

Department of Mathematics, BGU

BGU Probability and Ergodic Theory (PET) seminar

On *Thursday, May, 12 2022*

At *11:10 – 12:00*

In *101-*

Ioannis Tsokanos (The University of Manchester)

will talk about

Density of oscillating sequences in the real line

Abstract: In this talk, we study the density properties in the real line of oscillating sequences of the form $(g(k) \cdot F(k))_{k \in \mathbb{N}}$, where g is a positive increasing function and F a real continuous 1-periodic function. This extends work by Berend, Boshernitzan and Kolesnik who established differential properties on the function F ensuring that the oscillating sequence is dense modulo .1

More precisely, when F has finitely many roots in $[0, 1)$, we provide necessary and sufficient conditions for the oscillating sequence under consideration to be dense in \mathbb{R} . All the related results are stated in terms of the Diophantine properties of α , with the help of the theory of continued fractions.