武汉大学

随机分析系列报告（六）

Potential theory of Dirichlet forms degenerate at the boundary

报告人： 宋仁明 教授（University of Illinois at Urbana-Champaign）

时间： 2021 年 04 月 09 日（周五），晚上 21:00 - 22:00

地点： 腾讯会议室 ID: 129 918 224

摘要： In this talk I will present some recent results on the potential theory of Markov processes with jump kernels degenerate at the boundary of its state space $\mathbb{R}^d_+$, the upper half space of $\mathbb{R}^d$. The jump kernel is of the form $J^D(x,y) = |x-y|^{-d-\alpha}B(x,y)$, where $\alpha \in (0,2)$ and $B(x,y)$, which involves three parameters β_1, β_2 and β_2, tends to 0 when x or y tends to the boundary. We assume that the killing function is of the form $\kappa(x) = cx_d^{-\alpha}$. Our main results are sharp two-sided estimates on the Green functions of these processes. As applications of the green function estimates, we show that the boundary Harnack principle holds for certain region of the parameters and fails in the other region.

This talk is based on two joint papers with Panki Kim and Zoran Vondracek

主办单位： 武汉大学数学与统计学院

School of Mathematics and Statistics, Wuhan University