator $-\frac{d^2}{ds^2} + s\frac{d}{ds} + \tilde{V}(s)$, provided that $\tilde{V}$ is a modulus of convexity for V. Similar result is established for the diffusion operator $-\mathcal{L}_* + \nabla F \cdot V$. Furthermore, we give the probabilistic proofs of fundamental gap conjecture and spectral gap comparison theorem of Andrews and Clutterbuck in finite dimensional case via the coupling by reflection of the diffusion processes.

About the Speaker:

巩馥洲，中国科学院数学与系统科学院研究员，博士生导师。曾任中国科学院数学与系统科学研究院副院长、应用数学研究所所长，国家基金委创新研究群体学术带头人、中科院随机复杂结构与数据科学重点实验室主任，第九与十届中国数学会副理事长、秘书长兼法人代表，第十三届中国数学会党委书记、副理事长、秘书长兼法人代表，中国工业与应用数学学会副理事长。证明了环路空间上的加权庞加莱不等式与带位势项的对数 Sobolev 不等式，解决了 Gross 猜测；证明了伊藤空间上 Malliavin 分析的拟不变性。参加和负责了国家 973 计划、国家基金委基础科学中心项目、创新研究群体、杰出青年基金、杰出青年基金 B 类、重点项目等多项科研项目。

8/7

2024 (Wednesday)

TIME : 9:00–10:00

VENUE : Mingde Building B201-1

COFFEE & DISCUSSION : 10:00–10:15

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