The Department of Mathematics
2020–21–B term

Course Name  Stationary Dynamics and Random Walks on Groups
Course Number  201.2.5461
Course web page  https://www.math.bgu.ac.il//en/teaching/spring2021/courses/random-walks-on-groups
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Office Hours  https://www.math.bgu.ac.il/en/teaching/hours

Abstract

Requirements and grading

Course topics

The general question that leads the course is: what can we deduce about a group when studying random walks on it.

Stationary dynamics is a branch of Ergodic theory that focuses on measurable group actions arising from random walks. The main object studied is the Furstenberg-Poisson boundary.

Applications of the theory can be found in rigidity theory, and recently connections with operator theory have been established

Topics:

• Brief introduction to Ergodic theory: Borel spaces, factors, compact models. Probability measure preserving actions and measure class preserving actions. Stationary measures.

1Information may change during the first two weeks of the term. Please consult the webpage for updates

• Applications to Rigidity: Margulis' Normal Subgroup Theorem, and Bader-Shalom's theorem (IRS rigidity).