

Department of Mathematics, BGU

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# BGU Probability and Ergodic Theory (PET) seminar

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On *Thursday, May, 16 2024*

At *11:10 – 12:00*

In *101-*

Omri Sarig (Weizmann Institute of Science)

will talk about

## **Equidistribution of Discrepancy Sequences (Joint with Dolgopyat)**

Abstract: Let  $\alpha$  be an irrational number and let  $J$  be a sub interval of  $[0,1]$ . The discrepancy sequence of  $J$  is  $D(N)$ , where

$$D(N) := \left| \frac{\text{the number of visits of } n\alpha \bmod 1 \text{ to } J \text{ for } 1 < n < N}{N} - |J| \right|$$

Weyl's Equidistribution Theorem says that  $D(N) = o(N)$ . But this sequence is not necessarily bounded.

I will characterize the irrationals  $\alpha$  of bounded type, for which the discrepancy sequence of the interval  $[0, 1/2]$  is equidistributed on  $(1/2)\mathbb{Z}$ . This is joint work with Dima Dolgopyat.