Department of Mathematics, BGU

BGU Probability and Ergodic Theory (PET) seminar

On *Tuesday, June ,19 2018*

At *11:00 – 12:00*

In *201*

Ofer Busani (Bar Ilan)

will talk about

The Multi-Lane Totally Asymmetric Simple Exclusion Process

Abstract: The Totally Asymmetric Simple Exclusion Process (TASEP) is a well-studied model where one assumes every site on Z to be either occupied by a particle or vacant. Each site has a Poisson clock attached to it, fi the clock rings for site x, where there happens to be a particle, the particle makes a jump to site x+1 fi it is vacant. The TASEP is often used to model traffic on a one lane road. In this work we generalize this model to a finite number of lanes where cars can move from one lane to another at dffierent rates, and having dffierent speed on each lane. We consider the problem of finding the stationary measures for this model as well as its hydrodynamics (what would the traffic look like from the point of view of a helicopter). The talk will be as sefl-contained as possible. Joint work with Gidi Amir, Christoph Bahadoran and Ellen Saada.