

Brownian Motion in a Local Field Is a Scaling Limit

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Abstract

Suppose that K is a non-Archimedean local field. Any Vladimirov operator acting on $L^2(K)$ that has a positive exponent gives rise to a diffusion process with sample paths in the Skorokhod space of K -valued paths. We will show that any such diffusion process is a scaling limit of a discrete time random walk on an infinite discrete group.

Personal Information

David Weisbart was awarded a Ph.D. in Mathematics in 2005 at the University of California, Los Angeles (UCLA) under the supervision of Professor V.S.Varadarajan. He is an Assistant Professor of Teaching in the Department of Mathematics at the University of California, Riverside (UCR).