MICHIGAN STATE UNIVERSITY
Department of Statistics and Probability

COLLOQUIUM

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Non-classical boundary crossing problems for general random walks

Tuesday, September 4, 2018
10:20 AM - 11:10 AM
Refreshments 10:00 AM
C405 Wells Hall

Abstract

In this talk we consider non-classical random walks and investigate asymptotic behavior of the first-passage times over moving boundaries.
First, we consider random walks with independent but not necessarily identically distributed increments. Assuming only that the increments satisfy the well-known Lindeberg condition, we investigate the asymptotic behavior of the first-passage times over moving boundaries.
Furthermore, we prove that a properly rescaled random walk conditioned to stay above the boundary up to the time n, converges, as n tends to infinity, towards the Brownian meander.
Earlier such (non-logarithmic) asymptotic results were known only in the i.i.d. case for constant boundaries when the Wiener-Hopf factorization exists.

The talk is based on several works joint with Denis Denisov (University of Manchester, UK) and Vitali Wachtel (University of Augsburg, Germany).

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