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Ashok Maitra Memorial Lectures

Speaker	:	Balint Toth (University of Bristol, UK and Alfréd Rényi Institute of Mathematics of the Hungarian Academy of Sciences)
Date	:	March 12, 2018
Title	:	Diffusive and Super-Diffusive Limits for Random Walks and Diffusions with Long Memory, Part 1
Time	:	2.00 pm – 3.00 pm
Title	:	Diffusive and Super-Diffusive Limits for Random Walks and Diffusions with Long Memory, Part 2
Time	:	3.15 pm – 4.15 pm

Abstract

I will survey recent results of normal and anomalous diffusion of two types of random motions with long memory in $\mathbb{R}^d$ or $\mathbb{Z}^d$. The first class consists of random walks on $\mathbb{Z}^d$ in divergence-free random drift field, modelling the motion of a particle suspended in time-stationary incompressible turbulent flow. The second class consists of self-repelling random diffusions, where the diffusing particle is pushed by the negative gradient of its own occupation time measure towards regions less visited in the past. I will establish normal diffusion (with square-root-of-time scaling and Gaussian limiting distribution) in three and more dimensions and typically anomalously fast diffusion in low dimensions (typically, one and two). Results will be quoted from various papers published between 2012-2017 with various coauthors.

There will be tea at 3.00 pm and coffee & snacks after the talk.

Both the talks will be held in II Floor auditorium. All are welcome.

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