

Probability in Analysis—Stability of elliptic Harnack inequality

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摘要: There is a rich and fruitful interplay between analysis and probability theory. In this series of three lectures, I will present a sample of these. These talks are aimed at the general audience and will be given independently of each other.

系列讲座二: **Stability of elliptic Harnack inequality**

Elliptic Harnack inequality, if it holds, is a very useful tool in analysis and in probability theory. An important question is whether elliptic Harnack inequality is stable under bounded perturbation. In this talk, I will explain how probabilistic ideas can be used to address this long standing open problem. I will discuss scale invariant elliptic Harnack inequality for symmetric differential operators on metric measure space such as manifolds, graphs and fractals, or equivalently, for symmetric differential operators on metric measure space. I will show that the elliptic Harnack inequality is stable under form-comparable perturbation for strongly local Dirichlet forms on complete locally compact separable metric spaces that satisfy metric doubling property.

个人简介: 美国华盛顿大学（西雅图）数学系终身教授，分别于2007年和2014年当选为美国数理统计学会会士和美国数学学会会士。主要从事概率论及随机过程的研究，主要研究方向包括马尔可夫过程和狄氏空间理论、位势理论、随机微分方程、扩散过程、稳定过程以及偏微分方程中的概率方法等。现（曾）担任国际著名期刊 *Potential Analysis* 的主编以及 *AOP*、*AAP*、*SPA*、*EJP*、*JTP*、*PAMS* 等期刊编委，2019年荣获伊藤奖 (Itô Prize)。出版专著一部，在 *JEMS*、*MAMS*、*Math. Ann.*、*Adv. Math.*、*CMP*、*AOP*、*PTRF*、*TAMS*、*JFA* 等顶尖期刊发表论文近200篇。

时间: 2023年6月20日 14: 30-15: 30

地点: 北京理工大学良乡校区文萃楼G124