Department of Mathematics, BGU

BGU Probability and Ergodic Theory (PET) seminar

On *Thursday, January ,13 2022*

At *11:10 – 12:00*

In *101-*

Dan Rust (The Open University (UK))

will talk about

Substitutions on compact alphabets

Abstract: Substitutions and their subshfits are classical objects in symbolic dynamics representing some of the most well-studied and 'simple' aperiodic systems. Classically they are defined on finite alphabets, but it has recently become clear that a systematic study of substitutions on infinite alphabets is needed. I'll introduce natural generalizations of classical concepts like legal words, repetitivity, primitivity, etc. in the compact Hausdorff setting, and report on new progress towards characterising unique ergodicity of these systems, where surprisingly, primitivity is not sufficient. As Perron-Frobenius theory fails in infinite dimensions, more sophisticated technology from the theory of positive (quasicompact) operators is employed. There are still lots of open questions, and so a ground-level introduction to these systems will hopefully be approachable and stimulating.

This is joint work with Neil Mañibo and Jamie Walton.