Department of Mathematics, BGU

BGU Probability and Ergodic Theory (PET) seminar

On *Thursday, February ,29 2024*

At *11:10 − 12:00*

In *101-*

Ariel Yadin (BGU)

will talk about

The Infrared Bound Without Reflection Positivity

Abstract: To shake things up a little we'll talk about the Ising model. I will explain a phenomenon in thermodynamics called the "infrared bound", and what it is usually good for. The only known way to prove this bound on a graph is using a property called "reflection positivity". But this basically limits the graph in question to Z^d, the Euclidean lattice.

Recently with Tom Meyerovitch we have been thinking of a new method of proving the infrared bound on other (transitive) graphs. I will present a necessary and sufficient condition for something called "Gaussian domination" which in turn implies the infrared bound. The main idea of the talk is to present the dffierent ideas that arise in these kinds of thermodynamic models.

No background is assumed.