Department of Mathematics, BGU

BGU Probability and Ergodic Theory (PET) seminar

On *Mar ,14 2019*

At *11:10 – 12:00*

In *101-*

David Lipshutz (Technion)

will talk about

Pathwise derivatives of reflected dffiusions

Abstract: Reflected dffiusions (RDs) constrained to remain in convex polyhedral domains arise in a variety of contexts, including as heavy traffic limits of queueing networks and in the study of rank-based interacting particle models. Pathwise derivatives of an RD with respect to its defining parameters is of interest from both theoretical and applied perspectives. In this talk I will characterize pathwise derivatives of an RD in terms of solutions to a linear constrained stochastic dffierential equation that can be viewed as a linearization of the constrained stochastic dffierential equation the RD satisfies. The proofs of these results involve a careful analysis of sample path properties of RDs, as well as geometric properties of the convex polyhedral domain and the associated directions of reflection along its boundary.

This is joint work with Kavita Ramanan.