UNIVERSITY AT ALBANY
State University of New York

College of Arts and Sciences
Department of Mathematics and Statistics

Analysis and Data Science Seminar

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A One-Parameter Family of Random Walks on the Two-Dimensional p-adic Vector Space

Tuesday, March 31, 2026
3:00 P.M. in Massry B012

Abstract. The study of $\mathbb{Q}_p^d$-valued stochastic processes is an active area of research in p-adic mathematical physics and related fields. While in the $\mathbb{R}^d$ setting, lots is known about scaling limits of random walks, only recently have we shown that a family of p-adic Levy processes associated to analogues of the heat equation is a scaling limit of random walks. By using the additional structure of a p-adic field, this family includes processes with a restricted class of anisotropies. We enlarge this class by constructing a one-parameter family of random walks on $\mathbb{Q}_p^2$ and determining their scaling limits. This talk is based on joint work with David Weisbart.