

Department of Mathematics, BGU

BGU Probability and Ergodic Theory (PET) seminar

On Thursday, March ,16 2023

At 11:10 – 12:00

In 101-

Noam Kolodner (Tel Aviv University)

will talk about

A representation of $\text{Out}(F_n)$ by counting subwords of cyclic words

Abstract: We generalize the combinatorial approaches of Rapaport and Higgins–Lyndon to the Whitehead algorithm. We show that for every automorphism φ of a free group F and every word $u \in F$ there exists a finite multiset of words $S_{u,\varphi}$ satisfying the following property: For every cyclic word w , the number of times u appears as a subword of $\varphi(w)$ depends only on the appearances of words in $S_{u,\varphi}$ as subwords of w . We use this fact to construct a faithful representation of $\text{Out}(F_n)$ on an inverse limit of \mathbb{Z} -modules, so that each automorphism is represented by sequence of finite rectangular matrices, which can be seen as successively better approximations of the automorphism.